

PETROLEUM INDUSTRY ORAL HISTORY PROJECT  
TRANSCRIPT

INTERVIEWEE: R. T. D. Wickenden

INTERVIEWER: Aubrey Kerr

DATE: May 1982

AK: I'm Aubrey Kerr and I'm in the apartment of Dr. and Mrs. R. T. D. Wickenden. Their apartment number is 303 and the address is 1450 Beach Drive. Today is May 19<sup>th</sup>, 1982 and I'm about to ask Dr. Wickenden, better known as Bob what his background was, where he was born, his early upbringing and we will lead along as we go. So Bob, to open the proceedings, could you tell us where you were born?

RW: I was born in Outremont, Quebec, a suburb of Montreal, July 17<sup>th</sup>, 1901. We lived there for awhile and lived in various parts of Quebec. It happened that my folks had recently come from France where my father had studied art so that I was brought up speaking both French and English. When I was still fairly young we moved down to Connecticut where I went to school, had most of my schooling down there and eventually I went to university at Brown University at Providence, Rhode Island. I put in a little time before university working in a bank in New York. Eventually I had a bachelor's degree, PhB, which is an unusual degree for most places, it's an old degree, from Brown University. Then I had an Austin??? Teaching Fellowship at Harvard and studied there for my PhD.

AK: Yes, well that sounds like a very interesting and unusual program of education but perhaps I can go back Bob, to Outremont, Quebec. What attracted your parents to come to Outremont, was there an particular. . .?

RW: Well, I don't remember of course, I don't know just what brought my father there. He was an artist and he had done a certain amount of work in the province of Quebec for people in the government and the church. So far as I know he decided to move there, probably because it was partly French you see. They'd been living in France and my father had studied at L'Ecole d'Boisseur??? in Paris and he'd painted at various places in France, so that the whole family was French speaking.

#037 AK: Right. Just to digress for a moment, is that your father's work up on the wall there?

RW: Oh yes, most of these are fathers.

AK: Is that right? He did a lot of landscaping.

RW: Yes, and he did a fair number of portraits, like that one up there over the sideboard there is an English writer who was in France, Gilbert Hamilton. We wouldn't hear of him nowadays.

AK: Do you recall any of your childhood in Outremont?

RW: Oh no. We moved away from there to Ste. Adèle, now a lot of people know about Ste. Adèle now if you go skiing. We lived there for a few years and I do remember a bit about Ste. Adèle. It's a small town. I don't know why we went up there except that it was in the

country and somehow the folks felt they'd get along there and it was a good place to raise a large family I suppose, without too much expense.

AK: The reason I'm asking a little bit about Quebec and in those very early days, do you have any perception of the Francophone-Anglophone situation. I don't want to use the word problem because it's a problem now but was it perceived as a point of friction or as a point of dissension.

RW: Not when we lived at Ste. Adèle as I remember, we got along fine with other people, we were part of life. Of course, there was no difficulty about language.

AK: No, because you spoke both of them.

RW: Yes. In fact, I didn't speak too much English there at that time. French you might say is my mother tongue, even though I've had all my education in English.

AK: And yet the name Wickenden has. . .

RW: It's English. My father was born in England and my mother was from down in Jersey, which is one of the Channel Islands also.

AK: Well, there would be a French effect there. Then when you left, after you'd lived in certain parts of Quebec, then you said that you went to Connecticut.

RW: Yes. My mother didn't stand up to the climate of Quebec too well and in fact, my health was a little bit uncertain as a young lad so we moved down to this place in Connecticut, a small town about 60 miles outside of New York. We lived there for awhile. I received all my, well, right through high school education, there. In English.

AK: And there was no indication that your family might become U.S. citizens?

RW: No. I'm not sure, father may have had U.S. citizenship but I was born in Canada, therefore I can claim . . .

AK: Yes, you can claim Canadian citizenship, right. Well then, after your high schooling you were sent to Brown University. Or did you choose that?

RW: I chose Brown University. A friend of mine had gone there and it was a fairly small university but a good university. I had the mistaken idea I wanted to go in for law.

#080 AK: I see. Well, that's all right. Your curriculum was of a general arts nature was it?

RW: Yes. At that time at Brown, there were certain required courses that you had to take, or you had to take in certain fields. It wasn't all a course that was of your own choosing. So I happened to go into geology because my faculty adviser who was helping me plan my course for the second year said why don't you take geology, I think you might find it interesting. So I got into geology and I found out that it was the field I wanted.

AK: Was this geology course a major or was that just the supplemental course at that time?

RW: Well, it was the elementary course, the first course I took was a general elementary course. But once I was in there why, I kept on with it and I became interested in both fossils and minerals. It happened that I understood maps, contour maps and things like that because my brothers were civil engineers. They did have contour maps around the house and I'd used contour maps since I was a kid. So that was an in with the geology department.

AK: Well sure. As a matter of fact they might have welcomed you as somebody that knew a contour map when they saw it.

RW: Well, I got along pretty well with that angle of the thing because I could read a contour map. I also found that I could get a certain amount of extra work in the department and doing things in connection with it.

AK: As an instructor I suppose.

RW: No, I don't know that I was an instructor. It was more or less helping out with the preparations for the lab and various things like that.

AK: A modest stipend?

RW: Oh yes. And I needed it.

AK: Yes, you would. Instead of washing dishes in the cafeteria.

RW: Oh, I washed dishes too.

AK: You did eh?

RW: Oh certainly. In the cafeteria. I did all sorts of odd jobs.

AK: I see. So your entrance into university life was entirely up to your being able to fund your own education.

RW: Certainly.

AK: Yes. Well, that's the best kind of an education, when you know that you have to pay for it yourself. So in what year, was it in your first year that you took this basic geology course?

RW: I took the basic geology course in my second year.

AK: Oh yes, I see. Then you proceeded to what you call the PhB?

RW: PhB. A Bachelor of Philosophy.

#121 AK: I see. And would that be conferred for a kind of general liberal arts. . . ?

RW: It would be this science course outside of engineering. And things like that. A regular arts course was a bachelor of arts, but you had to have all sorts of Latin for that.

AK: So philosophy, PhB, maybe would you call it a waste basket to pick up . . . ?

RW: Yes, and to pick up the science, the general science, like ??? or anything like that.

AK: Without the engineering?

RW: Yes.

AK: Yes, right.

RW: The BSc was for engineering.

AK: Certainly, yes. So in what year did you graduate from Brown, do you recall?

RW: 1926.

AK: And just for the record, Brown University was in Providence, Rhode Island. The smallest state in the union.

RW: Yes. It was an old university but not very large. It's quite a bit larger now but at the time it was quite modest but quite a well known university.

AK: And then, during those under-graduate years, apart from being lab assistant and maybe doing some dishwashing, did you have any summer work that was connected with geology?

RW: Not directly. As an undergraduate I worked on forestry surveys because I had connections through my brother, who was Chief Forester for???, what later became Consolidated Paper. So I worked on, I came up to Quebec and worked in the province of Quebec in the

bush for most of the summers.

AK: I see. Here again, this would augment your bank account.

RW: Oh, absolutely, you needed it.

AK: Yes, you needed it. That was good work and it was being outdoors and everything else. So when you finished Brown then, I guess you started to think about, what do I do next. You were still interested in geology of course.

RW: Geology was my major as an undergraduate.

AK: It had turned into your major, yes. Did you have to write a thesis for this PhB?

RW: No. it was just ordinary exams and things like that. I found that palaeontology was my main interest and I got very good advice from the palaeontology professor, who turned out to be a very good friend. At that time, the head of the department wanted me to come back and instruct as a graduate part time and take a Masters degree. But the professor of palaeontology, Dr. Willard, gave me very good advice, he said, don't commit mental suicide. We've given you all we can here essentially and he pushed me into at least changing universities and into applying to Harvard. I applied there and I managed to get an Austin Teaching Fellowship so I could do half time graduate work and half time instructing in the lab.

#174 AK: Now this Austin Teaching Fellowship, was it awarded on the basis of scholarship basically or was it also on need?

RW: I suppose it was to a certain extent, scholarship, because I had to go up and be interviewed, various things like that. It wasn't just on the basis of need. It was pretty good, it paid \$900 a year.

AK: That was a small fortune in those days.

RW: Well, of course, tuition then at Harvard was \$300 a year.

AK: So you had to pay your own tuition out of that?

RW: You paid tuition for half courses you might say, you weren't allowed to take more than half of the requirements for the year you see. It took longer doing it this way because you were teaching half time and studying half time supposedly. It did have one advantage I think, I could sit in on other courses, I got to know the faculty and I could sit in on courses that I wasn't taking for credit.

AK: And you didn't have to pay for those?

RW: Oh no. It was just a matter of . . .

AK: Just going in and sitting, yes, getting permission from the faculty eh? So at Harvard you would run into some of the giants there. Could you maybe name one or two that you felt influenced you and with whom you became. . . ?

RW: Well, I worked quite a bit with Professor P. Raymond. He was in palaeontology and at that time at Harvard, Dr. Cushman was nearby. He was willing to take on some students for micro-palaeontology, Foraminifera???. He had his own lab, about 18 miles out of town and he'd allow us to go down there and work all day. So that I was able to study under Cushman, who was probably the outstanding man on Foraminifera, microfossils and so on, at that time. Of course, I had connections too with Professor Larson who was in optical mineralogy and even sat in on courses with Dr. Palachi, who was quite a

mineralogist at that time. So I was able to get a fairly good background besides just my specialty.

#220 AK: Tell me, that would be in the late 20's. Had the application of Foraminifera to the identification of marker horizons in the Gulf Coast been linked at that time? Had that already started?

RW: Oh yes. In fact a number of men with some of the oil companies came up to Sharon, Massachusetts which is the place where Dr. Cushman had his lab, came up there to study under Cushman for awhile. They'd spend 6 months or so just ??? down there, he'd take on a certain number of them if they were men who had, and a number of them did that.

AK: I see. So would you say that the practical application was one of the main driving forces in the Cushman lab, that there was this, shall we say, financial support that had a practical aspect that was helping to bankroll the operations. Would that be a fair statement?

