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Company Affiliations: Canadian Grain Commission (CGC)—Entomology Lab, Protein Lab

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Summary: Former Canadian Grain Commission grain sanitation officer Patricia Roy describes the operations in both the Commission’s protein lab and entomology lab, which tested grain samples from all Thunder Bay grain elevators. She details innovations in protein testing technology, weekly grain elevator inspections, processes for sampling and testing grain for insect infestations, and methods for dealing with infestations in elevators and on ships. Other topics discussed include the unique features of Thunder Bay grain elevators, health and safety developments, the occasionally dangerous and physical aspects of the job, work as a woman in a male-dominated industry, connections to other areas of the grain industry (railways, Canadian Wheat Board, researchers), and the implementation of training programs locally and in Churchill, Manitoba.

Keywords: Canadian Grain Commission; Entomology; Entomology lab; Protein lab; Grain protein testing; Grain science; Grain inspection; Grain sampling; Grain technology and innovation; Grain research; Thunder Bay grain elevators; Canadian Food Inspection Agency (CFIA); Grain elevator sanitation inspection; Pool 6; Pool 1 (Davidson & Smith, Agricore S); Richardson Main Terminal (Eastern); Fort William Elevator E (Western Grain By-Products, Pool 10); Richardson Current River (United Grain Growers, Viterra C); Workplace health and safety; Workplace injuries; Churchill grain elevators; Women in the workplace; Insect fumigation; Kjeldahl method; Berlese funnels; Phosphene gas fumigation; Rusty grain beetle; Country elevators

Time, Speaker, Narrative
NP: This interview is taking place on January 15, 2015. I’m at Bayview Towers in Thunder Bay, and I’m going to ask our interviewee of today to introduce herself and her connection to the grain trade.
PR: Hi, I’m Patty Roy. I was formerly the grain sanitation officer with the Canadian Grain Commission [CGC] here in Thunder Bay, in charge of the central region. I should clarify that. I wasn’t in charge of the central region, but the entomology lab in the central region.

NP: And grain sanitation--?

PR: Officer.

NP: Officer. Tell us what a grain sanitation officer is.

PR: I oversaw the running of the entomology lab in the Grain Commission.

NP: Now there will be people listening to this who have no idea what an entomology lab is.

PR: Entomology is the study of insects. So we were looking for insects in the grain and in the grain elevators. And then we would recommend treatment if we found the insects in the grain.

NP: We're hoping that 100 years from now somebody will be listening to this tape, so pretend that you're walking into the lab and tell us what a person would see walking into that lab? Where was it, first of all? And--.

PR: The lab was at 221 North Archibald Street in the top of the old Post Office building where the Grain Commission offices were in Thunder Bay for my entire time that I worked with the Grain Commission. The entomology lab is set up to detect insects in the grain. So when you first come in, you see rows and rows of metal reflectors because that's what we would use to concentrate heat on a grain sample into a funnel, a Berlese funnel, and would force the insects out of the grain because they would run away from the heat and light. So that's our detection method. I think we had 160 lamps there. So we could do 160 samples at a time, twice a day. It gave us pretty good production. And at one time, it was the largest number of lamps in any lab in Canada. And then, of course, we had offices off of that and the microscope room where we would identify the insects.

NP: When did you start?

PR: I started with the Grain Commission in 1972. I was in the protein lab. And then I went off to raise my children. I left in 1978. I came back in 1988 briefly as a casual in the protein lab, and then I got hired as a full-time position in the entomology lab in 1988.

NP: And you retired just recently?

PR: I retired in 2013. Yeah. Twenty-five years.

NP: Now, let's go back right to the beginning of your career. How did you first get involved in, it would've been the protein lab initially?

PR: Oh, I was just so lucky! At that time, you almost had to know somebody to work in the grain industry. However, I didn't know anyone. I answered an ad in the *Chronicle Journal*, and they were looking for assistant grain inspectors. And I had been raised on a farm. I was still living in the country at that time. I was quite young, 19 years old. So I answered this ad thinking, "Oh, this sounds like something I could do. I know grain and I know farming and agriculture." And I got an interview, but because I was a woman, they didn't want me as a grain assistant, a grain inspection assistant. They only had men at that time. So they just shuttled my application to the protein lab where they had a mix of men and women, and I got hired as a casual there. And I worked for a couple of summers there but was laid off during the winter.

NP: You grew up on a farm?

PR: Yeah, a beef farm. My dad had a beef farm in O'Connor.

NP: Oh, ok. O'Connor township?

PR: Yep. Yeah, he had a cow-calf operation for many years.

NP: And did he grow his own feed?

PR: Yes, he grew the hay, of course, and he grew barley mixed with oats. And he would chop that up in a big noisy machine that we called Chop that he was making, so he ground it up for the animals.

NP: So you knew, as you said, you knew what grain was.

PR: I'd never seen wheat.

NP: Oh, really?

PR: Yeah. But I knew barley and oats, yeah.

NP: Ok. In the protein lab, what grains were they working with?

PR: We were just working with Red Spring wheat at that time. They were trying to assign a protein level to the Red Spring wheat, just the 1 and 2 grades of it, so that the farmers could be paid for the protein level they were growing. Because protein is so important in the baking of bread. Farmers at one time were just getting paid for, like, 1 Red Spring wheat or 2 Red Spring. But it takes more, I guess, better weather and better inputs in the crop to get the high protein levels, and so the government felt they should be paid for those levels. So we were trying to test the levels of the protein so the farmers could be paid accordingly.

[0:05:08]

NP: What did you like about that job and what were the downsides, as far as you saw?

PR: Oh, I loved that job! I had worked, before that, six days a week at a gas station pumping gas. And I went into this job the week before Thanksgiving, and I worked five days with all these interesting people learning new stuff, scientific things. It was a Kjeldahl lab at the time, so it was a chemical process with sulphuric acid and ammonia. It was so interesting. And then they gave me a three-day weekend! [Laughs] I thought I'd died and gone to heaven. It was wonderful. Such an interesting group of people and learning the whole process. I knew nothing about the grain trade. I knew there were elevators on the lake, but I didn't know what they did. I mean, to me, an elevator went up and down and carried people. [Laughing] So it was just fascinating learning all about them. And at that time, I think there were about 15 elevators open, so it was a big job. And we were checking all the cars that were coming in. A real production. We had two shifts, and this lab went 16 hours a day.

NP: Who were some of the people in the lab when you were there? Who was heading the lab?

PR: Wally Zarowski was heading the lab and his assistant was David Hearn. And then the rest of us were all on the same level. I think there were probably about ten or a dozen technicians working the two shifts.

NP: And how long did you stay there? I think you mentioned earlier on, but it's--.

PR: I stayed there—although I was laid off the first two winters—in 1975 I became Wally's assistant because some of the others had moved on, and I was there until 1978 when I left to have children.

NP: And were there any changes that occurred over that time?

PR: Yeah. There were enormous changes. The Kjeldahl lab closed, and we went to testing protein by infrared technology. So near-infrared spectroscopy, NIRS was what it was called. So there were, like, little computer machines, and you had to grind up a sample of grain and stick it in and calibrate these machines. It was completely different from when I first started. No chemical use at all. We were just breaking ground on that. I mean, that was new technology, and it wasn't always reliable. So we put these protein testing machines in all the elevators across the waterfront. Some of them had backup machines because they were very busy elevators.

We would have to not only put through I think it was 40 calibration samples quite regularly--. Every day they would have to run three samples—a high-protein, a medium, and a low—to see how they were reading, and they were adjusted on that basis. And because they weren't entirely reliable in the beginning, we used to do what we called “the run,” where we would take these samples and run across the waterfront in our cars. And one person would do this. It would take all day. And you would visit all 15 or 16 elevators and run the three samples and adjust the machine. So, a couple times a week I would do “the run” and get to know all the elevators and the people across the waterfront in setting up the machines. It was pretty fun.

NP: Yeah. It initially sounded like a desk job, but--.

PR: Oh, no. It wasn't at all.

NP: What kinds of things could go wrong in either the testing or as the results of testing? What--?

PR: Well, something that was really a problem was the grinding of the grain because if it was coarser, the machine would read it differently. It was sort of reflecting the light. And, you know, if the grinder had picked up a stone or something in one of the samples, it made a hole in the sieve. Of course, the particles would come out coarser and it would just read them wrong. Or somebody would adjust it, maybe thinking they were correcting an error, but they would adjust positive instead of negative, so now it was out by two instead of one. [Laughs] There were a myriad of things. The lights could burn out. Mainly it was the grinders though, getting them to grind consistently and finely and not overheat. Because when they overheated, then they were sort of hot and gummy, and the grain then would be stickier than it should be. Right now, they test with whole grain. They've gotten beyond the grinding which is a huge improvement. That spectroscopy has made great inroads in the last, oh, 30 years since I started there.

NP: Is there another name, then, associated with the technology that's used now?

PR: It's still near-infrared spectroscopy, I think. You'd probably have to interview Mark Lavallee or someone that worked in the protein lab to know more about it because I hadn't been in there for 25-26 years now. So I'm a little behind on that.

NP: Things change!

PR: Yeah. Because I did go back into the entomology lab instead of protein.

NP: Because you were working in a quasi-management position or a management position when you moved up to be Wally's assistant, could you identify what you think made a good protein lab worker versus a person who was going to have difficulty doing that type of work?

[0:10:15]

PR: I think it was, of course, a bit of math, knowing the scientific process.

NP: Now how does the math factor into it?

PR: Oh, well, the calibrations, the standard deviation, the means and averages. We're all the time calculating things to see how the machines were running. Graphing things to see how they were running against the norm and against the previous machine and samples that were being tested in Winnipeg. The Kjeldahl lab was still the official test, so we would send samples to Winnipeg to be tested to see if our machines were reading right against the Kjeldahl method.

I think attention to detail, probably. And abstract thinking. It's not concrete, you know. The numbers were always in flux, like, "Oh, it seems a little down today. But yesterday it was up, so does it average?" And you just had to be thinking on your feet all the time and sort of trying to out-guess these machines. So, yeah, probably technical abilities. Oh, and repairing them. We were repairing the grinders all the time, taking them apart and cleaning them out and replacing impellers. You had to have some hands-on ability too.

NP: Now, when the samples came in, did they come in with a pre-determined protein level that you were just confirming, or you would actually establish the protein level on every car that came in?

PR: When it was the Kjeldahl lab initially, we were establishing the protein. It just came in a sample envelope from the elevator, and we would grind up the sample and test it through the chemical process, and that was the answer. But once these infrared spectroscopy machines were put in the elevators, they had the answer, and we would test some of the samples. We couldn't

possibly do them all. And then some were done on the Kjeldahl lab. But we were the monitoring and the oversight for the machines that were in the elevators, and they were doing the work.

NP: Mmhmm. And that would make a difference to binning?

PR: Yes.

NP: Once protein took over as sort of one of the major factors for--.

