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Description: **2755 Roger Hooke,** interviewed by Adam Lee Cilli, November 5, 2013, in his office in the Bryand Hall at the University of Maine, Orono. Hooke talks about the beginnings of his career in geology and glaciology; conducting research in the Arctic, with its attendant dangers; his beginnings at the Climate Change Institute; changes in the CCI over the years; and the reality of anthropogenic climate change.

Text: 9 pp. transcript
Recording: **mfc_na2755_audio001** 61 minutes

Related Collections & Accessions

Restrictions

Formats Included Document: Original= .docx, Master= .odt, Access= .pdf; Sound: Original= .mp3, Master= .wav, Access= .mp3

Notes

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Narrator: Roger Hooke

Interviewer: Adam Lee Cilli

Transcriber: Adam Lee Cilli

Date of interview: November 5, 2013

ABSTRACT: This interview took place in Roger Hooke's office in Bryand Hall at the University of Maine in Orono. In the first part of the interview, Hooke discussed his interests in geology and glaciology and described some of his experiences researching in the Arctic. He remembered what day to day life was like in the Arctic, and he shared several stories in which he faced danger and physical hardship. Later, he reflected upon his involvement with the Institute and considered how it has changed over the past four decades. At the end of the interview, he weighed in on the so-called climate change debate.

Note: This is the transcriber's best effort to convert audio to text, the audio is the primary material.

Adam Cilli (AC): Today is November 5, 2013, and I'm here in Roger Hooke's office to interview him about his experiences with the Climate Change Institute. I'm wondering if you can tell me how you got interested in studying geology and glaciers.

Roger Hooke (RH): Well, I took a basic geology course in college, in probably about 1959. And I was already fairly heavily involved in outing club activities, and I met a gal who became my wife, who was majoring in geology at another college. And it sounded like something that I should find out more about, because I liked being outdoors and I liked mountains and hiking and so forth. So I took this course. The format of the course was to have professors from different sub-fields of geology give two, three, four lectures at various times during the semester. It was a two-semester course. And I was particularly interested in things John Miller had to say. He was a geomorphologist; a student of landforms. And he was talking about rivers. So, one day I found myself on the top floor of the geology building and I saw his office, I saw the door was open, and I went in and said "what do I have to do to become a geologist?" That was about it.

AC: Just like that?

RH: Yup.

AC: So, from that moment on you knew you were going to pursue a masters and PhD?

RH: I never got a masters.

AC: You went straight to PhD?

RH: Yeah. I wouldn't say from that point on, but pretty much. At the time I was in engineering and applied physics, and he recommended that I continue in engineering and applied physics. And I'd just take as many geology courses as I could on the side, and then go to graduate school in geology, which I did.

AC: Can you tell me a little bit about your graduate experience?

RH: Well, I went to work with a fella by the name of Robert Sharp in California. And the two things that stand out about that are first that he was interested in desert landforms, and I was pretty naïve about deserts when I went out there in 1961, but I learned something about them pretty quickly and came to really like the desert environment. And I developed quite an interest in desert landforms. And a second thing is that I anticipated doing things with fluvial processes, and so I got a minor (so to speak, I don't think they called it that) in hydraulics, concentrating on sediment transport. So that was a second aspect of that experience. And the third was that Sharp's technique of teaching involved a lot of… it was a Socratic technique: asking questions and letting people sit and think about a problem in class, perhaps five or ten minutes with nobody saying anything and everybody thinking about it. And then he'd interject a hint or guiding additional question. So, I don't know whether I should say he taught me how to think, but he certainly enhanced my ability to think about problems. So those are the things that sort of stand out about [my] graduate experience.

AC: In what year did you end up graduating?

RH: '65.

AC: And what did you do after that?

RH: Went to the University of Minnesota, and I was there for 34 years, and I retired in 1999. Throughout the 90s, and perhaps even before that, I was spending quite a bit of time in Maine, because my family heritage is Maine. I was brought up in New Jersey, but before that, the family has owned property in Maine for 200 years, for vacation in Castine. It just seemed like what we wanted to do, was be back here (my wife and myself). So, the University of Minnesota was on a quarter system, and throughout the 90s I was able to spend the fall quarters in Maine, and then go back and do the winter and spring quarters in Minnesota.

AC: You did you research here?

RH: Yeah, I was mostly writing and going over fieldwork I had done over the summer. But as a result I've been a resident of Maine for over twenty years.