RW: Well, it may have had to a certain extent, although Cushman was very much interested in what you might say was the classification and the more or less, scientific study of the Foraminifera. I think he had made a fair amount of money working for one of the oil companies in Mexico before he set up this lab. He also did a certain amount of work for the Smithsonian and people like that. He'd had quite a background of work a long time before he took this up from that viewpoint because he published things in the Smithsonian about 1910.

AK: So his experience with forams went back quite a long ways. It's interesting you know, when you think about forams that required microscopes to look at, that you would tie that in with palaeontology. It's certainly natural it should be tied in with palaeontology, a branch of it. Just as a kind of an aside, would you have any idea when the study or Foraminifera really got under way, what year? That would be before your time perhaps. Do you have any background?

RW: Well, there had been of course, some considerable study in Europe. Quite well known. They had used them to some extent for dating strata. But the use in the oil industry and correlating well, I think more or less started in the States to a great extent.

#281 AK: Oh yes, I would agree with that.

RW: Cushman, and then of course, by the time I was studying, there were other men who were making quite a bit of use of Foraminifera in the wells, correlating wells and so on. So that was pretty well started you might say, before my time. I don't know just when Cushman worked on oil geology or identifying and correlating beds on the basis of Foraminifera but I know he did quite a bit of work in Mexico for one of the big oil companies.

AK: Yes right. Okay. So then you were in Harvard and you were proceeding to your doctors degree or your masters first?

RW: Well, I went through for a Masters but that was more or less incidental down there. Much the same thing as the English system, you put in a certain amount of time you get a Masters degree. It was more or less on that basis. At that time, after I got in to post graduate studies, I applied to the Survey, in fact when I graduated I applied to the

Geological Survey of Canada to work as a student assistant. I started off then, when I first had my bachelors degree, I started working as a student assistant the first year, summer of 1926.

AK: So during your post graduate work at Harvard you were already getting into the Geological Survey of Canada system then?

RW: Yes.

AK: And then your first summer was out in 1926?

RW: Yes, I worked in Gaspé with W. V. Howard. We worked down in the southern part of Gaspé there, well, we were on Nouvelle and so on, on the. . .I've forgotten the name of the place, I'd have to look at the map. This was a little while ago.

AK: Yes, it is. Do you recall what the Survey paid you?

RW: I think I was paid \$50 a month. And I had some travelling expenses and of course, my board. . .

#329 AK: Yes, well that was taken care of, under the rules of the Survey. So your first summer. And of course, you were in some of the Ordovician. . .?

RW: I was actually in the Devonian.

AK: Yes, the Devonian. Did you ever run into any of those folded anticlines in there?

RW: No, I don't think we did, we weren't that far east. We were down on the Banc Schalleur???. We were in that area where there's. . .as a matter of fact, one of the early Devonian fishes occur there as fossils. So mostly I think, mostly Devonian and I believe some Pennsylvanian or something like that.

AK: Right. Could you tell us why you chose the Survey?

RW: Well, of course, it was an opportunity to work on geology and work in the summer. Also it was a chance to work in the east. I wanted to get experience. So the Survey was a natural place.

AK: Yes. And you just applied and you were accepted?

RW: Yes, I applied and I was accepted to work in the east. I had one disadvantage in that the universities in the States didn't end quite as early as the universities in Canada, their school year didn't end. So most of the parties were out earlier than we were. But Dr. Howard happened to be teaching in the States someplace so he didn't start quite as early as most of the parties at the time.

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Tape 1 Side 2

RW: . . .[in mid sentence] ??? is also quite well known for that approach. I had, as I said before, I studied some courses with Dr. Larson and Dr. ???. Of course, the teaching in the elementary course laboratory, the elementary course was given under Professor Mather??? who was quite a good lecturer for a popular elementary course. That was a useful experience. Having to take the elementary students out of field trips and helping them out in the lab and that sort of thing, that was all good experience.

AK: All during this time would you say that your exposure to the type of say, sedimentary

geology focussed on oil and gas was very extensive or was it rather minimal.

RW: I'd say that so far as oil and gas went it was rather minimal. The professors there, like Professor Raymond, who also taught stratigraphy and really taught sedimentary geology to a great extent, sort of worked on the basics more. Of course, his main field was invertebrate palaeontology. But he was very much interested in sedimentation. I really got a good background in sedimentary geology. Also under Professor Larson I did some studying on heavy minerals and sediments. Professor Larson was optical mineralogy and he was very well known at that time for. . . he had, well, it wasn't exactly, yes it was a textbook on the magnification of minerals under the microscope. That was all useful background.

AK: Sure. Then your second field season in 1927, where did you spend that?

RW: Again, I was sort of limited because of the year but they offered me a job to work in Ottawa in the laboratory of what was then called the Borings Division I think, of the Survey. That was dealing with samples, they were collecting samples from wells in western Canada, I think at that time mostly from Turner Valley although there were some that were from outside. It amounted to quite an extent of washing the samples and identifying material in them to some extent and things of that sort. But I saw the opportunity for studying the Foraminifera there. Since I knew that there was this man at Harvard, Professor Cushman. Dr. Cushman, I don't think they rated him as a professor, he had his own consulting work you might say. He was outside the Harvard University. I saw the opportunity to go ahead with that and it was quite interesting to me anyway.

#047 AK: During this summer working the samples did you try to pick any bugs from the samples?

RW: I don't think I did that summer. Most of the material was . . . well, you take the material from Turner Valley, it was pretty well indurated you know and you wouldn't have much of a chance. I hadn't done any work on micro-fossils really, at that time. I picked that up later.

AK: I guess about that time Grant Spratt took the job at Calgary. There were some people out in Calgary and at that time then, you would probably only know them by name, you wouldn't have met them.

RW: Yes, I was working in Ottawa.

AK: Certainly. People like, was there a chap named Steele. Let's see Grant started I think, in '26 and then he brought Vern Taylor out I believe, in '29, from Winnipeg, who worked in the Borings Division. Then there was another chap that worked there that is retired in Calgary, still alive, Jack Goodman, who was with Socony Vacuum. Of course, you see when the Bennett government come in, he said, or when . . . you know, it was 1930, '31, when the jurisdiction passed to Edmonton from the feds. And there was some change there and he went back to the U.K. So you would have probably heard of these people just by name at that time.

RW: Yes, I did.

AK: So then the following year, the field season of '28 did you continue with this or did you go somewhere else?

RW: Yes, '28 I managed to convince them that I should be given the chance to collect material from the outcrops in the plains of western Canada. You know, picking things up and ???  
I came out and collected material from the Bears paw and Pakulcki??? in southern Alberta. Then I stopped over in part of Saskatchewan. I don't think I got too much material in Saskatchewan because I was collecting mostly from marine beds in order to get Foraminifera. Then I collected some material from the Manitoba escarpment.

AK: When you were doing this were there other officers of the Survey out in the field that you would relate to, like M. Y. Williams and some of the others or who else was out there doing actual. . .?

RW: Well, one who was ???, though I didn't manage to connect with him was Frank McLearn. He was working in southern Saskatchewan but I somehow or other couldn't get in touch with him. I was trying to because I thought he'd be able to give me a better idea of what outcrops to collect and things like that but it wasn't organized that way. I was pretty well on my own.

#089 AK: So you were kind of a one man field party?

RW: Oh yes. I met Pete Sanderson that year and he helped me out, taking me around some parts around ??? and that region.

AK: Was Pete employed. . .?

RW: Pete was employed I think by Imperial at that time.

AK: As you know, his home town was Medicine Hat. So he would be pretty familiar with all that and he could take you right to the right outcrop. Who else do you recall running into besides. . .?

RW: Well, I managed to visit Calgary, I met Ted Link. I also met, was it P. D. Moore?

AK: Oh yes, P. D.

RW: From Turner Valley, he showed me around Turner Valley. I managed to get up there and see things. In fact, I think it was Bob Brown Sr. that took me out to Turner Valley and some of these people, I managed to meet some of them and get to know them a little bit, at least know who they were.

AK: Now the building as I recall it, which is now demolished was what they called the old immigration building at the northeast corner of 10<sup>th</sup> Ave. and 1<sup>st</sup> St. E., which is just a block away from the Customs Building and we'll come to that later. That was the place where fellows like Grant Spratt and others worked.

RW: I don't think I had anything particular to do with them that summer.

AK: Oh I see, you didn't call in there?

RW: I don't recall. I may have called in there but it was just rather incidental. I was mostly interested in getting to see Turner Valley.

AK: Yes. Did you have any feeling about turning away from the Geological Survey and getting into entrepreneurial activities or did you still feel that your career lay in the path of the Survey? Did you see a fork in the road there?

RW: I don't know that I thought too much about that. Of course, my main object was the study of these micro-fossils. I was working up for my doctorate anyway.

AK: Yes, I should have asked that before. By that time had you chosen the subject of your

thesis?

RW: Oh yes, pretty well, it was the study of Foraminifera in some of the Cretaceous beds in western Canada.

AK: So you'd blocked that out for yourself, good. So then, let's see now, we've got '28, then '29, had you got your PhD by then?

RW: Oh no. You see, I was taking half time and I had to put in 2 full years.

#128 AK: Oh yes, it took a little longer.

RW: Oh yes, it took 4 years.

AK: Oh yes, I see, what did you do the summer of '29 then?

RW: '29 I was assigned to work with W. A. Johnson, Billy Johnson as he is well known. He was working on ptysticene. I worked with him mostly, let's see now. . . '28 I was in southern Alberta, '29 I was with Johnson. We worked on the water supply for Regina. Then part of the summer I spent with Professor Kirk from the University of Manitoba who was working on the Manitoba escarpment. I spent my last half of the summer with him and had the opportunity of doing more collecting of the Cretaceous of the escarpment in southern Manitoba. I got a good lot of material. Kirk of course, died a couple of years later as a matter of fact. He was a very nice chap, a little older than I was but not too much.