PR: Absolutely, yeah. I'm not sure at what point the payments went to farmers. Because it came from the west in a big car, so that would be several farmers' grain mixed together. And I don't know how they sorted that out and decided who got paid what. But yes, at the elevator level, we did a quick test in the elevator. It was--. Oh, I forget the name of it now, what we called it in the first half. As it was initially dumping, they would quickly run a test, and then it could be binned on that result. And then they would wait until the whole car showed up, they had the whole sample, and they would grind another sample and test it. And of course, that would be representative for the car. But it would be binned on that initial one.

NP: And who was doing the test in the elevator?

PR: It was the grain inspection assistants, the PI-1s.

NP: Ok.

PR: That became their job. Or one of their many jobs.

NP: And so, it wouldn't even need to pass the senior inspectors?

PR: No. It was done all on the PI-1 level. Although the senior inspector was responsible for what went on in their office, no. It was the PI-1s that were handling it.

NP: Ok. Anything else that you would like to say about the operation as it was when you were in the protein lab? Any crises occur? Was there anything that, you know, like, "Stop the presses! Or stop the computers, we've got a problem here"? Any--.

PR: You know, it's a long, long time ago because I left there like 36 years ago. I know there were a couple of times when a machine broke down and it was like, run out and get it fixed right away. Replace it with the other machine that was in the closet and haul it out and make sure the high-lows were run and it was running right. There were a few things like that. And usually, we would bring them into the lab to run the 40 calibration samples and recalibrate them and set all of the numbers inside on the circuit boards, but sometimes we did it in the elevator. So we would just take 40 grain samples out there and run it and reset it right there if we could.

NP: Um--. Oh, there was a question. Did anybody ever have--. Would there ever be any reason why someone would question your results? So you've got your results, you send them in to Winnipeg, would be essentially where they would go?

PR: I think so, yeah. I think that's how it went.

NP: And so, seldom any--. Like I'm thinking of grading as an example. If the inspectors are grading and they have a challenge, really, to the results that the inspectors had come up with with the grade, it could go up to as far as a tribunal in Winnipeg. Any--?

[0:15:11]

PR: You know, I'm assuming there must be an appeal process, and I can't remember how that works because it probably works differently now. But the sample was retained in our office for about a month. So I would imagine if somebody had an appeal, we could've pulled another sample and retested it, sent it to Winnipeg to go through the Kjeldahl lab. I don't know the formal process for that.

NP: So were these the samples that were kept in those metal grain tins that I've grown so fond of?

PR: Yes. Yeah. And you know, one other thing that we did there that was interesting, we set bands, we called them. So different elevators would have different bands. If you wanted the grain to come out to say a 1 Red 12.5, they might be told to bin everything from say a 12.8 percent protein to a 12.3 as a 1 Red 12.5. And so, our inspectors in the elevator wouldn't tell the elevator, "Oh, this is running 12.7." They would just say, "It's a 1 Red 12.5," because they knew the band that their answer had to fall into to become that. And so, they would have that for all of them, like 1 Red 14.5, 13.5, 12.5, and 11.5. They would also have different ones in different elevators. And that was, I don't know how that was set. Someone in Winnipeg set that and they told us what the bands were, and we would notify the elevator, "Your band is to be such-and-such." I think it was based partly on the machine, how the machines were running. They could tell if they normally ran high, "Ok, then we're going to give them a lower band." That could change weekly, and it did.

NP: Wow.

PR: Yeah. So we were always trying to keep on top of, “Are you using the right bands?” Because if a shipment went out and the elevator said, “We’ve been binning everything the way you told us and it should be coming out 12.5 protein, but it’s 12.3,” that wasn’t acceptable. I mean, there was a tolerance for that, but I think it was like 0.2 or something. So if it was coming out too low, that means they’re now shipping a 1 Red 11.5, and they would get less money for it. So it had to be precise, and we weren’t really telling them the official numbers so that they couldn’t mess with things. We were just telling them---. Sort of a little bit of a safety factor. “This is a 12.5 and that’s what you should call it,”

NP: So that’s on average coming out of that bin into that shipment should come out at 12.5?

PR: Yeah.

NP: Yeah. And I would imagine that changed because we have interviewed people from out west who were responsible for crop surveys done every spring, and the protein level does vary based upon growing conditions and--.

PR: It does, very much.

NP: So what was average one year wouldn’t necessarily be average the next?

PR: Not at all. It’s really dependent on sunshine, I think. Sort of a drier crop will have a higher protein. Some years you would get extremely high protein, like they would even make a band a 1 Red 15.5 because the protein was coming in so high. And bakeries could buy it at that and then they could buy some cheaper grain at a much lower level and blend them to get the right answer that they needed for their own bread. So yes, they certainly changed with the new crop coming in, which starts, I guess, September/October. So there were often real fluctuations then, and we were just waiting to see what the protein levels were going to be.

NP: And so that would be fed to you?

PR: Winnipeg would test all of that, yeah. They would know what was coming off the crops. And they would set the bands, yeah, and we would notify our elevators.

NP: What difference would it make to you—or would it make any difference to you—if the protein levels changed?

PR: No, it didn't make a difference to us, but the elevators had to handle it differently.

NP: Ok. Did it give you a bit of a sense of if the results of the various tests were coming out--. As you said, you had to be sort of in tune with what the results were, it wasn't just, "Look at the results and accept them."

PR: Well, sometimes it was a tricky thing because we had a range of samples for those 40 calibration samples, but if you're getting a crop that's really high in protein, you don't have the right range anymore. Your range might go from 14.7 protein down to 11.5, but the machine is seeing over and over at 15 percent protein. So you would have to run different calibration samples to make sure it was sensitive in the right zone.

NP: Ok. So a lot more to these things than initially meets the eye.

PR: Oh, absolutely. [Laughs]

NP: Yeah, yeah. When you came back from your maternity leave, you moved into a different position. How did that come about?

PR: At that time, the entomology program was growing. Up until then they had just had the one grain sanitation officer, and they did elevator inspections. Because we inspect not only the grain in the entomology lab, we inspect the grain elevators and give them a rating and make sure they comply with the Canadian Food Inspection Agency's [CFIA] mandate. The Food Inspection Agency initially was alternating with the Grain Commission, and one agency would do an inspection and then the other one would go in two months later and do the inspection, and they were alternating like that. So it was about three inspections a year for the Grain Commission.

Well, the Canadian Food Inspection Agency turned it all over the Grain Commission, and that was in 1988. So suddenly we had to do six inspections a year in every grain elevator, and there were a dozen at that time. So they hired two assistant grain sanitation officers, and I was lucky enough to get one of those full-time, permanent positions. But it was a new position at that time.

[0:20:54]

NP: Now, you didn't know anything about bugs. [Laughs]

PR: No, I didn't! And I hadn't even taken biology in high school. I knew nothing about genus, species, identifying insects. But I'm curious. [Laughs] And I took science and math in high school, so I knew the scientific process, and I was so keen to learn. And it was so much fun. I was really lucky that they took a leap of faith and hired me to do that.

NP: Who was in charge of the entomology lab?

PR: David Hearn, who had been the assistant in the protein lab. He had gone to become the grain sanitation officer in the entomology lab back when I took his position in the protein lab. So years earlier.

NP: Mmhhh. Now, what did--. This is sort of putting you back into when you were a newbie on the job, but when you think back over that period that you were just learning this new stuff, what did you learn? What did you find most fascinating? What sort of surprised you about the relationship between bugs and grain?

PR: I loved that job so much. I loved it so much in the beginning. I said if I won the lottery, I'd still come to work for free. It was so interesting learning the science, learning about the insects, the microscope use. It's just absolutely fascinating. And then going into all of the elevators, which I had been in with the protein lab—I'd done the run—but we'd only been into the government inspection offices. We got to see the entire elevator. We could go anywhere—the driers, the pellet plants—and we had to go everywhere when we did an inspection every two months. In the entire place—the basements, the bin floors—everywhere. And we looked for not just places where there would be insects—although we did take a lot of samples, maybe 100 samples on an inspection—we looked for glass that might get into the grain, animals, birds, mouse droppings, the whole gamut of sanitation. So it wasn't just an insect-finding mission, it was a sanitation assessment of the elevators.

So I learned so much about the movement of grain and the whole grain trade and the ecology of insects, of course. Absolutely fascinating. And I felt like it was just a great match for me. I was so lucky to have a job where my abilities and my interest was peaked, and I think I was a perfect match for where I was. I enjoyed it so much.

NP: I'm just trying to decide whether I take a little offshoot here because of your experience with each of the elevators. When you went in to do an inspection, take us through--. You'd have a process in order to keep things straight. So can you pick sort of the typical elevator—and I know some were atypical—but pick a typical elevator and describe what that day was like when you went in to--.

PR: Ok. When we did an elevator inspection, it generally took two mornings. You usually just went out in the mornings because in the afternoons you had samples to look at from what you'd set up early when you first went into work. So mornings, we would

head out to the elevator, and we would start at the top usually, take the elevator up—the hoist—and start inspecting from the top and walk down and do the top half. So the top floor, the garner floor, scale floor, bin floor, distributing floor, and then out onto the tops of the annexes where the grain runs and drops into the bin tops. That usually took two and half or three hours. And we would sample as we went, making notes about things we saw that maybe needed fixing, cleaning up. And then we would assess each floor as we left. So it would get a score. Four was perfect, zero was horrible. So most of them got a score of two or three for the sanitation. And we would keep these notes.

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Now the next morning we would head out and do the bottom half. So you start on the cleaner deck, the basement, the basement of the annexes where the bin bottoms are and the grain comes out, track shed, pellet plants, driers, any extra thing that could be reached from that dock level. We could walk around and look outside as well along the docks or wherever we needed to where the grain flowed. So that would be two mornings, but associated with each of these elevator inspections, we did bin drop samples. It was part of the checking of the grain in the system. We checked railcars coming into Thunder Bay, we checked ships going out, but we also checked the grain in storage. So every bin was supposed to be checked once a year. So we would work out which belts we were going to check this time, making sure that we got to all of them at least once a year.

So you go to the bin bottoms down in the annexes and you quickly open and close the bins with the wheel or the lever or whatever it has, and you get a drop sample. So all we needed was a kilogram, I mean, sometimes more than that would come out. And you just go bin to bin, and you get one from every single bin. So, in some of the big elevators, that would take us two or three days to get enough samples so that we got them all in the proper time frame. In the smaller elevators, we could do that in a morning.

NP: Would you work by yourself or--?

PR: No, generally we worked in teams. There were two grain sanitation assistants hired, and then we also had a PI-1 working with us. So we would work in teams, and someone would bag the sample, someone would open the bin, and you label them as you go. Now, in latter years—probably my last five years there—we got the grain elevator company themselves to send someone with us to open and close the bins, being as it was their equipment and sometimes it broke when it was open. Sometimes you'd get it open, you couldn't get it closed and there was grain everywhere! So, you know what, it was their equipment and we felt really that they should be opening and closing it. So we made those great inroads, but not for many, many years. But almost always we were in teams of two.

NP: Hm. How were you received?