AC: Do you still return to Minnesota?

RH: No.

AC: So, you're here full-time now.

RH: Yeah.

AC: What kinds of research did you do when you were in Minnesota?

RH: Well, the year I finished my doctorate I was asked to participate in a research project collecting ice cores in Greenland. And this was a project under the direction of Clair Patterson, and Clair Patterson was a key person in showing the importance of the increase in led in the atmosphere (largely from tetraethyl led and gasoline) and his work was quite important in having tetraethyl led banned from gasoline. His approach was to sample ice in different ages and then determine how much led was in the ice, and so we collected samples as old as 5,000 years or so, and various times in between. And during that summer he gave me some time off to start a project of my own, at the edge of the Greenland ice sheet. I was interested in the formation of moraines at the edge of the ice sheet. Because the going hypothesis for the formation of these moraines did not seem mechanically sound to me, so I

wanted to put in some stakes and measure ice string rates and try to see what in fact was going on. And then when I got to Minnesota I did a certain amount of winter research out at the California desert and did summer research out in Greenland, and after a few years the National Science Foundation (or the reviewers of proposals) seemed to think more of my glacial work than my arid region work. So I basically slipped into doing glaciology for thirty years. I worked about 15 years on an ice cap called Barnes Ice Cap on Baffin Island. And then I worked for another 15 years or so on a small glacier in northern Sweden, associated with a research station called Carfula.

AC: I'm curious about the human process of doing research on a glacier. What was the longest stint of research for you out there?

RH: Probably a couple of months.

AC: So, it was the kind of thing that you needed to bring all the gear to survive.

RH: Well, Barnes Ice Cap was that way. We were 400 miles from Frobisher Bay (which is now called Ecoluit), and about another 100 miles inland from another settlement called Clyde River. So, we were pretty isolated. We had only radio contact, and then we did have to take everything with us that we needed for the time span that we were there. As well as spare parts and ingenuity when something went wrong, and so forth. The time I spent working on the glacier in Sweden, we were at a very well-equipped research station, and the glacier was a 45 minute walk from the station (and visible from the station). We had helicopter support whenever we needed it (as long as we could afford it), so all of the food preparation was done by staff at the station. So it was a pretty plush situation.

AC: Barnes Ice Cap. Is that in the Arctic?

RH: Yeah. Both of these stations were north of the Arctic Circle. So we were in continuous daylight.

AC: So, at Barnes Ice Cap you had to prepare your meals?

RH: Yeah.

AC: What would be a typical meal that you ate on an icecap?

RH: Oh, gosh. I did breakfast in order to get the crew up. And we were normally I suppose an average of 3 people (sometimes 4, occasionally 5, sometimes 2). Just to get things going at the beginning of the day I'd get up and get breakfast going and roust them out. And we alternated between pancakes and hot cereal. One day pancakes and one day hot cereal. I guess we had bacon and eggs, too. And then lunch was just kenecteput, hard crackers and cheese, and various spreads and things like that.

AC: Canned goods, maybe? That you would spread over crackers?

RH: Oh, I've forgotten now. Maybe some sausage.

AC: So when you got up in the morning you had to build a fire in order to prepare the hot cereal?

RH: No, we had a tent and a Colman Stove. So, it was a tent that was close to the size of this room in floor area. Then the sleeping tents were separate from the cook tent. Then the

dinners, you'd have… you could take in fresh food, cause it was cold and it would keep. We took in a fair supply of steak, porkchops, and various other things.

AC: And what would you do, just dig a little hole in the snow and just put stuff there?

RH: Yeah, basically.

AC: How cold did it get?

RH: Well, if you buried something in the ice it would stay cold. If you buried something in the snow, the snow would begin to melt and it would warm up to freezing point. But on occasion I was in there, maybe as early as April but probably not until May, and there were times when it got fairly chilly. But for the most part it was only a few degrees below freezing up to ten degrees above freezing. So you put on your long johns when you started and you basically didn't take them off until you got back, unless on occasion people would arrange some kind of a bathing operation. We all had down jackets and things like that.

AC: Were there particular physical hardships that you can remember?

RH: No.

AC: Did you ever have any close calls when you were out there doing field research, moments where you or someone in your crew almost got hurt?