AK: When you were doing, could we call it ground water survey, in Regina, could we call it that?

RW: Yes, that's what it was.

AK: Did you run into Red Goodall, D. P. Red Goodall?

RW: No, I don't remember running into him then.

AK: Red told me when I interviewed him 2 years ago that he had done quite a bit of ground water survey work in Saskatchewan but that might have been a little later, I'm not sure.

RW: Might have been. We had a Professor Simpson from North Dakota who was specializing on ground water and had done quite a bit of work bin the States on ground water. He was up as a consultant, and had connection with this Regina work. As a matter of fact, around Regina I was working mostly with him. Let's see now, who was the. . . I forget the name now. There was a young fellow who went into hard rock who was the other assistants, he was from Saskatchewan and he's been very successful.

AK: Was this ground water survey work done at the request of the federal department of agriculture or was it. . .?

RW: No, no, I think it was done in connection with possibly, the Saskatchewan provincial government but certainly the Regina, the municipal government.

#170 AK: Oh, the city itself needed. . .

RW: Needed water because they couldn't get any good supply at that time, of surface water. They had one source of water from ptysticene, gravels and stuff in one part, they had a pretty good supply but they needed more. The results of our work, it was suggested they do some drilling in one part and they got an additional supply, although I'm afraid it was rather hard water. Regina was well known for that.

AK: I seem to recall that Regina now gets its supply from some kind of dammed up lake, I can't remember the name.

RW: Yes, they're getting a certain amount of surface water. I don't know whether they still use the water from the glacial deposits or not but at that time, they could get water from quite a few places around there. There was a certain amount of gravel and so on. It was a matter of a plysticene or a glacial deposit source.

AK: Then to get back to your academic pursuits, you had your PhD conferred upon you in what year?

RW: Well, I came on the Survey in 1930 as a regular . . .assistant geologist or something or other. I had done my academic work towards the PhD, I had passed my general exams but I still had to turn in a thesis. I came back and turned in my thesis the next spring and defended my thesis and got my PhD in 1931.

AK: Right. In 1930 when you were working for the Survey, your first permanent job, what was your starting salary?

RW: Now, I think it was something like \$150 a month. Then Mr. Bennett came in and the civil service had to take a cut in pay in the Depression days. It wasn't any matter of getting increases every year, whether you deserved it or not. I think they cut us 10% so eventually, I believe for awhile there, my cheque was \$140 a month. But this was Depression days so you had to make do.

AK: Then looking back, your pension that you're receiving now would be dated back to that date then?

RW: Yes, although it's based on my later salaries.

#213 AK: Oh, I know, but I meant for the number of years, your multiplier.

RW: Yes, I put in 36 years with the Geological Survey of Canada.

AK: Right. So then your first permanent assignment then, what did you start doing then?

RW: I was working on the surface deposits plysticene of southern Saskatchewan. We were preparing work for what's called an 8 mile map, of southern Saskatchewan. That first summer I worked down around the Assiniboine in the southernmost part of Saskatchewan, south of Moose Jaw and Regina.

AK: Who was your Party Chief?

RW: I had my own party.

AK: Oh you had your own, oh good, you were fully fledged.

RW: Yes, sure. Johnson was working the northern part and then he came out, I also did some work in Alberta that summer. We got started on, I've forgotten, some of the joint papers, a couple of joint papers at that time. On surface deposits.

AK: I should go back a little bit Bob and ask you if I may, about your personal life. Had you by that time been married?

RW: Oh yes. Of course, like wild young fellows, I got married in the fall 1929.

AK: I see, and you'd met your wife where.

RW: At the university. I'd met her at university, in fact she graduated a year before me. I needed some brains in the family so I married her. She was Phi Beta Kappa and had a ??? degree, cum laude, and so on and so forth.

AK: That helped bolster the academic prowess eh? Did you start raising a family fairly soon?

RW: No.

AK: At the time that you'd taken on your permanent position with the Survey, did you move to Ottawa then?

RW: Yes, we moved to Ottawa.

#252 AK: And you lived in Ottawa.

RW: Yes, we moved to Ottawa in 1930. We found some sort of an apartment I remember, I think we paid all of \$45 a month. It may not have been quite that much but something like that.

AK: And you were fairly close to the old Victoria Museum?

RW: Yes. In fact, I lived within one block at first.

AK: Would that be on O'Connor?

RW: No, it wasn't O'Connor. No, it was off Park Avenue or something like that, Park Place or Park Avenue. It was east of the museum.

AK: Then during the first few years then you headquartered in Ottawa then, that was your home base with your wife?

RW: Oh yes. But of course, I spent 3 or 4 months in the field every summer. Mostly in western Canada.

AK: By that time had George Hume come on the scene then?

RW: Oh, yes, he'd come on the scene quite a while before that. He was working of course, in the foothills and areas like that.

AK: Let's see, I'm trying to remember when Con. . .

RW: Con came on as season assistant to Johnson in 1930. Johnson got Con as his assistant and I got some other chap that didn't go on, who didn't go on with geology, he wasn't too good a chap, he wasn't too interested in geology anyway. But Johnson got a good assistant in the form of Con.

AK: Right. Then when Bennett took over he chopped salaries. So did you continue working on the plysticene or did you work. . .?

RW: I continued doing field work on the plysticene and water supplies for 2 or 3 years.

#294 AK: Right. Then we're getting up close to 1933 when we discussed this a little earlier about your field season out with Dr. George Hume. You said you worked up in the headwaters of the Red Deer River.

RW: I wouldn't say quite the headwaters, we were in the foothills, west of Sundre of course. At that time they were drilling a well called the Hunter Valley well. We more or less headquartered at that part. I'm trying to think, I could find my way there but I don't know that I could tell you right now just how far it is. But it was in front of the mountains. We worked off from there because they were drilling this wildcat well.

AK: And I imagine it was cable tools?

RW: Yes, it was.

AK: Was this your first exposure to disturbed beds and to getting back closer to the mountains, I mean apart from the visit in Turner Valley?

RW: Well, in the summer of '28 I collected some material down around the Old Man River from Blairmore east. So I had seen some of the beds and I tried to get the material to see if I could get any micro-fossil Foraminifera from some of these disturbed beds. I did get some I think around Pincher Creek.

AK: What was the purpose of your field season with Hume, what were you supposed to be doing?

RW: We were studying the general geology of that area. I'm not sure what exactly the area we were assigned. I'm not sure there was any definite, we weren't doing a regular quadrangle type of mapping. We were following through more or less structurally, following through from north of Red Deer and we worked our way along on the structural trend, right down to pretty well Waiperos Creek, near Ghost River. Pretty well down to the Ghost River really.

AK: Right. Then you were still on permanent staff then were you?

RW: Oh yes.

AK: They didn't fire you, no lay offs?

RW: No. There weren't many they could lay off. It wasn't a very big staff you know, in the Survey in those days.

AK: Can you recall just how many people were?

RW: I think there were about 30 geologists. We were probably the major group of geologists in Canada at that time. There weren't many others.

AK: Then you survived until 1935 when Bennett in a last desperate attempt tossed you \$1 million and said, hey, go out and spend it. So you bought a whole bunch of cars and trucks. That was the big year of the . . .

RW: Yes.

End of tape.

Tape 2 Side 1

AK: This is tape #2, side 1 and we're continuing with Dr. Wickenden, May 19<sup>th</sup>. We're just at the point where Bennett is hopefully trying to turn the economy around by spending a large sum of money and you were saying that the Survey's budget up to that time was about \$100,000 per annum and that included the TOPOL??? Survey. Fellows like, well, we won't worry about that. Then when this thing turned around what role did you play in this expanded activity?

RW: I took on, it was a funny situation. At that time the department of agriculture was organizing the study of improving agricultural things in the west, the Prairie Farm Rehabilitation Act, that was the thing.

AK: PFRA.

RW: PFRA. And they had a water devolvement committee and they wanted a representative from the Survey on that. So Mr. W. A. Johnson was appointed as representative but I went out and was active for him and the PFRA. So I got started on that to some extent, there were discussions and so on, we met in Regina and places. That summer I was to take on, other than this PFRA, I was to take on the study of some of the geology of

northeastern Saskatchewan, along the Manitoba, Saskatchewan escarpment, up near I guess near Hudson Bay junction and in that region. So I started out on the party with that. In the middle of summer they decided that they wanted me to do some work with the water development committee of the PFRA, which I hacked around for Johnson. So I had to come away from the party and Frank McLearn took over my party in northern Saskatchewan, in July sometime. So I was sort of a double agent. It wasn't just a straight forward water thing. But the water development committee, my work was mostly as a sort of consultant advising them on possible sources of water that we knew about. And whether it was worthwhile drilling wells for farmers and various things of that sort. It was also you might say, consulting with the Saskatchewan people on the wells that were being drilled in Saskatchewan. I'd been examining and correlating some of the wells when the samples came into Ottawa. So it was sort of a mixed up affair. I left my own party and went south and spent the rest of the summer in southern Saskatchewan and regions like that, to a certain extent with the problems with the water development committee.

#047 AK: On your field party that you had to leave, were there any people that you remember that went on with the Survey, did you have some people that you remember?

RW: Well, I don't know that they went on with the Survey.

AK: Or with the oil industry?

RW: Yes, Don Weir. Don Weir was one of the members. Incidentally Bill Landes??? had been my assistant one of the years before, about 1932.

AK: What was the name?

RW: Bill Landes, R. W. Landes.

AK: Oh yes, R. W., he went to . . .

RW: Imperial Oil.

AK: Yes, and he went to South America. Right, you call him Bill and somebody calls him Bob.

RW: Well, you see, his first name was Robert but for some reason or other I think, at that time his family used to call him Bill.

AK: Yes. He was a brilliant geologist. Maroney had quite a bit of respect for him because he hired him out of Ecuador and brought him back down to Peru to straighten out the geology of the Tilara field.

RW: He was a very fine chap.

AK: Then you had Don Weir, would that have been one of Don's earliest summer field seasons.