PR: Ah, you know, sort of like intruders. Like you would probably feel about somebody coming into your house and digging around in the corners and telling you it's not clean enough. [Laughs] And I can sympathize with that. I know that that wouldn't feel very good. I tried to give them the idea that we're there to do a service for them. "We're finding where the insects are. We're finding where the dirt is. We're finding where there's broken glass and it might get on the belt and into the grain. So please take our reports and just go to these places and fix the things up. You don't have to send one of your people around to do all this checking and testing." Because for the most part, the elevators had almost no insect testing themselves. There were a couple of elevators that had a few Berlese lights and showed a little interest in running them in the last few years, but mostly, they just relied on what we said to tell them where the insects were.

NP: Just for ease of transcribing, how do you spell Berlese?

PR: Capital B-E-R-L-E-S-E.

NP: Now, I guess I'm a little surprised when you said they might score a two or three out of four. Being a keener, I would've thought, "I want a four! I want a four!" [Laughs] So did that change over the years as they became used to this ongoing suggestions for improvement? Did the scores get better?

PR: Yes, they did, actually. When David Hearn first started—which was about 12 years before I first started there—he said it was abysmal. Like dust so thick in the air. That was sort of when they were just starting to get the air cleaning equipment in there. Piles of dust and grime and filth all over. But it was reasonably good by the time I came to work with him in 1988. You could still go through a place and find grain growing, you know, the grainy grass stuff was 18 inches high and there are clods and sods on the ground and flies all over. Some places, of course, were better than others.

NP: Inside the elevator?

PR: Yeah. There are places where there's water lying on the floor because the drainage isn't good. I mean, those levels are quite low at times, almost at lake level. But it did get better over the years as people saw the value in it and also as things became a little more strict. I felt for them, in a way, because they would say, "You know what? You've been hammering on me to get these belt junctions cleaned up for years and to get the grime from dripping ovetop onto the belt, and we've done it. Haven't we done great? But now you're looking in all the other little dark corners!" You know? It was hard for them because, of course, when there are really severe deficiencies, you're going to harp on those, and once they cleared those up, well, you're going to start looking harder and deeper and digging into corners. So I know at times it was really frustrating for the elevator employees.

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NP: Now I've heard other people commenting on conditions within elevators and they say, you know, some are better than others. It's not a question of everybody's up to the same high or low standard. So let's give credit to the operations in town that usually scored at the top end of the scale, if you can.

PR: Well, the one that was fabulous—and I never inspected it, I only went on a tour once to visit it—but it stayed with the Canadian Food Inspection Agency, is Canada Malt. They said you could eat off the floor. Grates on the windows to keep mice out. They had mouse traps, and they would go around and count the mice and determine the gender of the mice, and they were so on top of it. A very clean place I think because it was a processing plant. You know, I really don't feel comfortable giving any other information about the ones I went to.

NP: No, I understand. But you can say--.

PR: Oh, yeah. Some were better than others. Yeah.

NP: Yeah. I'm also interested—because we are Friends of Grain Elevators—I'm also interested in the physical plant. And because you were in and out of all of them—and up and down—can you comment on some of the elevators, the ones that, “Gee, I wish I didn't have to go there this morning”? And that's oftentimes just a personal thing. Like you were talking about walking down stairs, and I've walked down stairs in a few elevators, and there are ones that I didn't mind doing it and others that--. It's no fault of anybody's because they were constructed at different times. So is there anything about the physical elevators themselves that--?

PR: There are some interesting things. Now Pool 6, which has been knocked down at the waterfront, it had a bin floor and a distributing floor that were reversed. On all the other elevators I've seen, the distributing floor is above the bin floor, and then the chutes come out onto the belts. But in Pool 6 for some reason, it was reversed the way it was built, and it was most unusual. The stairs in the Richardson elevator somewhere along the way, say between the scale floor and the distributing floor, are really wide spaced. They've got a certain distance the stair has to fit into, and it can only be a certain height for safety. They're really wide and you feel sort of like you're going to fall through the grates while you're walking down them. And there was one in the old Manitoba Pool 1, which became Agricore United S, where they're really close together and you almost felt like you were on a ladder, but you were on stairs.

That elevator is interesting in that it had two full workhouses and two full annexes attached to each. So when we were doing inspections there, it actually took more time because we would do the top of the one and then the bottom the next day and the bin drops, and then we would have to go to their other workhouse, which was joined by belts and such, and start all over again. It had another top floor, garner floor, scale floor—it was a complete other workhouse. So that was always an interesting one. Two cleaner decks, two basements, two track sheds, you know, really a strange set up. But it was because the old one had been built long ago.

NP: What about the elevators up, the person-lifts, or man-lifts as they're often called? Did they vary at all from elevator to elevator? How you had to get up to the top?

PR: Yes. Some of them are very small. The old one in Manitoba Pool 1 used to scare me a bit because there was no phone in it. And it was quite small and rickety. We never stopped and we never got stuck, but it was always sort of in the back of your mind that you might. Some of them were really small, and some of our staff who had claustrophobia were really scared to ride on them, so they would climb all of the stairs and meet us at the top floor. [Laughs] But I mean, that's--. I don't know how many storeys up is that? Twelve or 15 storeys up? They'd be tired by the time they got there. I never got stuck in an elevator hoist.

They had these poles that you could slide down like fireman's poles between some of the floors. And I never slid down one myself. The elevator staff were allowed to use them in the early days, but they've all been blocked off as far as I know. I guess they're deemed not safe anymore. And there are also some little—what are they called?—jack ladders. It's a little belt that goes up and around like an elevator would, and it's got a little platform you stand on it and a hand clasp or handrail that you hang onto. And you get on and you pull a rope or push a button or something and up you go. *Zoom!* But don't ever go up to the top because it turns upside down and you'd fall all the way to the bottom! [Laughs]

[0:35:11]

But there is a pellet plant in Viterra that still has one of those. I don't know if anyone rides on it. Most of them, again, have been blocked off and no one uses them. I never went on those. It never seemed safe to me that I would be able to stop it when I got to the proper floor.

NP: And it was you that had to do it while you were clutching onto the--. [Laughing] Yeah.

PR: Yeah! And I mean we would've had bags with samples and all kinds of things. No, I always stuck to the stairs.

NP: We are putting in for historic site status for Western Grain By-Products.

PR: Oh, awesome.

NP: Which would've been Elevator F, or who knows what, Pool 10 maybe?

PR: Yeah, I think it was.

NP: So, have you been in that elevator and what do you remember about it?

PR: Is it still open? Ok, I thought it was. That used to be inspected by the Canadian Food Inspection Agency for most of my career in the entomology lab because it was a processing place. It was Western Grain By-Products. But at some point, they had to get a licence as a grain terminal, and that's when we took over inspecting it. So probably in the last five to seven years of my career, we were in there inspecting that elevator. And it is so fascinating. It's got huge gears. You can see where the steam plant ran these big gears that ran belts that went clear from the basement up to the top floor and ran all the equipment. Now, it doesn't run like that now, but all the equipment is still there. There are even gears that are like wooden cogs in the gear. And if one cogs break you can take it out and replace it with another one. It really should be a heritage site. It's really interesting. It has a very slow man-elevator, [laughs] that's one thing I can say about it. It takes a long time to get to the top.

That is the one elevator here that actually has some open bin tops. The bin tops, I think, before my time, may have been open on all of the elevators. There were walkways, and for a person to get up there and transfer grain from one bin to another and to change the chutes and the slides in there—to set them up properly—they would have to, I've been told, swing across on a rope from one platform to another or one bin top to another. And I can't even imagine what that would feel like when it's an empty bin and you're going to drop 80 feet or something into it. And I'm sure some people did. I don't know. [Laughs] By the time I came along, they were all covered in concrete, and so you just walk along the top of them like you're on a floor. And the bin chutes go through the concrete into the bin.

But Western Grain does have a few on the east side that are still open. A few little corner bins, not the big round ones. And so that was really fascinating to see. We didn't have to walk along it, but you could see the chutes going into the open bin tops.

NP: Any other elevators that you can think of that sort of had special features that come to mind?

PR: The elevator which was Viterra C—I think it's owned by Richardson's now—over by the Shipyards, it had a dumping bay and a pellet plant that were separate from the elevator. I think it used to be Pool 9 back in the day. I remember when they knocked it

down. But anyway, Grain Growers, they built this pellet plant there. So that was kind of different because it was disconnected from the elevator, and it had to be joined by long conveyors and, I guess, belts and stuff that took the finished product over to the bins to be stored.

NP: So you would have been in Pool 4 A and B--.

PR: Yes.

NP: Which would have been beside that.

PR: Yes. And that was very interesting because they were joined in the basement and on the bin floor. And what a maze! Could you ever get lost in there. Oh, man! Pool 4A had about seven or eight belts across, and then there were ones that ran at 90 degrees to that that went out into the annex. And you were up and over and under. It was amazing. And then of course you go through a little door and you're in 4B, and it's a completely different little place. It looked like a church down in the bottom. Like a cathedral.

My co-worker, who was the other assistant grain sanitation officer at the time, Bill Gibbins, he was a musician, and he often said he'd love to get down in there and play some music because he thought the acoustics were so neat. It's just really tall and cathedral-like. But you had to watch where you were going in Pool 4A because if you took a wrong turn, you would be there still. I remember one of my coworkers saying we worked with a young woman one time, and he found her crying in the corner because she'd lost her way and she didn't know where she was or how to get out. [Laughing] But really, everything runs at 90 degrees to everything else. So just follow something until you get to somewhere else, you know? You don't have to go in circles. [Laughing]

NP: If you had [laughs] to get stuck in an elevator—like the whole building—which elevator would you be least worried about being stuck in?

PR: Um. Oh, gosh. I don't know. You'd have to take the outside stairs down from some--. You know, I think they're all the same. I think they all have outside stairs somewhere, and you'd have to go down a big steep ladder.

[0:40:20]

NP: Did you ever go down the outside stairs?

PR: I went outside, yes, on the stairs. In fact, I slid down one one time on an icy staircase. A full set of stairs, and I've still got the scars on my elbow to prove it. But my hip healed just fine. [Laughs] But I bounced down on one hip and one elbow the whole way.

NP: So how far down did you go? Like they go zig-zagging, right? So you don't fall all the way down. [Laughs]

PR: It was just one set of stairs, so maybe a dozen stairs? I just slipped and bounced all the way down. Fortunately, though, the person I was working with was above me, so I didn't knock his feet out and take him with me. Yeah, but that was quite the wild ride.

NP: Yeah. Was that your only injury?

PR: Oh, I had a few others. Sore back and, you know, sprained fingers and that sort of thing. You'd get pinched fingers sometimes when you were opening the bins to take the bin drop samples. They would get squeezed between two levers or something. Sometimes cuts because you were under the bin chute where the grain comes out. It runs over the metal so long that it gets a really sharp edge, wears the metal away almost to a knife edge. So you had to be careful of your fingers, but in the later years we wore gloves most of the time.

NP: When you're speaking about safety and safety equipment, so what did change over the time that you were working? Gloves would be one thing. Any other equipment or protective clothing that you had to wear that you didn't when you first started?