RH: Well, I was going with one guy to do some work, heading off from our base camp and headed for a place that was a day's walk away. (We were planning to stay two or three days or something.) And I stepped across a melt stream into a patch of snow on the other side of the melt stream. The patch of snow didn't stay attached to the ice; it slipped into the stream and I went in. And that was one of the scariest times for me. But I had a pair of skies attached to the top of my back and they bridged across the stream and so I didn't go slithering on down the stream and I didn't get quite as wet as I would have otherwise. It wasn't a very big stream.

AC: So it wasn't a danger of getting swept off in some stream; it was more about being submerged in cold water?

RH: Well I remember thinking that I might not come back from that experience. If I hadn't across my pack and gotten caught that way, then there's a question of how far I would have gone in the stream, what the stream did at the end, how battered I would be when I got there, whether I could find some way of stopping myself because the ice is damn slippery. Things like that. So that was one. There was another time when…and that wasn't a very deep stream, maybe a little over a meter deep. But it was still slippery and wet. Then there was another time when I was a crossing a… I got on the wrong side of a melt stream, and this one cut three or four meters into the ice and was rather more vigorous. And I did not want to walk way back up the glacier to try to get around it, and I knew that if walked down glacier I'd wind up on the wrong side of the stream, at an ice cliff which I couldn't get around. And so eventually I found a snow bridge and lay down on my belly and crossed over it. And, well I'm here to tell the tale. [laughs] So, I was grateful the snow bridge held.

AC: And if the snow bridge had collapsed, how far would you have fallen?

RH: Three or four meters. And there was a pretty active stream at the bottom. On Barnes Ice Caps, there are very few streams that went out and then went down (what are called moulins).

On Greenland there are some quite larges streams that do that. And there are a certain number also on the glacier I was working on in Sweden. These things, just looking at them, terrify me. I see a picture of one of these things, and it really sort sends the chills.

AC: This is essentially, what? A waterfall on a glacier?

RH: Well, water running on the surface of a glacier and then plunging into a hole in the glacier.

AC: Oh, plunging into a hole in the glacier.

RH: Yeah.

AC: Yes, that sounds ghastly.

RH: Yeah.

AC: And there's no knowing where that would eventually lead you?

RH: Nope. [laughs] Chances are, in Greenland, you wouldn't make it out to the bottom. You'd get hung up someplace along the way. But you wouldn't know it.

AC: Had you ever seen those yourself?

RH: Oh, yeah. I forget whether I ever saw a big one in Greenland. But I've seen enough small ones, that would still be dangerous.

AC: And what were those called again?

RH: They're called moulins.

AC: What about instances in which equipment broke down? Can you think of any examples where that caused problems?

RH: It always caused problems. [laughs] We had a hot point to drill in the ice and every once in a while a leak would occur and that and we'd have to take it apart and fix it. We had a set of slip rings on a cable reel, and they were not commercial. They were manufactured by a technician in our department, and they didn't hold up. And one of my assistants, who is a very imaginative and ingenious guy, managed to make a set of slip rings to go on our cable reel. The snowmobiles were always breaking down; somebody had to be able to fix them. So I tried to take with me people who were a little bit more familiar with small engine repair than I was. There was one time when I was with another guy and we were ten kilometers from camp; had been drilling a hole during the day. And I told the other guy to go back and get supper ready and I'd close up and follow him. And when I went to start my snowmobile the magneto had gone out on it, so I couldn't start it. So, I figured, well, I'll lie down, roll up in the tarp, and wait for the guy to come back, because eventually he will. Then after a little while I said, "this is boring. I guess I'll just try to walk back and meet him along the way." And so I started walking and I hadn't had any food since lunch time. I had a thermos with a few noodles at the bottom of it, but no way to get the noodles out, because they were stuck to the bottom. And then I realized that if I took my tape measure, it had a hook at the end and I could scratch the noodles out. [laughs] And that provided a little bit of nourishment. I ended up walking all the way back. And what had happened was that this guy, who was not very clever, had driven his snowmobile into a slush puddle and hadn't been strong enough to pull

it out. And so he had just gone to bed, rather than coming back to try to find me and maybe bringing some food when I didn't show up.

AC: So you eventually walked all the way back?

RH: Yeah.

AC: And how long did that take?

RH: I suppose I got back about 2 or 3 in the morning.

AC: And you started out at what time?

RH: Oh, six.

AC: Really, and that was after lying down for an hour or so?

RH: Well, I didn't lie down for than 15 or 20 minutes.

AC: So you walked for hours.

RH: Yeah. The main thing was I was hungry. It was good weather and good walking. So that wasn't any problem, but I was weak and tired.