RW: Yes, it was his first field season. At that time I had a number of assistants. I don't know what became of most of them. I didn't know who I'd use as sort of my senior assistant but I soon realized Don was the man.

AK: No question of that. He's retired now and I saw him the other week. Chevron kept him very busy even after he retired. Then after Bennett got defeated by Mackenzie King did the Survey kind of lapse back down into a . . . or did it continue the same pace?

RW: I wouldn't say we continued at quite the same pace but we kept up at a fairly decent pace from then on. we had regular field parties and did regular work from then on. We weren't

put to the situation that you and I had.

AK: No. And you continued to headquarter out of Ottawa?

RW: Oh yes.

AK: Up until what year?

RW: That was up until 1950.

AK: And during that period up till the beginning of the war, were there any special assignments that you had that were interesting.

RW: I continued with the water development committee and continued going back and forth between the Survey work and their work. My work then, well, I started mapping the area looking over the Manitoba escarpment in southern Manitoba, which later published a report on that. I did that work, let's see. Oh yes, I did quite a bit of work on water supply and that sort of thing in southern Alberta about that time. Although they decided not to publish, it didn't work up into any publication although the records were fair and I think they've been using them since. So I worked through southern Alberta in '36, I was in southern Alberta. Then. . .it's funny, it's sort of a blank for '37. Because I know '38 I was in Manitoba working on the escarpment.

#094 AK: Maybe we could stop at this point here in 1938 and we can continue tomorrow. So thank you very much Bob and we'll stop at this point. Thank you. Now today is May 20<sup>th</sup> and we're resuming our conversation with Dr. Wickenden and we're going to back track a little bit to an interesting episode. We did discuss your field season with Dr. George S. Hume in 1933 where you met Jonesy, Imperial Oil's company scout and Dr. T. A. Link who were also out in that part of the world. One of the things that you mentioned and Jonesy mentioned this morning as a matter of fact, when I saw him was that your total field budget was \$1,800. Could you just tell us what that had to cover?

RW: That had to cover our travelling expenses and our living expenses for the summer. We lived fairly comfortably in those days. Mind you we had no cook or assistants in that work and we both did the cooking. We lost weight and we blamed it on the cook. We got along pretty well. We really had good meals. I remember one thing we bought supplies at Sundre sometimes and at the store there eggs were selling for 9 cents a dozen. Fresh eggs.

AK: The person that helped you get back into your locations was Tom Hargraves, a packer and you were saying that he would take you in by pack horse and leave you and then come back and fetch you. It's interesting about Tom because I don't know the gentleman but I know his son very well, Gordon Hargraves, who has just retired from Ocelot. Prior to that he was with Canadian Superior. Could you tell us a little bit about Tom Hargraves?

RW: Tom was the forest warden or fire warden and he had some pack horses. So when we wanted to go somewhere he'd get his pack horses and take us in, for example into the Burnt Timber and the Fallen Timber. He'd leave us there for whatever length of time we wanted to stay. We'd figure out how long we wanted to stay to do that particular bit of work, then he'd come in and pick us up and we'd go back to the Red Deer River and possibly we'd go out to get supplies and see what was going on in the world. Then we'd go on another trip. Of course, that was at the north end. At the south end we were able to get in by car where we wanted to go.

AK: Did you hire a car or . . . ?

RW: Oh no, we had a Survey car.

#144 AK: A government car that was in storage in Calgary.

RW: Yes. It had been in storage, I think it was a Ford of some sort, probably a Ford truck. I know we used to get it repaired at Maclin's.

AK: Right. Did you in those days, have a list of stores that you were asked to patronize?

RW: No, we didn't. We weren't bothered by any of that at that time. The Survey had always tried to be as independent as possible and it wasn't until later that we got quite a bit of political pressure put on us to do certain things. But on the whole we were able to trade wherever we wanted to.

AK: The only reason I mention this and I don't want to be putting a bunch of my own experiences in here but my first field season with Dr. W. E. Cofield, out on the Kamloops sheet was an experience in patronage. We had to buy our groceries at a very obscure store way up in the corner of the city and also had to get our car serviced at the certain garage downtown. So that was my first experience.

RW: That was probably later on.

AK: That was 1940.

RW: Yes, well, there was quite a bit of pressure at that time.

AK: Right. And with the different forces at work in the different provinces. Okay, the other thing I guess you were saying about your travel out to the field was of course, it was by train and you would find it dusty and sooty.

RW: Oh yes, there was plenty of dust and soot blowing in to the back of the train as we swept across the country. You see, it was quite a dry spell at that time, especially on the prairies. Naturally those trains kicked up a lot of dust on the tracks because everything was really dry.

AK: Okay, so we've gotten to 1938, now let's move ahead and perhaps you could describe your 1939 experiences.

RW: 1939 I had a change again in work. The department of agriculture had been wanting to get information on the geological background to their soils work and I was sent to Nova Scotia to work on the surface deposits and in cooperation with the soils men of the department of agriculture. I had a field party down there, I think I had 3 assistants and a cook and we camped out and worked in Nova Scotia. Of course, that was totally new to me, a different type of geology at all. Where I'd been working mostly on the prairies and the foothills. This was in connection with surface deposits in Nova Scotia.

#193 AK: Would this be strictly surficial geology as opposed to any bedrock geology?

RW: Yes, it was all surficial geology. As I remember that year we did come under a certain amount of pressure to hire certain people. But fortunately the people we were put in contact with were quite reliable and very helpful.

AK: Did any of these people go on to industry or do you recall any of their careers?

RW: Well, Art Nauss was one of my assistants and Art later went into oil geology in western Canada. He's the only one that I know that went on. I had a young chap by the name of

McQuarry and I've forgotten the name of the other one. But so far as I know the other men didn't go on with geology. I'm not sure what became of McQuarry, he may have gone on with geology, he may have gone overseas because the war was declared that summer.

AK: So Art was then an undergraduate or do you recall?

RW: I don't recall. He may have just graduated. Art was a great one for hitchhiking and he'd been hitchhiking all over the province before we went in the field as a matter of fact. Down in Nova Scotia. He was a great one for getting around.

AK: Would you say that was an element of nomadic sort of activity?

RW: Partly. He wanted to see, to some extent I think he wanted to see what the geology was. And also he had an knack of getting on with people and enjoyed seeing people. There were all sorts of funny things that he'd done there.

AK: Was he a native of Nova Scotia?

RW: Yes, I think he came from near the coast there.

AK: Would it be Lunenburg?

RW: Yes, I think he was near Lunenburg.

AK: You see, he was of German descent.

RW: Yes, I think he was Lunenburg.

AK: So there was quite a colony of German descent people in Lunenburg. Okay, so then you were still headquartered in Ottawa?

RW: Oh yes.

#235 AK: Another thing I should ask you, were you then starting to raise a family, had you already . . . ?

RW: Oh yes, my son was born in 1935. He's now professor of history at University of Alberta in Edmonton.

AK: Any other children?

RW: No.

AK: Just the one boy. Does he have any children?

RW: No, he's a cheerful bachelor.

AK: Oh, he's a bachelor.

RW: Yes, he collects books and antiques and rugs and such things like that. He was quite a good student and got a scholarship, after he finished University of Alberta he had a scholarship for Cambridge, England and then went on for his doctorate at Cambridge, in history. You might wonder incidentally, why he went into history and I'm in geology. He did read quite a bit of geology books I had around the house but of course, my wife majored in history when she took her MA.

AK: That's certainly a good influence. Okay, so then after your Nova Scotia field season you returned to Ottawa and I suppose you wrote up your report.

RW: Yes, I think I published something on that. I'm not sure, I think it was published in Royal Society. I don't remember that the Survey published anything on it but I did publish something on that.

AK: When were you elected to the Royal Society?

RW: 1939.

AK: Oh, right at that time eh. Well, that's a very fine honour to be bestowed. Then moving on to 1940, did you resume your prairie activities?

RW: No. They still wanted me to go on working with ????. I don't know why, I think with the war on other work might have been more useful. But I went back to, let's see, 1940, I went back to Nova Scotia and I continued mapping the surface deposits and sometimes working with the department of agriculture. But on that work, I worked alone those summers. Qualified student assistants were rather scarce by that time and I felt that I could get around that particular part of the country. I was staying in town and so on. I used to drive around in the car and then walk. I used to make a point of walking about 8 or 9 miles a day to look over the parts that I couldn't get at with roads in the car.

#288 AK: How many years did you carry on. . . ?

RW: Well, I carried on in 1940 and '41. Now one of those years I did some work in the eastern townships of Quebec too in connection with the soil work. But it was mostly going around with the people from the department of agriculture, the soil people. I went around, got a chance to look over some of the parts of the eastern townships where the late marine ??? deposits and things like that.

AK: During the war George Hume became a kind of technical assistant to the comptroller of fuels. Did your paths cross again, did you ever get into anything to do with the oil sands or any of Hume's work?

RW: No. Not that year but while I was doing some of that work in Nova Scotia I did help out with looking over sites for some special radio stations that the signals wanted to set up. I drove around some of that country to find a suitable site with sufficient clay and various things like that in the soil. Went around with a Major that was working on that too in the signals. Also during the winters, on a couple of occasions I had to give some sort of a report on possible water supplies for some of the camps. I even went down to . . . what is that place near Sydney, Nova Scotia, around in that region, and the Gaspé, various places like that.

AK: So when did you resume your western Canadian thing? I'm leading up to, I think you said that you were transferred in 1950 to Calgary.

RW: Yes, but before that, in '42, we went up in the Peace River country, up there on the . . . they were drilling a well up near Commotion Creek. I believe it was the B.C. government that was drilling it.

#341 AK: That's right. It was T. B. Williams, M. Y.'s brother.

RW: That's right. We mapped the area around Commotion Creek and up ??? Cross and various things. More or less established some of the features of the stratigraphy there. There had been a bit of a mix-up on some of that in tracing some of the beds. They didn't realize that they had an over-thrust fault and beds were repeated whereas it looked like a different set of beds.

AK: Well, you were mapping some of the Triassic then were you?

RW: No, we didn't get into Triassic.