PR: There were huge differences. When I first started, I wore hiking boots for the first two years. Steel-toed boots were recommended, but they seemed to be optional. The first thing I had for equipment was coveralls. They gave me that the very first day, and we really needed those in the elevators because we would be crawling around and getting filthy. So our people in the entomology lab always had coveralls. Steel-toed boots, of course, came in and everybody used those. Hard hats we always had. We ended up with head-to-toe coverage. The only thing sticking out were your cheeks. We had goggles, of course, earmuffs, gloves, elbow pads, knee pads, back braces.

But the thing that made a huge difference was badges that detected phosphene gas. Phosphene gas is what you use to fumigate insects to kill them dead, but they'll kill you too. They'll kill everything. It can seep out of the bins. Although the bins are meant to be sealed, fine cracks and such, these fumes can leak out. So we had a big gas detector we carried for many years. Not in the first few, there was no gas detector at all, but partway through we got this big heavy one, about five pounds, and you could put that around your neck and carry that around. But before I left, we had little personal badges that weighed maybe half a pound, and you clipped them onto your pocket, and it would tell you if you're getting into a gas situation.

NP: Was there ever a situation where people were overcome by gas or at least susceptible to it?

PR: Yeah. No one was ever overcome, as far as I know, but yes, I was exposed once and got sick and there were others. That was the day that some workers had refused to work in an elevator because of the gas fumes, and so they asked me to come in with my gas detector and check what the levels were and that sort of thing. And I got a little bit too much of that. But the workers were right, it was not good working conditions. So they closed that section of the elevator and they worked in a different section. But they didn't have any way of checking it. As far as I know, there were only three meters in town at that time, maybe four, where the levels could be checked. So they asked me to come in and check with ours.

NP: Is that system of insect control still the system that's used, or have they improved that too so it's not so--?

PR: No, that's still the system world-wide really. It's phosphene gas. In parts of the world, insects are becoming resistant to it. As far as we've found in Canada, they aren't yet. We don't use that much fumigant in Canada. We've got the cold weather that controls the insects so nicely. No other country in the world has that. So we do a lot less fumigating than most other countries. But still, that is the system. And they're working on new things all the time, but no. That's the go-to one.

NP: I was interested when you said earlier on that when you were taking samples from the bins as you were required to do, that you would take a sample out. Do bugs tend to congregate at the bottom of the bins then? Is that the--?

PR: No. No, that's not where they would be. They would be where it's warmest, which in the winter, of course, is going to be the centre core. Grain, being such a good insulator, it stays warm when it's warm. So the central core is where they would migrate to. This was just the easiest way for us to get a sample. To get lots of samples. We couldn't ask the elevator to run the bin and let us get a sample out of the middle. I mean, we suggested it, but there was no way they were going to do it. There were a couple of times in the winter when they would turn the grain to kill insects in a bin that they knew had insects in it, and so we would sometimes go and catch the grain if they were going to turn it.

[0:45:27]

There is another method too, where you can go to the top of the bin and put down an auger and draw up grain, but those augers are really heavy. You have to put extensions on them. A lot of the bins you can't even get them into because, you know, the grain goes down a chute, it's around a corner. Or it's 20 feet down and you can't reach it. So that was never something we did. They did a

little bit of experimenting with it before my time here, but no. We just stuck with the bin drop samples. And, you know, it is not the best sample.

NP: Is it fair to say that if you found bugs there, they've got a real problem?

PR: We would say that, but then they would say, "Oh, they're always in the bottom of the bin. We know it's just a bin-bottom problem." So hard to say. I don't know why they'd be hanging at the bottom of the bin. I would say it'd be right through, but yes. If we found any, even one, the grain's considered infested. In other countries, like the US, they have a tolerance for insects. You know, they say if you put in a probe, and you get an inch full of insects in it—which is hundreds—then it's considered infested. Or they may say, "If we find more than ten adults in the grain, it's infested." But in Canada, one insect is infested.

NP: Is that—and I'm sure some elevators would say so—unrealistic?

PR: Um, well, I think you could say if you found it in one kilogram of grain—because that's what our samples are, is one kilogram—and a bin holds 90 tonnes of grain, you could have millions of insects in there. So I don't think it's really unrealistic. I think there are a lot more insects get through than we realize. Because the Berlese testing only finds mobile forms of insects because they have to crawl away from the heat and light. So you're only going to find larvae and adults. So there could be eggs in there, there could be pupae in there that you're not catching at all. You're only seeing the larvae and the adults. So it's not a 100 percent perfect method and they're all the time looking for new methods. But it was the one we had and the one we used.

NP: Now if you found your bug in your sample, [laughs] what then happened?

PR: We would recommend to the elevator what to do with it because they had the grain at the time. So they were meant to fumigate that grain. Now sometimes things got lost because there was a day delay from when the car was dumped till we got the sample till we ran it, which takes six hours, and we looked at it and we notified them. The grain could be gone on a ship, it could be put over the cleaners, it could be mixed in with things. So sometimes it got away. But they were meant to fumigate it. That was the recommendation.

NP: Now would there be a possibility then as the sample came in and it went to the inspection office that they would find bugs right at that--?

PR: They're supposed to look, the inspectors always are. It's hard to see them. Most often, it's larvae that we would find in the grain because the sampling system itself is a pneumatic system. It's got bends and corners, and the grain comes all the way from

the track shed and it smacks around through this sampling system. And the adults get beat up, and they get broken up, and they get smashed. So very seldom would an adult come through. If it was an adult, we would hope the inspector would see it. Occasionally they did, maybe once a year we would get a call, "I found something and I'm sending it into you." Maybe twice a year. But the larvae, no, they're just tiny little translucent things, and I would never expect them to see that. And that's most often what came through and comes through the Berlese funnel.

NP: Well, I would be surprised you can stop anything then because knowing how the elevators work, you know, they dump the cars, it gets—very seldom now does it have to be cleaned—so it gets taken, elevated, and dumped into, already, a bin.

PR: Yeah.

NP: That's already full of something.

PR: Yeah, and now if we find that car infested, you've got maybe ten other cars in there with it that all have to be fumigated because it's all mixed. It was really hard to find insects, I felt, because the sampling system we knew was killing them. So this didn't even seem like a good way to sample for insects as far as I was concerned, but it was the way. I mean, we couldn't have somebody out there sampling every car that went by, it just wasn't going to be feasible. I almost felt like, "Wow! We found an insect! We win!" You know? [Laughs] "Finally we found something!" But it isn't the best system, and it's not 100 percent. And then some of the cars were lost, you know, they couldn't track them so--. You don't catch all the insects for sure.

[0:50:11]

NP: Would there be sampling then on the outgoing?

PR: Yes, the vessels were all sampled. And even to this day, the lakers are no longer sampled, but the salties are. So that is a big selling point for Canadian grain, like, "We sample everything going out at every 2000 tonnes. We take a sample. It's tested for insects." Yeah, that's a real selling point is the quality.

NP: Now they're not there very long. Those ships are usually there in a day or two depending on the size of the shipment. So how does the system work to identify problems more quickly?

PR: Well, if the vessel was still in port, it had to be fumigated here. So they could offload it. There are a couple facilities in town that can take the grain off. And so, the ship would go there, and they would unload that hold, clean it, and spray it and fill it with

something else and treat that grain. If it was already sailing, we would notify Montreal and Quebec, our region down there, and when that boat unloaded, it would be treated down there. Now if it's already on a saltie, that is a different situation, and they would have to deal with the seller and the buyer then.

NP: Now is that something that you would know about?

PR: No, I never got involved at that level. I would notify our manager of inspection—who would write the letter that had to go—and our entomologist in Winnipeg. So they would deal with the repercussions of that. We would recommend the kind of treatment, and we would notify them about what exactly had been found. When and where, that was it.

NP: You left in '13 and there have been a lot of changes over the last year, actually, at the Commission. So, I don't know whether there have been changes that have occurred since you left, even though it was so recent, but there was the elimination of the inward sampling and inspection of grain cars.

PR: Yes.

NP: Have there also been changes then in inspections of the elevators? Or were they planned for the future?

PR: Well, the Food Inspection Agency had a look at this. Hm, what year was it? 2012, I think. They had to look at all their programs because their funding was slashed. So they were looking at maybe taking back the inspections themselves or changing the way we do it because they pay the Grain Commission to do those inspections. And they didn't have time to look at it. They have so many things on their plate, so they let it go. Even now, nothing has changed. The people in the Grain Commission are still inspecting the elevators on the same schedule. I don't know if it's going to change. If the Food Inspection Agency looks at it and says, "We want to change it somehow," then yes, it will change because it's not our mandate, it's theirs.

NP: But the overall general inspection, even though the inward inspection is no longer there, the general inspections are still being done?

PR: They're still doing the elevator inspections, yeah.

NP: Now you had mentioned—and it popped into my mind when we were talking about Western Grain and the Canadian Food Inspection Agency—you said that was their responsibility because they were processing. Once they were no longer doing that and had an elevator licence, then all of the elevator inspections went--?

PR: Yes, we got them all. Yeah.

NP: Yeah.

PR: I've got two safety stories to tell you.

NP: Oh, please!

PR: When I was a new recruit in the entomology lab and I was finding my way around the elevators, I walked behind a belt on the lower level—it was one of the receiving belts below the track shed—and there was a little bit of water on the floor. And I'm walking along, I stepped into a sump pump hole right up about to my hip. [Laughing] So that was my initiation to the elevators. And oh! The staff there, they just laughed, you know? All these men thinking, "This recruit, she's not going to last a month here." Anyway, I fooled them. I lasted 25 years. But I walked around all day with a leg that was covered in dripping wet septic water or, like, runoff water anyway.

And one other one is I was walking outside on a grated walkway outside of a dryer, and it's the first time I'd seen this dryer. I suppose I hadn't found it in the first year or two I was there. But anyway, I'm walking along looking up like, "What is this and where does it go?" Because they didn't necessarily tell you all these places existed, you see. Anything that I couldn't inspect was fine by them because then they didn't have to clean it as much. So I'm walking along and checking this out and not looking down. There was a section of grating missing and my leg went right through, but fortunately both legs didn't go through. So that was exciting.

[0:55:13]

So there were things back in the day. When you asked about improvements in safety? Much better. Much better now. The quality of the air, the awareness of cleanliness, the awareness about the phosphene gas, the placarding and the marking of when they're spraying or using pesticides—it's so much better.

NP: When you were talking about the early days and you had overalls, which was essentially it, [laughs] and then in the latter days, you were loaded up. And I've seen—and in fact we've had pictures in our display—of elevator workers. And I thought, "My god, it looks like they're going for a space adventure." So it seemed to me, because I've had to wear face masks or a breathing apparatus for painting and so on, it's almost impossible to do your job for any length of time. Did you find that?

PR: It is hard. Yeah. It's really hard wearing the dust mask, you know, you feel like you're not getting enough air. If you start climbing stairs, oh, it's tough. You feel like you have to take it off to breathe. And then if you have a grain elevator person with you--. In the last few years, they did accompany us on inspections, which was great because then you could point things out to them, and they could take notes. So you're talking to them and trying to explain what you're seeing, so you've got to take your dust mask off so they can sort of hear you and read your lips because it's very noisy in there. Yeah, that's tough going.

And also goggles over your glasses, everything fogs up. So pretty much I don't wear goggles. I never did. I would just wear plastic side shields that would slide onto my glasses. Yeah. You get so much safety gear you don't feel like you can function. The gloves, which you pretty much need for either sanitation in the summer or just warmth in the winter, made it almost impossible to work. You're writing information on little tickets to identify the sample, you're dropping them into the sample bag, and then you've got to tie a knot in this plastic bag. So, take your gloves off even in minus 40 weather to do it. You had to because there was no other way.

NP: You brought up the topic of falling through, and I can just see the expressions on the guys' faces. [Laughing] What was it like to be a woman—at a time, there would have been more than when you first started—what was it like? Was it dependent on the person, or--?

PR: I found that in most cases, the men were really good with me. Now they would always, “Oh, excuse my French,” when they swore. That sort of thing. They were more careful around me though. They would try not to swear or use rude language. You know, it was always in the back of my mind, “I hope I'll be safe down here. I hope it'll be ok.” Because lots of times you're walking around by yourself, especially doing the elevator inspections. You're looking here and there and crawling around in all these dark spaces, and it--. I never ran into any problems. Honestly, it was fine, but there was always that niggling thing in the back of your mind. When you go into some little office to warm up and there are girly pictures all over the walls, you know? It's not like that anymore, but it certainly was when I started. I felt kind of edgy about it.

But for the most part, really good. I think there were a couple of times when people lost their tempers and started yelling and swearing and cussing us out and, you know, “No good government people,” and such thing. But I remember one fellow that phoned up, and I had sort of just thought, “Okay, I have to be careful of him now.” And he kind of lost it, and he phoned up to apologize, like--. So it was okay. We got along great after that. I think they felt that I was doing my job professionally, and I wasn't using my gender to say, “Oh, I can't do this or I can't carry that.” So we just kept it all on a professional basis.

NP: Do you feel that that was the experience that most women had in breaking into—what do they call it?—an unusual profession for women? There's a different, official--.

PR: Male-dominated?

NP: Well, male dominated. I worked in construction industry in a training capacity, so I had my experiences as well. So I'm just interested in--.

[1:00:00]

PR: No, I would say my experience wasn't the norm. But I wasn't in the elevators all the time. I wasn't there at dark, doing night shift trying to get to my car in the parking lot, that sort of thing. And I often was with someone else. I know some of the women that worked in the elevators in our offices—because the elevators didn't hire women back in the day. They would just be government people in the government offices—had a pretty tough time. There was a lot of rudeness. Oh, there were some scary things that went on. So I think I was a bit of an exception, and luckily so.

NP: Do you think part of that might have been that you were in sort of a regulatory--?

PR: It might have been. And the fact that I wasn't there all the time, and they didn't have to put up with me, you know, eight hours a day. They didn't have to sort of curb their language and be nice eight hours a day. It was just like, "She's here and she's gone," sort of thing. I had the backing of my boss too. I mean, he wouldn't have tolerated that—any abusive stuff. So I think there was a combination of factors, but don't I feel lucky.

NP: Yeah. Yeah. I asked you about the processes in the protein lab, but I didn't ask other than to describe what the entomology lab looked like. So let's take a day near the end of your career and explain how that day went. What would be your usual routine and what would come into the operation to throw you off your usual routine?

PR: Sure. In the morning, first thing that we came in, we set up the samples in the Berlese funnels under the lights because they take six hours to process. Take six hours for all of the insects to crawl away and fall into the jar underneath, which has some water in it that collects the insects. So it's important to get those up as early as you can. And staff would come in earlier than me to get that started. We had sort of flex hours. Then we would look at any samples that had been processing all night. So things that had had their six hours overnight had to be looked at, and that could be up to 160 samples. So two of us would sit at the microscope--. No, the magnifying glasses, rather. And you looked to see if you could see any livestock in the little jars of water. You had to wait

for the water to stop wiggling until you could focus on it, and then if you suspect that there's insects in it, you set it aside. And when you're all done, you sit at the microscope, pull all those insects out, identify them, and then work out what cars they're in, what elevators they're at, notify the elevators that it needs treatment, notify our head office in Winnipeg to follow up with the elevator that shipped the grain. Or if it was a vessel—a ship going out of Thunder Bay—process the letters, get all that ready to go, the paperwork.

And then the staff—sometimes it was me, sometimes it was the two men that were working with me—would head off to the elevators to do their morning inspections. I may have meetings—quality control meetings, safety meetings. There could be anything happening during that time. Reporting, writing elevator reports from all the samples had been processed from an elevator inspection. Then you've got to sit there with all of the sample tickets and do the whole full report, which they would get every two months. And that would take us through till lunch. Then after lunch, you look at the samples that were cooking all morning. So another 160 samples and identify those. Once the lights are free, set up the ones you're going to leave overnight. So it was just sort of a round of things all the time. Different elevators, though, made it interesting. Every week you were in a different elevator.

NP: Would it take—like the six inspections per elevator per year—would that take a full year-round or did you inspect elevators in the winter?

PR: Well, if the elevator was closed, we couldn't go in because we weren't allowed. But if they were open, yes, we kept on going. If it was minus 30 or something, we'd find something else to do because not only would we freeze, but you're not going to find insects either. They're going to be frozen and they're not going to be sitting on the slide waiting to fall out of the bin. So if an elevator was shut, we didn't have to go in. But yes, otherwise just kept going.

NP: If you had a cold winter, would all the bugs be killed?

PR: The bugs that got cold enough, you have to be a minus 7 Celsius for six weeks, and the quicker you can drop that temperature, the better it is at killing the bugs. They'd sort of acclimatize if you drop it slowly. So any grain that was sitting in a railcar would probably get cold enough to kill all the insects. Any amount that was maybe in a small bin might get cold enough. But if you have a big bin of grain—900 tonnes—that is not going to get cold enough. So the elevators would be encouraged to turn anything that they knew was infested, and turn it on the coldest days of winter. And not just once, sometimes you have to turn it two, three, six, ten times to get it cold enough to get the grain at that temperature, and then you leave it cold until spring.

[1:05:07]

NP: And why would they do that rather than do the fumigation?

PR: Oh, well fumigation costs money, for the pellets. Usually, they hire a fumigator. Not all of them. Some of them fumigate their own grain, but usually they hire someone. And when it's below 10 Celsius, fumigant doesn't work—plus 10 Celsius. It's not even allowed to be used down below 5 Celsius. So there is a space in there where it's too cold to fumigate but it's not cold enough to give it the cold weather treatment. So there are a couple months there in Thunder Bay where there's not a whole lot you can do for the infested grain other than just sit on it until the winter wherein you can get it cold.

NP: Now turning over a bin, how long does that take do you know?

PR: Well, it would depend on the amount of grain in it. It could take two, three hours.

NP: Ok. So I have this impression now as I'm sitting here looking out my balcony window at all these elevators, that there's bins being turned over all the way around--.

PR: Well, there could be.

NP: The lakefront. Is that usually the case? Or I mean, is it highly unusual that people have to--?

PR: It's probably unusual. Because the equipment is cold, they don't want to run it. They have laid off all their staff, so there are very few people there. But still we used to encourage it. In January when it was cold, we would call them and say, "These are the bins we know you have outstanding. Please turn them." And some of them did. I mean, in later years, people were quite conscientious about it. They would take a temperature as it was going back into the bin to know if they got it cold enough. I mean some of them were really on top of it. And some of them just didn't care.

NP: Mhmm. Did you ever get any feedback from the final customers—so here we'd be looking at the salties—from the final customers on incidents of bugs that actually show up?

PR: Yes. Sometimes. We didn't personally, but our boss in Winnipeg did. Our head office is in Winnipeg, so the entomology program is controlled out of there by the entomologist-in-charge. He controls the program for the whole country, so it would go back to him. You know, he would call and say, "What did you find on that ship? This is when it loaded, what elevators did it load at? What do you know about it?" A lot of times when foreign countries would call about insects, they would be insects that we've never even had in Canada—got into it when they were unloading it. They maybe wanted a deal. They wanted us to give them a

better price. I don't know! [Laughs] Very seldom was there ever anything legitimate. But we weren't involved in those correspondences other than just to say what we found at the time of loading. What we knew about it.

NP: What kinds of bugs are most likely in Canadian grain?

PR: The rusty grain beetle. Ninety-eight percent of what we find is the rusty grain beetle. It's a tiny little insect, about 2 millimetres in length, and it eats the grain. It eats the germ end where it's soft. The theory is that it can't penetrate a whole sound kernel of grain, but if there's a crack in it, it might be able to eat its way in. But we have such less problem with bugs than the rest of the world. Warm countries have weevils and borers and--. We see them the odd time, very little damage. In some countries, they don't even consider the rusty grain beetle to be an important insect. They call it a "bran bug" and they don't really give it much credence. But it does eat whole grain, the germ end, so we consider that an infestation.

There are, actually, three levels of insects. We have primary insects—those are the ones that eat the whole sound grain, and for that we would order a fumigation or recommend a fumigation. Secondary insects that are found, they eat grain dust, and they'll live on the ledges in the elevators. Some of those are moths. And then tertiary insects, we might find things in the elevators that are maybe feeding on the other insects. They're just there by coincidence really. Maybe fleas from the birds and the mice in the elevators. But you might pick them up in a sample. So it's only the primary insects we would get really concerned about.

NP: Are there any unusual ones that show up that aren't, as you said, origin not in Canada somewhere else?

PR: Yes. Some of them that don't really winter in Canada—the rice weevil, the lesser grain borer. But with global warming we saw them more often. They do a lot more damage to the grain. The rice weevil reproduces quickly. We have a granary weevil in Canada, and it also bores into the kernel and leaves sort of just like an empty hull with holes in it. But it doesn't reproduce as fast as the rice weevil. So we're lucky that we don't have the really bad ones. And we do have the cold weather that will kill them. They're never going to be resistant to that, so you don't have to worry about a chemical resistance. So we're lucky in the ways we can treat insects here.

[1:10:05]

NP: Now, most of the insects I would guess, then, have their origin out on the Prairies?

PR: Yes.

NP: Tell me about Prairies and bugs. Every province the same? Some sections more likely than others? Has the shift to inland terminals improved the situation?

PR: The warm sections are always going to be worse. They have things flying in from the States. From the Dakotas you get a nice warm south wind, and insects are on there. So they're always in more trouble, say, as opposed to the Peace River district, which is further north and not nearly so often infested. It depends on the year. It depends on the quality of the grain. The insects that we study here, they're not the field insects—the grasshoppers and that sort of thing. They are actually called stored-grain pests, and so they live in storage. Now, they could be living here in the elevators, although for the most part, I think they come in from the Prairies on the grain.

NP: Initially anyway.

PR: Yeah. And then they can get into the walls and that sort of thing here in the elevators.

NP: Now, I've been in your lab, and you have a map.

PR: Yes, we do.

NP: Tell me about your map.