AK: Oh, Dunvegan.

RW: Yes, and the Cretaceous.

AK: Cetaceous, yes, right. You'd have to get a little farther back into the mountains to get your Triassic, you didn't get back in there.

RW: We didn't get back that far.

AK: Who were your, did you have any field assistants?

RW: Yes, we had some young chaps from I think the University of . . . let's see, Crawford was one. . .

AK: Ian Crawford?

RW: Ian Crawford was one.

AK: Worked with Shell Oil.

RW: And there was another one. . . Reid, he also worked later on for oil companies, I think his name was Reid.

End of tape.

### Tape 2 Side 2

RW: [in mid sentence] . . . just from the surface material was rather difficult and unsatisfactory.

AK: Did you do any boring?

RW: Well, we did boring by hand with a hand auger. I used to be able to get down, I had one that I could get down to 30' with it. And I can tell you this, I used it on dam sites for the water development committee there, I'd used it to see if they were getting into bedrock and things like that. The year I had Bob Follensby as my assistant, he was a great one, he could handle that, he was tall and he could handle a great length.

AK: Was this the summer of '43?

RW: No, that was before, back in '37 I think it was.

AK: Oh you had Bob back in '37?

RW: '36 or '37.

AK: Yes, well, that's important to remember because, for the record, Bob Follensby is now retired from the faculty at the University of Alberta. Have you been in touch with him at all?

RW: Not recently, I haven't seen him recently.

AK: I haven't seen him lately either. That's interesting. Now for the summer of '43 when you were doing this work, did you have any assistants with your party that went on, any names that you can recall?

RW: I don't recall any of the chaps that went on with geology. I only had one assistant with me at any time and we stopped and lived in the so-called hotels you know, country hotels.

AK: The Chinese restaurants with the oiled floor?

RW: If you made an excuse to get back into town once in awhile we could have a decent bath.

AK: So then following on then, '44, still the same kind of work?

RW: Yes, pretty well. I also started looking at some of the wells around Unity, Saskatchewan, where they drilled some gas wells at that time. I started to go through the cores that they were getting. I also had one boring done with the cooperation of the well driller for

Imperial Oil. He'd been doing surface, not exactly exploratory. . . stratigraphic drilling, and did put down one hole for me. It wasn't too good, I can't remember the name, an area southeast, it wasn't too far from Kindersley if I remember.

AK: Was that at Elbow?

RW: No, it wasn't that far south.

AK: That's okay. Would the drillers name have been Kortmeyer?

RW: Yes.

AK: He did a lot of failing??? core hole work for Imperial and I worked with him in southern Alberta. His first name was Fred and I believe he originated from Black Diamond. I was wondering in your travels then, whether you'd gotten far enough south and east to run into Cam Sproule?

RW: Oh yes. Well, of course, I'd known Cam on the Survey too. You see, Cam was at one time on the Survey in Ottawa.

#042 AK: What year was that, do you recall?

RW: I think he came on in '35.

AK: Yes, I think you're right.

RW: I think he came on with that project in '35. In fact, he was mapping hard rock then and then he left to go with Imperial Oil.

AK: Did you have much to do with discussing with him the stratigraphy of the subsurface of southern Saskatchewan at any time?

RW: To some extent, yes. I'd always stop off to see him and see how things were going, when he was headquartered in Moose Jaw as a matter of fact.

AK: That's right. They had a big spread there, they had Grant Fox, they had a fellow named Hurry, who ran the seismic crews from the States. Were you aware then, or do you think Cam was aware then of the false highs that showed up on the seismic and which they drilled? They drilled those deep tests down, almost into the Ordovician, on salt highs with collapses on each side.

RW: No, I wasn't aware of that. I do remember having the salt.

AK: It's interesting to try to get back and find out when they first twigged to the idea that it was a solution of salt and collapsed. But you were aware of that though?

RW: Later on.

AK: Yes, later on but not probably at that time.

RW: No. I don't remember Cam mentioning that or anything about that. I doubt if his drilling was close enough, it may not have been . . . that was out towards the west side wasn't it, near ???

AK: Well yes, it was around Elbow and Olgama. Then around Moose Jaw. They had a very big spread of land that they got from Colonel Baxter, who was I think, Calgary and Edmonton, one of those land companies, you know. Now going over to Unity, did any of those holes reach the potash?

RW: Yes.

AK: Was there any idea at all that the potash might be a strategic mineral at that time during the war?

RW: No, I don't think so. Now wait a minute I said yes. I'm not sure that they did drill into the potash, I think they finally drilled one well into the potash.

AK: I think there was one well drilled there. But no, here we were with potassium nitrate that was a tremendous explosive and you could make it out of potassium chloride. And you know, you often wonder, I guess they really weren't thinking along those lines.

RW: They weren't thinking along the lines of recovering it ????. After all that was quite, you might say, engineering problems. The recovery of it. It's all right to know it was there but the recovery was. . .

AK: That's true. We talked about Pete Sanderson a little earlier, poor Pete met his Waterloo there you know. Getting involved in a promotional company. Do you recall that? He got involved with a company that promoted the potash and they got down and they never really did finish the shaft.

RW: I didn't realize that.

#084 AK: Did you follow any of that when you were in Calgary?

RW: Indirectly. Leon Price who was working on my staff, followed that more closely. I was mostly pushing papers in Calgary.

AK: Well, I'm jumping ahead, sorry I didn't mean to do that. So '43 and '44, did you continue your work on the prairies?

RW: Yes. And to a great extent, by that time I was looking at cores from the wells around Lloydminster. After I'd done some work around ??? I went up to Lloydminster and I studied a lot of the cores there and logged them and various things.

AK: Was this tied in with George a little bit?

RW: Oh, a little bit.

AK: Yes, because he'd come up you know, when I was in Vermillion you see, in 1942, George visited.

RW: Yes, of course, that was before the big digging up of Lloydminster. I approached Lloydminster mostly from the Saskatchewan side.

AK: Oh, you came in the other way.

RW: Because I was sort of cooperating with the Saskatchewan department. I used to log their samples from the Saskatchewan wells there. I can't remember the name of the man who was in charge of all that part of the Saskatchewan government.

AK: Yes, I know who you mean. We've got it on tape with somebody else. He was a professor at the university.

RW: Of course, you're thinking of Edmunds.

AK: Oh Edmunds, yes. You're thinking of somebody else?

RW: I was thinking of the man who was in Regina. Edmunds was a professor.

AK: Yes, but he had quite a bit to do with that.

RW: Oh yes.

AK: You were thinking of somebody stationed in Regina?

RW: Yes, sort of assistant deputy minister or something like that, I've forgotten his name now.

AK: Were you logging the oil stained sands and the tarry sands as well?

RW: Oh yes, anything that came up in the samples. Of course, when I was at Lloydminster I

was looking over the cores because they didn't ship the cores around to Ottawa or anything. I sampled those cores and those samples I think, are still in the depository at the institute in Calgary.

AK: Right. So then from '44 on did you continue this work, '45, '46?

RW: Yes, '44, I've forgotten the name of my assistant and then '45 I continued that work. Yes, and then I did that in '46 too. I went on with that logging those cores. Of course, in '46 we began to get the men who'd returned from overseas. Yes, and I think it was '46 when I had one chap, Walter Keith, he was my assistant that year. He's a consultant now in Calgary. And Macleod the next year was my assistant and Macdonald.

#137 AK: Bill Macdonald?

RW: No, his first name slips me. I think he's in New York now. He's up into New York headquarters for one of the oil companies or something. Travelled around, we usually get a Christmas card from him. As a matter of fact, Walter Keith was my assistant that year when I went out to look over the prospects for a dam at the head of Kootenay Lake. They've put a dam in there now at, Duncan I think they call the place. I looked over the whole general region, ??? and I suggested some possible sites. I don't know if they paid any attention to it when it came to putting up the dam or what. They did something different. But it was quite an interesting thing. Of course, in bedrock geology I didn't know anything about it for the moment.

AK: Well, we learn fast. So moving on then, all this time you headquartered in Ottawa, still working out of the Victoria Museum. With the war over and as you say, the people coming back, then you would have a pretty good selection of assistants. Was the Survey able to expand some then or did it. . .?

RW: Yes. Well, we had started to expand even a bit after 1935 you see. There were more of the men coming back and a number of them possible join the Survey. Although I think most of the chaps from Canadian universities went with industry after that. They might be with us for a couple of summers as assistants then they got in with industry.

AK: Yes, we were mentioning Oscar Erdman. Was he one of those?

RW: Yes, he was around there at that time, I've forgotten just what he did?

#174 AK: Then there was John Onefour???, does that name. . .?

RW: John Onefour was with me one of those years in examining cores up at Lloydminster.

AK: I believe John Onefour transferred to Japan or someplace in the far east. But I've lost touch with him. Then there were some names that started to emerge as these people started to emigrate from the U.K. Now there were 2 or 3 people that came over, notably Peter Harker and Digby McLaren. Did they come direct to Calgary or did they work in Ottawa for awhile?

RW: They worked in Ottawa. As a matter of fact, they were both veterans of the British Army and they went on and took their doctorates after they joined. They got leave, I think, to go on with their studies and took their doctorates at Michigan. They weren't in the field, I'm not sure they may have gone with McLaren or some of those people but they didn't work with me at all. They were in the foothills and the mountains.

AK: Right. And Bob Douglas?

RW: Yes, well he worked with McLaren. I think he worked around 1940 or '39 first, with McLaren, down in Anticosti. Then he went in the forces and didn't see him until after the war. I believe he may have worked with McLaren again after the war.

AK: So when did the Geological Survey start to feel that oil and gas was something a little more than the tar sands and Lloydminster? Did they catch on after Leduc struck, was there any realization that hey, something's happening out there?