PR: Well, every year we put up—every crop year—we put up a new map. And when we find an infestation from a primary insect, we find out the elevator that shipped that car in the Prairies and we put a pin in the map. Different colours for different types of insects. That only gives you the picture of what's coming through Thunder Bay. I don't know if Vancouver does that. It would be interesting for the people in Winnipeg to do that because they get fed the information of infested cars from all over Canada, and they could find out where things are really happening. But you get trends. Some bad years, every little station along the railway has a pin in it because they've had rusty grain beetles coming in cars to Thunder Bay.

NP: Now that they don't have the inward inspection--.

PR: We won't be doing that. There's no way to get a sample from those cars.

NP: So what do you predict will happen? Or what steps have the elevators taken themselves to take on that?

PR: I don't know. That was around the time that I left, and I don't know if they're testing cars in the elevators. They have been so busy this year. I can't imagine they've had time to test anything more than a few ships that are going out. And I think there's only one elevator in town that has Berlese funnels that would be doing that. They can still take samples to the Grain Commission. They'll do them for a fee, but I don't know how many are doing that. I'm expecting there's going to be more infestation because the cars are not getting caught here. Our people are still doing bin drop samples, so they're still testing the grain in storage. But those are not the best samples. I just imagine there are going to be more infested ships leaving the elevators here. I don't know how it could be otherwise.

NP: I'm trying to think. I don't know how many ships come in in a year. What is it, a couple of hundred? Or have I got that wrong? And this year is a lot more.

PR: I think there are probably--. I would say probably 300 and some, I would think.

NP: Yeah. So out of that, one ship a year come up with a sample that shows infestation?

PR: No, no. Not when I was there. It would be one or two a month.

NP: Oh, really?

PR: Yeah. Two percent of the grain coming from the west is infested, historically. We kept records for 25, 35 years. About two percent. Now, some years when it's really warm and there's been a warm winter and they didn't get a lot of kill out on the Prairies, it would be higher. That made a ton of work because you're tracking all this grain here in Thunder Bay. You're tracking all the elevators out there. They have to send samples to Winnipeg before they're free to get their name off of the hit list. It's a lot of work when you're finding infestation. Some years, there would be very little infestation, and it might average around one and a half percent of the cars coming in. But no, historically two percent coming in is infested. So if that's not treated here, and it's put into big bins, now the whole big bin is infested. There's going to be more going out, I would think.

NP: Especially that's why I asked the question about how many, because if it was one every five years, you know, we'll pay off the customer.

PR: Yeah, yeah.

NP: But if it's that much and, yeah, if you're not stopping it at the entry level, then possible issues. Let me check my questions.

PR: Ok.

NP: Let's see how we're doing. What might surprise people most about the work you did? So somebody who didn't know the workings of the Grain Commission and certainly the entomology or protein lab, what do you think would surprise them the most?

[1:15:24]

PR: Probably how dangerous it is and how physical. Not so much in the last couple years when I was just more or less supervising, but when I was really out there as an assistant grain sanitation officer, getting the samples, opening those bins--. The bins would be stuck. There'd be a big wheel like this, and it's stuck shut because maybe the grain was damp and now it's all clotted in there. You get a big bar, and you'd reef the thing open. Then you've got to make it go shut. Carrying heavy sacks of grain, you know, 40 pounds maybe. You might carry six or eight of those in a morning all the way out, under and over the belts out to the car to bring it into the elevator. The danger with the belts running and moving. The equipment moving. You had to have your wits about you. I expected to have a really serious injury before I was done. I thought, "There's no way I can avoid this." There's stuff moving. You've got your coveralls on, you've got bags of stuff, you know? I just figured that at some point I was either going to fall in a bin or get caught in a belt or something. So I'm lucky I escaped without that. So, very dangerous, very physical. I think people would be surprised to know.

NP: And now you have to have a fitness program because you don't get it at work! [Laughing]

PR: Yeah, I don't get that anymore! But I'm not breathing the grain dust or the mould or the phosphene gas or the malathion, the pesticide they spray on the floors and walls. I had a run-in with malathion as well as the phosphene, which made me sick. Hm. Not happy to go there.

NP: Because you were in the lab, and at the end you were the chief person in the lab, were the rest of your staff over that time or the time you were there, was the rest of the staff as fortunate as you? But, I mean, you were fortunate because you took care. Was there similar experiences of fortunately none of this happened? Or--?

PR: Yeah. I mean there were cut fingers, maybe sore shoulders, sore back. But we never had anything serious, thank goodness. You know, we were really careful about the chemicals in the later years. We set up a program where we would ask for notification of where chemical had been sprayed, and we wouldn't go in if it hadn't been 48 hours that it had been drying. We set up some programs. Luckily there was nothing serious.

NP: Now, as we progressed during our first hour and 18 minutes, you were describing some of your connections with other people within the system. So I'm just going to go through this list and see if there's anything you want to add about your connections with other people. Did you have any connection at all with farmers, producers?

PR: Yes. Oh! Awesome. I got the opportunity to go to three farmers' shows out in the west. One in Brandon, one in Regina, and one in Lethbridge. The one in Regina was called Agribition, I do believe, and one of them was the Farm Progress show, but I can't remember which one that was. But producers come in, and there are buildings set up with farm machinery equipment, the Wheat Board is there, the Grain Commission. Oh, anybody that can sell them anything is there. Some of them were in conjunction with livestock shows. These things are huge. They fill buildings and buildings and arenas with displays.

So I went and worked in the grain booth—the Grain Commission booth—and it was just awesome. I mean, the producers would come in and ask you maybe a couple questions about insects because we always took a jar of insects swarming over the grain to catch their attention. But I'm sure I learned more from them than they ever learned from me. Just finding out how they operate, the risks they take with the weather, the marketing, the money that they've got invested, the inputs. You know, those guys are dynamic people. Well, I shouldn't say guys. There must be some women that do it as well. But it was really something to see what it's like to live as a grain farmer. And then you think of all the regulations you slap on them, and you feel pretty bad about it. Between us and the Wheat Board, you know, and the railways and the grain elevators, it was really hard for them. Hard to be a farmer. You're not just worried about the weather.

NP: Yeah. It's hard, I would think--. It might be hard for you to answer this question because you spent so many years in the industry, and over that time you learned things. So what did you learn about Canada's international grain trade through your connection through the Canadian Grain Commission?

[1:20:17]

PR: We have a fabulous reputation and I hope we--. I'll say that again because you might want to quote that. [Laughs] We have a fabulous reputation in Canada for the quality of our grain—not just the grades and the high protein, but also the lack of insects. It's considered to be almost zero insects. I mean you can never say there are none because there might be an egg that slips through or a pupa, so we never say it has zero insects. But almost none. And that was huge around the world. So I felt that we were really doing a great job with that and something really valuable. Along with the quality of the grain and the assurance about the weight of the grain because of the system we had with the Grain Commission.

NP: And how would that be connected--. So if you think of your system that you were involved in—the entomology—where did that system start? Was there parts of it that took part on the Prairies and then we had our piece in Thunder Bay?

PR: There were so many elevators in the Prairies. There wasn't much we could ever do with them. They were never inspected. The inspection happened at the terminals because we could have staff there. There were hundreds—thousands at one time—of elevators in the west, and we couldn't deal with them. So when we intercepted insects in the terminals in Vancouver or Thunder Bay, we would notify the elevator that had shipped it on the Prairies. And then our Winnipeg people would take over and deal with them. They'd have to send in samples of all their bins and their boot, which is the leg that feeds these bins. So they would have to be clear before they could get permission to ship or receive grain. They had some regulations. So it started there, but kind of through a back way.

NP: Mmhhh. Was there a change at all when they started to get rid of the primary elevators and move to the concrete, what they called "inland terminals"?

PR: There were certainly a lot less elevators on our list, on our watch list, because some of them were such big elevators now. I think it probably became less of an issue for insects. You know, those big elevator people were more highly trained. Concrete bins don't hold the insects the way a wooden bin would with all of its little cracks and crevices. So it got better.

NP: Any connection with the railways that you would--?

PR: We had a really strong connection with the railways at one time because they pooled grain. Any elevator could take anybody's grain, but if the grain was suspected of being infested—which meant we had found that a station shipping infested grain from the west—anything more they would ship was now suspect. It had to be shunted out and moved to the proper elevator here in town. So we would be on the phone to the railway twice a day about, you know, "These are the list of suspect cars. Do you know where they're going? Have you got the latest one? I'll send you the numbers." But toward the end, I'd say maybe even the last eight or ten years, they just kept pooling the suspect cars. They didn't necessarily have to worry about them getting to the right elevator. No, I said that wrong. They weren't pooling cars here. They were actually sending the grain to their own elevators. So the railway didn't have to sort it, it was sorted anyway. What they're doing now, I don't know. Whether they pool their grain or whether it goes directly to certain elevators. But it didn't become an issue in later years because that had all been sorted out by who was accepting what grain.

NP: Did you have any connection at all in your position with the Canadian Wheat Board?

PR: Not too much connection with the Wheat Board. They did run a winter rail program for a couple of winters where they were sending trains directly through to Quebec City and Montreal, and they sent us samples to test them so that they would know by the time they got there whether there were insects on those trains. So we would get boxes of samples in the mail from some different stations out west—Swan River Valley, I remember that one. And we would run the samples and notify the Wheat Board—because they owned the grain at that point—which ones were infested. But other than that, we didn't have much to do with them. Of course, they would have to know if a ship was going out infested. They never got involved with the railcars other than those winter programs.

NP: What about connection with researchers? That's one thing that I found fascinating, among many other things in learning about Canada's grain trade, is just how pervasive the research is in support of the industry. The importance of that research. So did you have any--?

[1:25:21]

PR: We did some research. We had a Lindgren funnel trap one or two or three summers. It's a trap that you put outside, and it's got funnels that feed into one another, and we would catch things. Because they, out west, [laughs] I think probably at the University of Manitoba where they study stored insect pests, were concerned that they were flying around in the general populous. And they wanted to know if we could catch some. So we put them outside of track sheds where the grain was dumped running out of the cars. So theoretically the insect could fly away and land in our traps. And we would know if they were around Thunder Bay or if they were just Prairie insects. And we didn't find the ones they were looking for at all. So they stopped doing that after a while.

NP: Couldn't blame it on us, eh?

PR: No. [Laughing] Now, they're always trying to do research on insect resistance to pesticides and fumigants. We did research one year for—well, it's our entomologist in Winnipeg—on audio detection of insects. So we had a little machine and it had a pan. You pour the grain in it, and then you put an insect in it, and you can listen to it chew. So the theory was we were going to wear these headphones and listen to insects. [Laughs] But you couldn't hear it until there were about ten of them in there, and of course, one insect in a kilogram of grain is infested to us. We had to add ten of them to, I don't know, like 100 grams of grain to hear them. And then we could hear the elevator going up and down, [laughs] we could hear the doors opening and closing in the building. It was so sensitive. That never went anywhere.

They're also doing research on finding insect parts in grain. So you look for insect proteins. You grind it up. And we didn't test it here, but we were sending samples for that. If they can find insect protein in the grain, then they know there are insects so you

should treat the grain. But maybe it's already been treated and it's dead insects in the grain. So that, I don't know where that's going to go. It sounds almost like a DNA kind of thing. It could work. But if the insects are already frozen or they're dead for some other reason, you don't need to treat the grain. So I don't know where that's going to go. Yeah, they're all the time trying to find new things for insects to treat them, to detect them.

They're now looking at ones where it's a visual detection, where grain trickles out of a spout, and you look at these kernels going by. And if they look hollowed out, then you know that there's an infestation because something is living inside the kernel. And I think they're already using this in Australia if I'm not wrong. The people that sit at export watch the monitor as the grain goes by all day and they're looking for these hollowed out kernels. But the insects here, the rusty grain beetle that we find most of the time, doesn't hollow out the kernels. So this is not going to be helpful to us as far as I can tell. Yeah. There's all kinds of interesting stuff going on.

One neat thing, they found an old elevator that had closed out west. It had peas in it before it was closed. So there was some peas in a bin and a bit of dust. And then someone went back in to test the elevator or start it up again or something, and there were no insects in any of these bins full of peas or with the pea dust. And they were like, "What could this be?" They thought the place would be crawling with insects, having sat for several years. They've discovered that peas ground up will kill insects. So, here's something we could do is add pea dust to wheat, and maybe that will kill the insects.

NP: Hm! And then just use the cleaner to get rid of that?

PR: Yeah. Clean them all out when you're done.

NP: Well, that would be a nice ecologically safe way of dealing with it.

PR: There is already an organic method that you can use, diatomaceous earth. And it's a ground up, fossilized limestone. So basically, it's in things already, like toothpaste. It's sort of a grit. It's Sweet'N Low. And you can add that to grain. There is already written up details of how much to add per weight of grain. And that will coat the kernels a bit, and the insects will pick it up and they'll die. So that's an organic way to treat grain, and it's been done here in Thunder Bay.

NP: Now, speaking of organic, Western Grain By-Products is a certified handler of organic products. So do you know anything about how they would be--?

PR: Well, that's what they're using, the diatomaceous earth. So you can sprinkle it into wheat. You can also sprinkle it around the ground on the floors and stuff and insects will pick it up and die. It's not super great. I mean, if it gets wet it doesn't work as well. On the bigger, tougher insects it doesn't work as well. And it does take a bit of time because they have to pick it up, it has to absorb their waxy coating on their exoskeleton, and then they have to dehydrate and dry and die from it. So it's not as quick or as simple as chemical use, but there are ways to do organic treatment of grain. And again, cold weather treatment is one that's organic. No chemicals involved. So if you can wait till winter and kill them with the cold weather, that qualifies.

[1:30:40]

NP: And I can see why global warming would be a bit of a wake up call for the Canadian grain industry.

PR: Oh, yeah. And with insect resistance happening in Australia and the United States to the chemicals that are being used now. Yeah. We're looking for something else. They're looking at carbon dioxide. There's actually an elevator in Vancouver that was fumigating with carbon dioxide. I think they also tried nitrogen in the past. And of course, if you can starve insects of oxygen, the carbon dioxide will kill them. Now it doesn't move as well through the grain. You have to have someone there around the clock making sure that if you're putting it in at the bottom it's coming out at the top and at the right levels. You can't just put it in and walk away like you do with phosphene gas. So it's something that will work because it's organic and insects will never become resistant to it, but I'm not sure how viable it is.

NP: And who knows what will come up, right?

PR: Yeah.

NP: Because that leads me into my question which is about changes. And I think you've dealt with a lot of changes as you've spoken about the answers to other questions, but just to focus specifically on changes and allow you to add. Have you said everything about what major changes did you see over the years of your career?

PR: No. There's one other that really stands out for me is our region took over the running of the Churchill office, maybe ten or fifteen years ago. So that was quite interesting. I think it was sort of a make-work project for Thunder Bay people at a time when there wasn't that much grain coming through Thunder Bay, and they wanted to keep them occupied. But it turned into something, a whole different thing, because Churchill was so remote from us, and people had to be flown up there and kept there for the whole season. It was hard to deal with things. Anyway, we had to oversee the training of staff there to do the elevator inspections because

they weren't going to send us up every time, every two months to do an elevator inspection. Churchill's only open for about four months, but they want to fit in three inspections in there—at the beginning, the middle, and the end of the season.

So a couple people had to be trained, so we brought them out for that. Then they had to be trained to identify insects because they've got all these samples from their elevator inspections, also from their cars and their ships, and now they have to identify the insects. If we put the grain in an airplane and send the samples to us, the insects are going to die from being in the cold way up there in the atmosphere in the airplane. So it had to be done on site. So we took over the training of those people.

And also I went up there four different times, which is fabulous! How lucky am I to get to go to Churchill four times?—to help them with the elevator inspections. One time it was to install a camera. This was back in the day before smartphones where everybody could take a picture of something and send it to you. So it was a little camera that attached to a computer, and if they found an insect they couldn't identify, they would put it under this little thing that looked like a computer mouse and take a picture and send it to us so we could tell them what it was. Because they had to know. If the boat was loading at the dock, they had to know whether it was a secondary insect, a primary. Did they need to keep it there and fumigate it? So that was the unique thing about Churchill. None of the other elevators ever got that little camera, but they did. So that was pretty neat.

And then, of course, we had to do the staffing, the staff training. Everyone there had to be taught insect identification. Yeah, that was really a different change. And also, all of the ships going out of there were salties, and they were in cold temperatures. If you found an insect in the grain, what did you do? It was probably too cold to fumigate it. But on the other hand, everything died in the wintertime there. Nothing lived in the bins through the winter. It's so cold. They didn't even turn the bins. Everything just died. So you're starting fresh every year with Churchill.

NP: The elevator itself, was it pretty much like--? Anything that distinguished it from the elevators you were dealing with here?

[1:34:58]

PR: Yeah, it's very similar to the layout of one of the elevators here, other than it had a huge, long, sloping belt chamber—like a tunnel—up to a shipping gallery that was above the dock. It was a really big gallery. It had two storeys, and it was very long because I think two ships could park side by side at the same time. So there was a big area there for broken glass because, in the winter, of course, birds would fly into it and the glass was broken and it would be on the belts. A big area to clean. So that was really interesting the way that was set up in Churchill. Nothing like it here. But there are other elevators like that in Vancouver and I think Montreal with this big, long shipping gallery.

NP: Speaking of broken windows in elevators—first person who’s spoken about it—so in your inspections, that would be something you’d look at?

PR: Yeah.

NP: And that would be something they’d definitely have to deal with?

PR: Yeah. I mean, it’s not going to get picked out by a magnet. There are magnets, big square magnets that sit over top of a belt, and if anything metal is in the grain, *zoom!* It sticks to the magnets. So they’ve got that covered, but glass doesn’t. If it goes through a cleaner and along a belt, it’s going to get broken up. So, to me, it was really important. Yeah, so if there was any broken glass, of course, get it away from the belt as quick as you can. It’s mostly a problem in the spring when things have--.

NP: And replacing windows because its not long before the pigeons--?

PR: Yeah. A lot of them went to plexiglass.

NP: Oh, ok.

PR: Some of them put grating on the windows, like a big hood that covered the windows with a grate on the bottom. So they’re still getting airflow but there’s no glass involved. And that developed over time as improvements were made in the elevators. But spring was the time to find the glass and the dead birds and that sort of thing. Things that had accumulated over winter.

NP: Challenges. What would you say would have been your biggest challenge?

PR: My biggest challenge was supervising people. I had to do that in probably my last ten years there when I became the grain sanitation officer. I don’t think you’re born a natural supervisor. And they swear they can teach you these things, but there’s something about being natural [laughs] about it that I think I didn’t have. I tried to lead by example. Like I work hard, and I won’t ask you to do anything I wouldn’t do, but it was really hard to give negative feedback. Positive feedback is always easy to give. You know, sometimes you’d see things going off the rails, and you’d just almost rather do it yourself [laughs] than have to dress somebody down over it. So that was tough for me.

NP: What kinds of things would go off the rails?

PR: Jobs that weren't being done properly, adequately. People that didn't want to learn how to identify insects. Yeah, I know!

NP: Now why would you expect that? [Laughing]

PR: I know! It's part of the job. Just attitude mainly. You can't really change someone's attitude if they've got a bad one. I certainly wasn't able to do it.

NP: Yes. I decided not to go into management. [Laughing] Significant events. So anything that pops into your mind about significant events that happened in your time on the job or most vivid memories that you'll sort of take with you for years?

PR: There are the times at the farm shows out west, those will always be with me. Those were fabulous. There are a couple of tough ones. One was the year I took over as grain sanitation officer, and they hadn't replaced the person that left. So we were down a staff member, and it was the year from hell, as far as infestation goes. Whereas normally in a year, or say in a day in a normal year, we would find between say two to five infested cars in a day. We were finding 25! So each one of those has to be communicated to the elevator here. Each one has to go to Winnipeg. Winnipeg has to contact each of those elevators that shipped it. Then that generates more samples because now everybody has to send in more samples once they fumigate the grain. And it just escalated. It was beyond believable.

But we didn't get any extra staff because I was always under inspection, and they sort of thought, "If it's busy with inspection, it should be busy with us in entomology." And because it was a good year, and it wasn't busy with inspection, we didn't need any extra help. They never really understood that because the bosses our supervisors never worked in entomology, so they never really got it. And the entomologist in Winnipeg could sympathize, but he couldn't get more staff for us. His hands were tied. He was a technical supervisor. So that was a really tough year. We got through it.

[1:40:00]

But about two years later, maybe three years later, things got really bad in the elevators in one summer. And there was more than one elevator that was closed to shipping at this one time. It was near the end of the crop year, so there was a lot of pressure to ship and get certain grain out before the end of the crop year. But it had been a warm winter, and it had been a warm spring. It had started early. The insects were brutal by July! And we were finding terrible ones in the elevators, like, well, terrible. That's all relative. But there were so many that the elevators were getting really bad scores. And you get a few bad scores like that in a row, and suddenly you can't ship grain anymore. You're not allowed to. These are the rules. And if it gets really terribly bad, you can't receive grain from the west. So you're shutting down their operations. You know, several of them were in the situation where they

couldn't ship grain anymore. So they have to treat the places, and they have to clean them right away. And then we have to reinspect them, and they have to pass that inspection before they can ship grain. And we do this in conjunction with the CFIA when it gets to this stage. So there are a lot of people involved at different levels.

So they would get a bad report, and they would say, "Okay, I've got a ship coming tomorrow. I need you to come in tomorrow morning and check this because we're going to clean it all night. Our staff's going to be here all night cleaning." Well, if you spray, we can't come in for 48 hours because we know it makes us sick. This was the reason we started this 48-hour business because we were going in too soon, and we were getting sick. And it was [laughs] because there was so many of them all at once, and everybody had ships coming, and everybody wanted us to come and check it and get back and write the report—it was just crazy. And it was very difficult, and people were short-tempered, as you can understand. Time is money. The ships are sitting there waiting and there's no grain allowed to go on them. That was quite a year.

NP: Now, what was the frequency of having to actually shut down shipping out?

PR: It was rare. That might have been the first time it happened with me. No, there was one other one, way back there. Because they were basing everything on what had happened in that case. So once way back in my history and then three of them that summer.