RW: To some extent. I think the greatest influence for that was Hume. You see Hume was director, I don't know, they change the names around and departments and things, he became Director General of Scientific Services. At that time, in Ottawa, of course, we'd been collecting samples, stowing them away and so on for years and years. In fact, we had samples from back in the late 1800's that ??? and people like that had managed to save. The geologists from the oil companies began coming around to study these. We had them in trays and all that stuff that were available for study. They began to show quite an interest in the material we had down there because a lot of that could be restudied with a much better understanding of what it meant and the importance of the well samples became more evident. I think George Hume realized this to quite an extent. The business of setting up the Calgary office, the influence came mostly from Hume and the deputy minister. I found myself in a rather uncomfortable position because the director and chief geologist weren't for this business of setting up satellite offices at all. And yet Hume was pushing it and since I'd been working on that sort of thing in the west I was sent out to Calgary.

#241 AK: Who was the director at that time, was it Young?

RW: I think Young had quit by then, I think it was George Hanson and then Walter Bell.

AK: You see, both of those fellows were hard rock?

RW: No, they weren't hard rock, well, Hanson was hard rock and mostly in B.C. Walter Bell of course, was a palaeontologist, palaeobotanist. He'd done a lot of work in the west and so on but I don't think they appreciated the importance of the subsurface work and the oil and gas development that were going on out here. With the fact that so many of the oil companies had sent geologists to Ottawa to look over our material and so on, felt that they'd better get that material up to Calgary. So we finally started a Calgary office in 1950.

AK: And Jack Haley, was he more responsible for eastern Canada oil and gas?

RW: Yes.

AK: Yes, because he used to do Ontario.

RW: Yes, Ontario was his field.

AK: Yes. But it seemed to me that he was sort of an anchor man in Ottawa as well, for western Canada to some extent. But Jack was a very fine person but he couldn't seem to, in my dealings with him I couldn't seem to get him to make his mind up.

RW: Probably ??? enough to. . .

AK: That's true. And you know, with all of that. So when you got the word to move to Calgary, then did you move directly into the old Customs building?

RW: Yes, pretty nearly. We had temporary offices over the post office for awhile, then we moved all our material, when we brought out the samples and all that material we went into the 4<sup>th</sup> floor of the Customs building. I've forgotten how many tons of material were brought out. But Leon Price, who's up there now, you probably know him, he looked after the shipping of this material from Ottawa and then he came out too.

#286 AK: Who else did you have on your staff?

RW: ??? Belia??? came out at the same time as I did, in September.

AK: I believe she's served in the Navy hadn't she, during the war?

RW: Yes, she'd served as an officer in the Navy.

AK: Then had she gotten her doctor's degree then?

RW: Oh yes, she had it, I think she had her doctor's degree about 1939 or something like that.

AK: I see. Then she transferred out to be in your office?

RW: Yes. She started doing some of the work, well, she'd worked on some of the well samples from Quebec on the Ordovician, I think she published something on that first. Then she started working on some of the Devonian material from western Canada. Surface and subsurface. She didn't actually map any areas but she was studying the stratigraphy, from that angle.

AK: So when you got organized, then you would get cuts of samples from the Conservation Board. . . ?

RW: The Conservation Board and from the Saskatchewan government and the Manitoba government and the B.C. government. We had cuts from all these places and we were able to have them there all in Calgary where they could be studied by the people who were trying to do their drilling and exploration. Our samples didn't stop at any provincial boundary. If a man wanted to see what was on the other side we probably had the sample there too. Mind you we had to try to keep them, if they were still confidential we kept them confidential and we had to have a written order from a company that so and so could look at the samples and things like that.

#322 AK: And did you liaise fairly closely with the Conservation Board then, because they were the bulk of the samples. I mean, most of the samples came from . . . Who did you work with mostly over there, Bob Pow or. . . ?

RW: Well, Red Goodall, Bob Pow, and it seems to me there was somebody else. I don't recall. Oh yes, Mickey Crawford.

AK: Oh yes, Mickey. Then you became acquainted with the oil and gas community through visits made by different people. One of the things I'd like to get from you Bob, is any particularly interesting anecdotes, humorous or otherwise, that occurred during those early days because it was such a scramble.

RW: I don't recall anything right off the bat. There may have been to some extent. We were mostly trying to get organized at first and get things started. As I mentioned before, we'd had to do what we could to supply the industry information and opportunity for the information. We managed to finally arrange to get books out, to be able to order books through for other companies, publications of the Survey and also establish a library at

Calgary. Things like that.

End of tape.

Tape 3 Side 1

AK: Dr. Wickenden, May 20<sup>th</sup>. We were just talking about the early activities of the Calgary office but I jumped ahead a little too fast Bob. You were going to tell me a little bit about your '48, '49 field seasons, going down the Athabasca River.

RW: Well, in '48 I went down the Athabasca. I only took about a month. Of course, then McLearn had published some things on that about 1916 but I could approach the study with a knowledge of the subsurface cretaceous and also I was collecting material systematically as sections as I went down. We were able to establish some of the surface stratigraphy there pretty well and also relate it to the subsurface. For example, the Vulcan??? sand was the same as the Viking. When I published that later on I think I mentioned that. We had, I felt it was quite a successful trip because I was able to actually see the outcrops of some of the formations that go under the prairies and were related to that and also able to relate them through the Foraminiferal sequence. But that was in '48. In fact, we did give some new names to some of the formations, such a formation as ???, which I always got a kick out of because of the French meaning, the flying fool. But it was the name of a rapid there and the formation was exposed there and that sounded like a name that wouldn't be duplicated. Then in '49 I had the opportunity to go down and examine some of the Peace River section, starting at Peace River town and going down. We didn't go down as far as Fort Vermillion, I've forgotten the name of the place where we stopped, we had pretty well had the section. We were able to get that straightened out. That of course, was a totally new section to me because it was all lower Cretaceous and we didn't have anything quite that in the ???, at least, that direct relationship. We possibly had beds that were the same age but we didn't have the exact sequence or even the ??? we didn't have up on the Peace River.

#036 AK: That's very interesting. Can we go back to Calgary again now, and as the years went by, your office expanded to some extent. Did the Survey in Ottawa start to realize that they had better pay more attention to. . . ?

RW: Well, yes. It happened that the chief geologist came out to see me, Cliff Lord. He was quite interested in what was going on there and I saw that he met some of the people connected with the geology. . . the geologists of the oil companies. Then I think the next year Jim Harrison came out. He really began to see that there was a great deal of geology being used and done out there in Calgary and he really became somewhat enthusiastic about establishing a bigger office out there. Of course, that was getting into, I had been out there almost 10 years. As a matter of fact, I was out in Calgary for 3 years before I even went back to Ottawa. It was funny, until Cliff Lord came out, the chief geologist and the director hadn't paid any attention to the office. I was having quite a time trying to get some of these things put in, like publications, being able to sell publications and all that stuff. I'd been able to get more or less, the building that I wanted, offices. And also

establish a system of places for people to come to study, to be able to have their samples in trays and each individual having his own cubby hole sort of thing. I hadn't had any difficulty with that but to make them realize that there was a need out there was a little different.

AK: Would you say that Jim Harrison might have been the real driving force behind the eventual construction of the institute?

RW: I think he was to quite an extent.

AK: You see, he was director up till about '64 or '65 and then Yves Fortier took over from him and Jim went up and became assistant deputy minister. So all this time then, that this gradual increase in personnel, like you had Dick Proctor and you had other people in there, the year 1967 marked the official opening of the institute.

RW: Yes, and by that time I'd retired.

#073 AK: You'd already retired. Would there be anybody else, besides Jim, that was kind of a decision maker on this, besides yourself?

RW: I don't know exactly. I suppose a number of us were, after all, Jack Haley and then they appointed Bernard ??? to look after the building, the planning and the building and things like that. Those things were being worked out by different sources in Ottawa and in Calgary. We had quite a time choosing the site because there were some people who wanted to put it down in the southeast and so on. We felt that if we could get near the university, there was a better chance for cooperation there with the staff at the university and working out the geology. Because after all, our job was to work out the basic geology, let the oil companies work out the details of exploration and all that stuff. And to supply the information that we could to the geologists of the companies. I always felt that our job there was to serve the geologists for the companies. Although I admit I always used to have to be a little careful not to break any confidence. Sometimes you speak to a man in the morning from one company and his rival might be in in the afternoon. I had to watch what I was saying. Incidentally, in connection with the development, a French company came over, French Oil Company I think it was called then.

AK: It became Total.

RW: Total, yes. It was when they first came in, I had the opportunity to use my knowledge of French in talking with them, more than I'd had all the time I was in Ottawa. Some of that planning of course, was done in 1960 when I was in India.

AK: Yes, we must talk about that. I don't want to get you too tired. Just to get that in perspective, I suppose we could talk about that now. What year was it you went to India?

RW: Well, I went over the whole of 1960 really. I went over in December '59 and came back the beginning of January 1961. I spent a year. That was the contract. It was the Oil and Gas Commission of India wanted somebody who had worked on the smaller Foraminifera and understood the laboratory and the organization of doing that sort of thing, preparing material and studying it. They applied for it through the Columbo plan, I don't know if you remember the Columbo plan, where southeast Asia and the Commonwealth countries were cooperating, helping each other out in technical matters. I heard about this and I

applied for it, after I'd checked with Ottawa to see if it would be all right and went over there and worked with the people in the laboratory, trying to bring a certain amount of organization of the laboratory methods they were using for training the study of Foraminifera. I organized a course on Foraminifera for people there, although a lot of them had had considerable study outside of India. It was a very interesting year.

#131 AK: What city did you work out of?

RW: I worked out a place called Beragoon??? about 150 miles north of New Delhi. It's the headquarters of the Oil and Gas Commission. I was working with a man named Sastri, who was a very good head. In fact I still correspond with him, we still keep up.

AK: So your training at Harvard stood you in good stead for this assignment?

RW: Oh yes, and my experience with preparing samples and material in Ottawa also stood me in good stead. And the collecting of material and all that sort of thing, it all was background that was useful.

AK: Now looking around your apartment here Bob, I can see many lovely mementos. The elephant god up there. . .

RW: That actually was given to us by somebody here in town.

AK: Is that right?