NP: Hm! And ever a situation where they could not receive?

PR: No, I don't think it ever got to that.

NP: Did you have to take the brunt of those score cards?

PR: Yeah. Yeah, I did. I mean, our supervisor was in Winnipeg, but unfortunately that was the month he took vacation. [Laughing] And also with the CFIA, his counterpart was on mat leave or paternity leave or something. So we had nobody to go to. We took it to people that were covering for these other people, but they didn't feel like they could make decisions about things. It was really tough. And I could sympathize with the elevators, I mean, I was their go-to person. And I would say, "I understand it, and here's what you have to do. And as soon as you get it clean, we'll come back in. And you know what you need to get there." And then you'd go back in, and you'd find more insects. It's like, "Oh, no!" I really was hoping there was going to be no insects this time! [Laughs] So you--.

NP: Was there ever--. Sorry, continue.

PR: So you were delivering bad news all the time.

NP: Was there political pressure?

PR: They actually did get a hold of somebody higher up in our organization, yes. Some of them went above us to try and get things fixed, but I give our staff credit. Our supervisors, they stuck by us and backed us up. I mean they understood that time was money as well. I think some of the regulations were just a little harsh and probably needed a bit of tweaking. Because if you find certain insects in certain areas, you know, closer to the grain it's worse than if they're further from the grain. A lot of little things can go wrong all of a sudden, and you can just tumble into this bad score. So although it wasn't, probably, any kind of a hazard to the grain or anybody at all, things went south really fast.

NP: What are you most proud of?

PR: I am most proud of my ability to identify insects. I just loved that. The microscope--. I miss that microscope so much. You can't understand how anybody could like a microscope so much. [Laughs] But just sitting down with a new insect, get out the big book. Does it have this feature or that feature? And then you'd find an insect that's got something you've never seen before, like grooves on the inside of their head where their antennae tuck away so they can crawl through things. And you read about it and then you go, "Wow! I see it!" Yeah. That was awesome. And I think I was pretty good at it, honestly.

[1:45:18]

NP: How many different kinds of insects would you come across?

PR: Well, we were supposed to know how to identify about 50 different ones, but we ran across all kinds of strange things. Like I was telling you about the fleas. You'd identify them right down to are they a bird flea or a squirrel flea? Just, oh, I guess we had a collection there that's probably up around 140 insects. Now, some of those are things that people brought in like bed bugs and ticks and unusual things, but yeah, that's what we have in the collection there.

NP: And what was the most unusual bug that you found in a grain situation?

PR: Oh, gosh. I don't know. There are these giant water beetles that are fairly common. Everyone would say they've seen one, but they were about three inches long. We see them in the elevators around the water sometimes. So that's pretty much a shock when you see an insect that size in Thunder Bay. You don't expect to.

NP: And in grain?

PR: They're in the water, actually, trying to catch other insects, but sometimes they fly and they land on the dock or inside the elevator. We've found them right in the basement. So they're not eating the grain. They're trying to eat water-type insects.

NP: Yeah. Any questions I should have asked you that I didn't?

PR: I don't think so. You've asked the highlights and the lowlights. The government was good enough to send me for training at Lakehead University. They paid for two courses that I took, which was really good of them. Very early on, I think it was the second year I was there. I took general entomology, and they gave me time off too to go and do that. And I learned so much there that that really helped me with the insect identification for the rest of my career. And I also took taxonomy, which helped me almost not at all, but was still interesting.

NP: Taxonomy?

PR: Yeah, it's the naming of insects and how you name the species and genus and families. But I learned so much about biology through those things and also just working with David Hearn in the lab, because he had a degree in biology. He was really generous with his knowledge and advice.

NP: Did you ever have any memorabilia, pictures, that--?

PR: I do have a few, yeah. Are you wanting some?

NP: Yes! Now, you don't need to donate them. You can lend them to us, and we can scan them, if you like. And in fact, that's probably what I would prefer. So, yeah.

PR: You know, there was a grain inspector way back when I worked in the protein lab when I was doing the run across the waterfront, and every time I went there he'd give me another photograph of a ship. And I must have had 50 of them, but I do believe I threw those out. [Laughs] I know! I thought, "What am I going to do we these?"

NP: Arggh! [Laughing] So what are some of the things that you do have?

PR: I'm not sure. I used to have some badges from the Farm Progress shows and such. I might have tossed them out too in a cleaning fit one day. But I have a few pictures of us in our coveralls and the Berlese funnels.

NP: Good.

PR: I might have some of those.

NP: Now I do have--. I went with Rick Bevilacqua to look around in the bowels of the basement of the Canadian Grain Commission office, and we identified some things that were in the basement that were surplus. And we put in a request to head office to have them donated to our cause in case we do get a centre set up. Is there anything that you know of that is hanging around the CGC office that is surplus that we should look at--?

PR: Well, there is a set of reflectors that the Berlese funnels go with. We had to take them out of business because they were made with metal tubes and the wires ran in the tubes, and we couldn't say that they were all perfectly safe, electric-wise. So there's 12 of them. It's like a black metal frame with 12 reflectors. Now, if someone would give you 12 funnels to go with it, or even one, you could put that as a display.

NP: Were there excess funnels sitting around?

PR: Yeah, we do have some extras there in the shelves, yeah. Whether they'd want to part with them I don't know. But they'd probably give you one.

NP: Downstairs?

PR: No. They'd be in the entomology lab. They'd probably give you one.

NP: Yeah. Ok. Anything else?

PR: There might be microscopes down there.

[1:50:02]

NP: I think there are, of different versions.

PR: Yeah. We sent all of our used ones to Churchill. When we would get a new one, we'd send one up there. Um. I can't think of anything else. We didn't have a lot of equipment. Just really the funnels and the microscopes. It wasn't a heavy-on-equipment kind of business.

NP: Yeah. Good. Well, that brings us to the end of--.

PR: Oh, I have more I want to say.

NP: Ok! Good! [Laughing]

PR: I just thought of something. Training. I gave a lot of training over the years because I became the resident expert in entomology. So when people needed to learn about insect training and also some of the elevator stuff, I ended up doing it. So I trained the people in Churchill. We made up a national training program—I can't take credit for that. The Winnipeg office made it up, but we presented it here, portions of it, to the inspectors. And often in the winter, we would run everybody through some of the training. So it would be like 50, 60 inspectors would come in and we would show them how to shake insects out of the grain, and how to identify them, and what they're looking for, and put them under the microscope. "Now, what do you see?" So that was awesome.

We also went into some of the schools back when we had Ag in the Classroom. I remember being at Gorham & Ware. We went to Pizza Day. But we would get every class in the school coming through, so we would have insects, and they'd be crawling around a camera that would show them up on a TV screen. That is cool. I mean sometimes you get people that go, "Ew! I hate insects! I'm all scratchy now! They're creepy crawly." You always have those kind. You always have the ones that aren't too interested in it at all. And then there's always one or two little keeners, often little boys, that are just in love with these insects, and they can't get enough of it. And they ask you all these questions. Awesome. So fun to do this.

And we would also train the elevator staff in the winter. There used to be a training course for them that the Grain Commission put on, and it was--. There was a beginners one and a more advanced the next year. So we always came in and did several hours with them about training on insects.

NP: I'm going to ask another question, and then I want to ask you about tying something together about what you've said here. What is your sense of the role that you played in Canada's success as an international grain trader?

PR: It's to do with the quality of the grain. The no-insects sells grain. People know that they were buying a good quality product. It wasn't going to walk away from them in their warehouses unless they put insects into it. They knew when they saw "Canada" on that grain that it was top quality. They may have paid top dollar, but they were getting top quality grain.

I was walking down the beach in the Dominican Republic one day, and they had some sandbags on the side. And there was a bag from United Grain Growers, a bag of pinto beans or something full of sand now. But there it was. "United Grain Growers, Product of Canada, Pinto Beans." That was cool. So I know where some of them went.

NP: Yes. And we've had people--. A friend of mine who's in Winnipeg, her hairdresser was from one of the Caribbean countries, and same thing. She remembered the logos on the bags of the--.

PR: Product of Canada.

NP: Product that her parents would have been using. It really does sort of make you feel that what you're doing is important and recognized.

PR: Yeah. And it's a global thing. It's not just Thunder Bay and Winnipeg and maybe Vancouver and Montreal. It is global. You're feeding the world.

NP: Mmhm. Now, our little grain centre. I was so pleased to have you talk about the training, because I think there's a lot of what we want in the grain centre—as we've been told by the consultants who did a report for us—that history's nice and important, but it doesn't bring people in on a regular basis. But science-related programming will.

PR: Hands-on stuff.

NP: Hands-on stuff. So I'm hoping that you might consider helping us with that if we move forward.

PR: Sure. I don't know how much I know about it, but yeah.

NP: Well, just the fact that you know these things exist and that there's visuals there that--.

[1:55:02]

PR: You know, we had a little Berlese funnel made up, which would work if they'd give it to you. It's in the cupboard in the entomology lab. And we used to take it to demos and shows. And it was one reflector in a box. It had a plug in so you could plug it in and put the bulb in, and it had one funnel that went with it.

NP: Do you know who your replacement was? Is?

PR: They haven't replaced them, but I would suggest you talk to Shane Powell.

NP: Oh, ok. I've met Shane.

PR: Yeah.

NP: All right.

PR: Don't talk to Mike Cain. If he answers, ask--.

NP: Ok.

PR: Ask to talk to Shane.

NP: Ok, I will do that. Shane's been there for quite a while.

PR: Yeah.

NP: Yeah. Thank you very much. It has been a fascinating interview, and you're an interviewer's dream.

PR: I have one other thing to say, I just remembered. [Laughing] In the long run, I'm not sure that it was good to recommend all these chemicals on grain. I almost feel, because we have so few insects in grain, I'd rather eat an insect or two than eat the chemical. But I don't know if that's something that you want to say here. [Laughs]

NP: No, I think that is a good point because sometimes because people can use a product, and it exists, and they're looking for something new. Things like the safety gear that becomes more unsafe than the situation [laughs] you're dealing with. You really have to think about it.

PR: And the chemicals are fast and easy, and you can say, "I treated it." And that looks good.

NP: Yeah.

PR: I think you asked at one time if it was overkill, in one of your questions way back when. Yes. I personally think it's overkill, and I would rather eat a few insects than have chemicals.

NP: Yeah. Now, I guess married to that though is that it's not so much even eating the insect that's the issue, it's their ability to reproduce and damage--.

PR: And they eat the grain, yeah. And you know, it was not my mandate to say what I felt about it. I was told what I had to say and what I had to do. It was all written out there. There was not much room for subjectivity. It had all been set up, especially with the elevator inspections, to be objective. "If you see this, then that is so many points. And if it is more than six feet from the grain flow, it is less than so many points." You know? It was set up so that we wouldn't be subjective about it.

NP: Mmhmm. To solve a problem that existed.

PR: Yes.

NP: But very few solutions to problems don't create their own problems. [Laughing]

PR: Yeah. Oh, you got it. Absolutely right.

NP: Well, thanks again.

PR: Ok. You're welcome.

End of Interview.