RW: Yes. We have other ones but that one is a particularly interesting one, that's Ganesh, the elephant headed god. He's quite a ??? sort of a fellow. Some of these things up in the top of that thing are from India.

AK: Those vases, those mauve vases.

RW: Those are Chinese, the papier mache in the very top road are things I picked up in India.

AK: The rug?

RW: No, the rug actually belongs to my son. It's an unusual sort of a rug. He collects these sort of things so we bought that. The only rug is the one in the hall that I picked up in Kashmir. I managed to get off a couple of weeks holiday in Kashmir during the hottest weather.

AK: Yes, get up to a hill station eh?

RW: Yes, well, Beragoon was known as a hill station, was very near a hill station. Was just in front of the mountains, although it was only about 2,000' elevation but just a few miles and you were up 7 or 8 thousand feet. So there was a not too bad a station, although it went up to about 110-120 Fahrenheit.

AK: It sure would be hot and sticky in the monsoon and that sort of thing.

RW: Well, the monsoon you see, we considered that getting cool. It got down to 90 then.

AK: And this Foraminifera work, was any of that offshore or was this all onshore geology?

RW: At that time it was all onshore.

AK: You're aware of course, that they've done great things offshore there?

RW: Yes, they've been working on things like that.

#172 AK: They've made some big discoveries offshore.

RW: But they were working around, they made some discoveries around a place called Cambay. Then there were some other places that they were drilling, down in that general

region. I didn't get up to the Assam area although I did see some of the material from there and we were studying it to some extent. But at that time I had to organize a sort of course for Foraminifera and I didn't want to drop it because I knew I was coming home at the end of the year.

AK: And you took Mrs. Wickenden with you of course?

RW: Oh yes.

AK: And was your son. . .?

RW: He was at Cambridge at that time. We managed to come back that way and visit him in Cambridge on the way home.

AK: That was around 1960 when there certainly was travel by air but travel by air was not only noisy and arduous but there were an awful lot of stopovers and changes. Did you travel by air to India or do you recall that?

RW: Yes. We flew to Tokyo and then to Hong Kong and then from Hong Kong we flew directly to, well, with a stopover for a few hours at Bangkok we went directly to New Delhi. We had a bit of fun of course, with some of the red tape and things of this sort but on the whole we got along all right. We found the people very cooperative, certainly the scientific. . .

AK: Well, that's true. I think when you get in with scientific colleagues you find that the nationality boundaries disappear. Now you mentioned our mutual friend Chakravorty. Did you know him prior to your trip to. . .?

RW: Yes, I'd met him when he was working in Regina.

AK: With the Saskatchewan government?

RW: Yes.

AK: That's right, he was with them.

RW: Yes, and somehow or other I kept up with him.

AK: Did he help you on your trip to. . .?

RW: He was helpful in advising what to do and what to expect. That was an important thing was what to expect. It was a little bit difficult to really get reliable information. I know that we found some of the information given to us by the departments in Ottawa was not really useful for the sort of work we were doing. We took all the things that we didn't need and we didn't take some of the things that we'd like to have had.

#219 AK: Yes. So who was minding the store while you were gone, who ran. . .?

RW: Helen Bellier was in charge.

AK: Right. And then you returned, then there was a continuing expansion of the staff?

RW: Yes, the staff began to expand more. Some of the work wasn't directly connected with the well drilling and sample work but also, some of the work was by men who were in the west, doing field work in the west. They started to put some of those people out here and we expanded down to, what was that, 10<sup>th</sup> Ave. or something. We had a satellite office there and a little later Potter Chanley??? came in. They decided to appoint somebody to do Foraminifera and Potter Chanley got the job. The did a competitive. . .well, civil service competition, that sort of thing.

AK: He'd been with Shell hadn't he?

- RW: Yes, he'd been with Shell. He'd had quite a little experience with Shell and had studied Foraminifera and laboratory methods, things like that. So we established this place for him to work and he took over looking after the Foraminifera.
- AK: Did you have anything to do with John Wall, he used to be with Imperial and then he was with the Research Council?
- RW: Well, I . . .
- AK: You probably knew him, yes.
- RW: I knew him ??? with the Research Council, I knew him there too.
- AK: He did quite a bit of work on forams.
- RW: Yes. He studied in the east somewhere I think, to start with.
- AK: Are you aware that he's with the Geological Survey?
- RW: Oh yes.
- AK: Yes, he's gone to work with them.
- RW: Yes, he's been working there for a couple of years now, 2 or 3 years.
- AK: What about Diane Loring, did you have much to do with Diane?
- RW: Well, I knew her and I used to see her and discuss things with her and all that stuff. Of course, she started working when Imperial Oil was working with Cam Sproule in Moose Jaw. I think I met her there as a matter of fact.
- #260 AK: Okay, so we're getting gradually to your retirement. These people that were still stationed in Ottawa would still be coming out and doing field work but they would be kind of separate from your office.
- RW: Yes. They used to use our office mailing point and things like that, we made good use of that. Post office and shipping material that they wanted to pick up or express and freight, it would all be sent through the office in Calgary there.
- AK: So I suppose the final decision to site the new building out there in northwest Calgary would have had to have been made in the early 60's then?
- RW: Oh yes.
- AK: Do you recall just when the final decision was made?
- RW: No, I don't recall. I know that we had some arguments about that but you see, ??? is also quite interested in that. So we sometimes had a few differences of opinion once awhile. I think their men wanted to locate it, to see some other building in the southern part to town but we finally managed to. . .
- AK: Was that Bernard Thoms?
- RW: Yes. He was a petroleum engineer who'd had quite a bit of experience I think, in the far east. Unfortunately he got cancer after a couple of years and died here.
- AK: Yes, his widow, Cynthia, I think she still lives here.
- RW: I think that might be.
- AK: Yes, she's from New Zealand.
- RW: Yes.
- AK: Bernard was, you might call it, the typical public servant. He would secret himself in that office in the institute there with the lights off and with dark glasses. He kind of kept to himself. It's a pity that there wasn't more liaison between the different departments. At

the risk of putting a little of myself in here Bob, I'd like you to comment on this. One of the things I tried to do when I was at the National Energy Board was to try to centralize the well log and well record process, whereby maybe one or two very top people would be working for the National Energy Board but more in the sense of developing reserves. Prior to your retirement did you ever see the attempts by the Survey to develop reserve determinations?

RW: Not really.

#323 AK: You may recall that back in '46 or '47, that Hume and Ignatia??? gave a paper on up on the Peace River of British Columbia but I just wondered, apart from that, do you recall any attempts to organize reserves determinations?

RW: No, we stuck pretty well to the straight geology from that office. We felt that was our field and that's where we should work, was the stratigraphy. We might help supply information if we had any but that work was strictly Hume and Ignatia and we didn't attempt to . . .

AK: I think that was the first and the last wasn't it?

RW: Yes it was. They were quite good at ferreting out information. Ignatia was good at mathematics.

AK: Oh yes.

RW: That was before the days of computers and he didn't need it.

AK: No, he was a walking computer.

RW: Yes.

AK: Well, the evolution there then, was continuing to be in that direction, although you see, by the late 60's the National Energy Board had not taken my recommendations into account and had set up a department of their own out there in the new office you see. There was some rivalry there about that.

RW: I imagine.

AK: Getting back to the institute itself, or the operation, when was the decision made to give Digby the nod on this, Digby McLaren. Was there sort of a kind of competition or do you recall?

RW: I don't recall any particular competition at that time. You must remember, I really retired before it was, I retired in '66.

AK: I know.

RW: Before things really, in the final stages. I'm not sure just how that was finally determined. I don't think for example. . .

End of tape.

### Tape 3 Side 2

RW: [in mid sentence]. . . and Wynn Irish.

AK: Oh yes, Wynn's retired now as you know.

RW: I remember those men, they all had an office in connection with our office. But they came under, they weren't working directly under me or any way like that. I didn't have anything

to say about their field work. But I had to be responsible for supplying them with things for use in field work and so on and all the red tape that goes with being in a government office.

- AK: Wynn Irish, to my recollection, did a great deal of work in the foothills, up in the northwest part of Alberta as it crosses over into British Columbia. I don't relate him to the Arctic too much.
- RW: No, he had nothing to do with the Arctic. He was brought out, I've forgotten just why but they saw that he was going to be out here. I don't know if it was a good opportunity for him to move or something, from Ottawa but they put him out here where he could settle in before the new institute was put in. Then he did the work around, I guess it's pretty well north of Medicine Hat and in that region, he did a couple of maps in there.
- AK: Yes. It's interesting that for the ones who moved out there were also others who had their heels dug in pretty good. Like Gilletski and Christy, although Bob has moved out recently, reluctantly. There was another chap that just flat didn't want to move out.
- RW: Yes, there was a chap doing surface geology.
- AK: Well, Tom Bolton, but he was doing the east.
- RW: He was working the east.
- AK: Yes, he was eastern palaeontology and Gilletski was west. He was quite a Jurassic expert.
- RW: Yes, there were a number that didn't want to move out. Well, possibly they didn't have the library resources out here and things like that. And collections of course, I suppose they've got quite a few of the palaeontological collections. But the main collections were in Ottawa, all of McLearn's material and so on.
- AK: Incidentally, if I could just interrupt you, McLearn is spelt M-C-L-E-A-R-N, not McLaren, as Digby.
- RW: Well, you know what he used to say, he came from down east somewhere and he used to say that what had happened was that one of his ancestors had misspelled McLaren, E-A-R-N, instead of A-R-E-N.
- AK: So we have the movement, the physical movement of the material out of the old customs building at the corner of 11<sup>th</sup> Ave. and 1<sup>st</sup> St. S.E. to the new building. Was any of that material moved prior to your retirement?
- RW: No, the building wasn't ready yet. As I say, I left in the mid summer of '66.
- #040 AK: Did you stay on in Calgary or did you come out here?
- RW: I stayed on for a little while but you see, in '65 I had a little bit of health trouble and the cardiologist wanted me to possibly retire a year ahead but I managed to stick it out. By the time I retired I thought I'd better leave things alone. I was getting on all right.
- AK: But everything was on track and everything was moving towards that goal. When was Digby given the nod, was that before the actual opening of the building, I guess it must have been.
- RW: I'm not quite sure.
- AK: No. And Yves Fortier of course, was the director at that time.
- RW: Yes. Cliff Lord was chief geologist.
- AK: Yes. I guess you're aware that Cliff died . . .

RW: Yes, I heard that, I was quite shocked to hear that.

AK: Cliff was kind of a different sort of a person.

RW: Oh yes.

AK: Yes, he was Cliff Lord.

RW: He was a good friend, I knew him pretty well.

AK: Would you care to make any comments about some of the other people that you worked with that went on to other things or did you have any anecdotes on other people?

RW: I don't know of any particular anecdotes. Of course, I did feel that one of the men that did a great deal of work in a very honest way about it was Frank McLearn, which we just mentioned a few minutes ago. Frank was a man who worked regardless of what the reward would be. As a matter of fact, he published some things paying for his own publication when the Survey wouldn't do it. You must remember that during the 30's gold was the thing that everybody was after and such things as fossils, studying of fossils was most impractical. Of course, when the oil companies started out with, what did they want, they wanted Frank McLearn's work which was purely fossil work that gave them correlations and understanding of the material and the environment and everything else.

AK: The unsung hero.

RW: Yes. Of course, I think they did recognize his work later on. And he was able to go ahead and do things that he hadn't been but in the 30's to the director and chief geologist and so on, anything to do with fossils was just, oh well, these fellows are losing themselves. That's probably why I was diverted to surface geology and things of that sort instead of being allowed to go on with Foraminifera. Any Foraminifera work I did was, to a certain extent, on my own time and coming back at night and doing things like that.

#080 AK: Okay, the learned societies of which you were a member, you mentioned that you were elected to the Royal Society back in 1939, which was a great honour. What other societies were you active in?

RW: I was made a fellow of the Geological Society of America in 1941 I think it was. Then later on, after Dr. Cushman died, I was a fellow of the Cushman Foundation of Foraminiferal Research. I was among the directors on that for a few years.

AK: Did that entail your going back down to the . . . ?

RW: No, I attended some of the meetings. You see, it's an organization for publication and research on Foraminifera. I attended some of the meetings for directors and things like that at the Geological Society of America meetings. They used to get together at that time. But I couldn't always get to the GSA meetings, I didn't attend as much as I would like to have done. But it was an interesting connection. It kept me in touch with some interesting people who were studying Foraminifera and things like that. I don't recall anything else in particular.

AK: You were a member of . . . did you become a member of the Geological Association of Canada?

RW: No, I didn't because they were mostly hard rock men when they were formed.

AK: That's the same reason that I didn't join. But of course, obviously you were a member of the ASPG.

RW: Yes. As soon as I came out to Calgary I had a closer connection. I hadn't been, I don't know why we didn't have a closer connection with the ASPG when they were first organized, what was it, in '32 or something like that?

AK: Well, the first meeting was in '28, Stan Slipper and Ted Link, they were organized. I just finished a little history of that. But naturally as soon as you hit Calgary you were. . .

RW: Well, certainly. But on the other hand, I avoided being too closely connected with the ASPG because if I suggested anything to Ottawa I didn't want them to feel that I was pushing my own organization. So I could speak for them or persuade them to suggest things to Ottawa without having it said that it was my particular benefit you might say. I wasn't trying to push myself forward on that.

AK: Did you become a member of the American Association of Petroleum Geologists?

RW: No. I was a member of the SCPM??? from way back. That's how I happened to have the set of books and the palaeontological journal of palaeontology, which was a publication of SCPM. I've been a member of that from way back.

#125 AK: Did you think it necessary to become a member of the professional engineers of Alberta, did you ever look at that at all?

RW: I didn't because I was employed by the government and there was no particular need for it. I suppose if I'd gone into something like consulting on retirement, which I had thought of doing at one time but I changed my mind, I would have. But I didn't think there was any necessity for it ???.

AK: I don't know whether you're aware, this is just another aside, but there is quite a bit of discussion between the geologists and the association about the desirability or otherwise of joining. Any other societies that you became affiliated with?

RW: I don't remember any particular, no, I don't think so. Well, after I'd finished my doctorate and so on, they finally organized a chapter of Sigma Phi at Harvard and somebody suggested I join that so I become a member of Sigma Phi, which is an honorary scientific society in the States. But I didn't get it as an undergraduate, which would have been the real way to get it.

AK: Now you certainly published quite a few things through the Survey, and also some of them appeared in print in other journals.

RW: Yes, well, the Royal Society used to be the main place to publish scientific results that weren't necessarily connected with gold or anything particularly commercial. And I did publish a few things, I've forgotten what they were, with the Royal Society on different subjects, surface deposits and Foraminifera and stratigraphy and things like that. That was way back when. And also, I think I did publish, I had done some work before I came with Cushman on a paper on ??? Foraminifera and it was published by the Smithsonian I think. I've sort of forgotten what I did. I did put out some things. Some of the things that were probably the most significant were published as preliminary reports by the Survey and were never put out as a final report.

AK: Those were those little annual report things weren't they?

RW: Well, of course, they used to have the annual report. . .

#166 AK: There were papers in the annual reports.

RW: But they used to have this mimeographed type of report, a preliminary report. For example, one that I did up on the Pine River in B.C. where I did get some of the stratigraphy pretty well straightened out and I think they're still using, to some extent, the things that I had started, were never published as a final properly printed report. I was often disappointed by things like that. It was get them out and all that stuff and then we weren't given a chance to revise it a bit and put it out in proper printed form. I think that was a misfortune because as I say, that Pine River study was used and staff continued using many of the things that started there. Also the work along the Peace River wasn't put out as a proper final report, and the Athabasca stratigraphy was never put out. Although I did manage to, I think, get those things more or less straightened out. I was able to see some things that previous ??? hadn't seen. And of course, I had the advantage of the experience of a number of men who'd been around since then, like McLearn for example. McLearn was very methodical to his approach to the study of sections and all that sort of thing. It was interesting to see how he worked it out. I think I took advantage of some of the things I learned from him.

AK: So some of your material did appear in proper published form?

RW: Oh yes. I think the main one that's been used is the one on the Manitoba escarpment. There's a study of the stratigraphy of that general region. Because I did use the wells there to some extent and I connected the Cretaceous, Paleozoic and Mesozoic formations there to some extent and noted things that had been observed in wells, right down to the bottom. ???

#206 AK: But as an aside, did you in your work in the Manitoba escarpment and up into the hills there, did you ever run across those bituminous shales?

RW: I'm not sure. You may be referring to what we call the ??? I suppose. You mean the shales ???

AK: Yes.

RW: Oh yes.

AK: Did you feel that they might have any potential economic. . . ?

RW: No, not at that time anyway. I think they had been studied to some extent by the mines branch for oil as a potential oil shales. But I don't think the quantity of oil was great enough to make it worthwhile commercially.

AK: No. More of a curiosity than anything. Although you may be interested to know that Sun Oil at one time, back in the 60's was quite interested in it and they did some work on it. So wrapping all this up Bob, since your retirement in '66 you have not done any consulting, you've been in a retired. . . ?

RW: Yes.

AK: And when did you move to Victoria?

RW: April '67.

AK: Did you have any particular reason why you and your wife chose Victoria?

RW: Well of course, it's a milder climate and lower elevation.

AK: A little easier on the ticker eh.

RW: Yes. I'd been advised not to stay around places higher than Banff too much and of course, the warmer climate makes a difference too.

AK: Yes, not that much snow to shovel.

RW: No, that's it.

AK: And you were saying that you lived in a house over on Dunleavy?

RW: Yes.

AK: And then when you found that the yard work was a little too much. . .

RW: Yes, I was getting a little bit stiff, I was having . . .

AK: You moved to this very comfortable apartment.

RW: Although it was a most interesting place to have, I enjoyed it.

#239 AK: Yes, well, just to wrap up finally, would you care to make any comments about the philosophy of your experience as it relates to oil and gas or just as it relates to the scientific community?

RW: Well, I don't know. I know one thing I tried to keep in mind with my staff in Calgary was that they were there to serve the public. The public wasn't there to serve them, they were there to serve the public and I think to a great extent they kept that attitude and I was always happy I was able to bring that out. The civil service was to serve the public, to help out the public. And at the same time let the commercial people develop as they can, if I could help them with a problem I was glad to do it. But I wasn't going to butt in on giving commercial advice, one outfit against the other. I think some people had done that and there had been a little bit of friction there but I think I avoided that on the whole.

AK: Yes, well, that's not an easy task. Because you do run into people that are kind of fly by nights and big talkers.

RW: Oh absolutely.

AK: And you do have the thoughtful ones that are coming in and trying to improve the science. People like Andy Baillie and Oscar Erdman and those kind of people that did nothing but help.

RW: And I think I made good use of arrangements there in Calgary. I know Andy Baillie and John Anderchuk did a lot of work over there, not Andy Baillie, Anderchuk and who. . .?

AK: Ralph Edy?

RW: Ralph Edy.

AK: Yes. Well, John Anderchuk and I are very good friends. So Anderchuk is I would think, one of the real top geologists. I mean, geologists as geologists. And yet, he's done very well for himself as a consultant. Very well. I mean, they worked out the geology of southeast Saskatchewan you know, where they worked those sub-crops out and it stood them in good stead financially.

RW: Yes, but they were working on the scientific work first.

AK: Oh yes, there was a solid scientific background to their work, they weren't just promoting. No, they were working from a solid base of knowledge, which is I think, something that a lot of our younger people should be thinking of. I know Andy Baillie has stressed this, trying to get the geologists not to be mechanics but to be thinkers and to be questioning. Well, I think this concludes our interview and it's now just about 4:30 and

you've been very patient and very helpful and I think the material that's on this tape will be of great use to other people in the future. So once again, thank you very much Bob and this is the end of this interview with Dr. Wickenden in Victoria on May 20<sup>th</sup>. Thank you, over and out.