AC: And this was when you had 24 hours of daylight?

RH: Yeah. And it may not have taken me that long to get back, but it was probably about 15 kilometers.

AC: So, I image that he was not your favorite person when you got back?

RH: Well, I felt that he could have acted a little more responsibly. He would not be the person I would want to be with in an emergency. Let's put it that way.

AC: So, other than the Arctic and the deserts in California, where else have you done research?

RH: Well, I'm planning with a few problems here in Maine. I had a sabbatical year in Sweden in 1972, during which I worked in a laboratory there. And that was a problem on meandering rivers. I had another sabbatical also in Sweden when I worked on a problem of glacier sliding. I think that's pretty much it. Barnes Ice Cap, northern Sweden, southern California, the main places.

AC: So, all those years you were at the University of Minnesota, had you corresponded with or done research with members of what was then the Quaternary Institute?

RH: When I was in Maine I would frequently stop and talk with Hal Borns. But I didn't have a lot of contact with the other people here.

AC: But you knew about the Quaternary Institute?

RH: Oh, yes. Oh, yes.

AC: Did that seem to be well-known, even as far west as Minnesota?

RH: In fact I expected to be offered a job here but it never came through. [laughs]

AC: So, at some point Hal contacted you and said, "we're considering offering you a position"?

RH: Well, it was almost that way. I had a chat with him and then when back to Minnesota expecting to get an offer from him within a month or so and never heard from him.

AC: So, how did you end up becoming a member of the Institute?

RH: Just by being pushy. I talked to people when I was here. Talked some to Terry Hughes…. And I basically asked them, "can I have an office and pursue some projects, [and] be a guest in your department for a quarter?" Because they knew me from person, and because I had established myself as a geomorphologist/glaciologist, they were willing to have me.

AC: And did that benefit you or your research, in terms of access to certain resources?

RH: I wouldn't say so necessarily. The resources that I needed would have been available either here or Minnesota. Back in the 90s I began doing some field work in Maine, but I wouldn't have done it had I not been here. I think the principal benefit was being able to listen to the seminars in the Quaternary Institute and making friends with people here, and then having no committee responsibilities and things like that, so I could remain focused on whatever I was doing.

AC: Have you had graduate students in this program?

RH: No.

AC: Just at Minnesota.

RH: Yeah. I've been on graduate student committees, but I've not been the principal adviser of any of the graduate students here. I do some teaching, pro bono teaching. So I get to know a certain number of the graduate students.

AC: What year did you become a member of the Institute?

RH: Well, I was an adjunct faculty member back in the early 90s, and that I think was one of the things that the Institute has every year, is a field trip (paid entirely by the Institute) for all members of the Institute and their families. Some lawyers have gotten their dirty little fingers into recently, so now we can no longer take our families with us, but the trips are still run. And they used to be a little bit more elaborate than they are now. But I was invited on those trips back in the early 90s. I was invited on those trips, back in the early 90s. Once I got here and wanted to submit research proposals I had to become a research professor. And so they promoted me without any particular problem.

AC: Have you participate in committee meetings within the Institute itself?

RH: Yeah. I go to the faculty meetings, and I go to the School of Earth Science faculty meetings, and I go to the CCI staff meetings, just to keep track of what's going on [and] be familiar with what's going on.

AC: Since you've been here have you done research with any other members of the Institute?

RH: Sort of indirectly. I'm working on a paper now that I'm anticipating will have three other members of the Institute as co-authors. I co-PI with Terry Hughes on a couple of

proposals, one of which was funded. We didn't write anything jointly from that. And I've got a couple papers out just this year with students who are co-authors.

AC: What was the proposal you and Terry Hughes put together?

RH: It had to do with Byrd glacier in the Antarctic, and I don't remember the details now.

AC: Your perspective on the Quaternary Institute, now the Climate Change Institute, is sort of as an outsider. From your vantage, how do you thing the Institute has changed since it first formed in the '70s?

RH: It's grown. I think its size now and perhaps the nature of the leadership is such that it is not quite as (I don't know whether friendly or congenial is the right term) but I sort of had the impression that when it was a little bit smaller and everybody knew each other better, and almost everybody was participating in these fall field trips, that it was a little bit more closely knit. Now the major expansion that occurred when the present director was hired and brought with him quite a number of people involved in glaciological research, all of a sudden the glaciology component of the Institute quite overwhelmed the rest of it. We went basically from one glaciologist and two glacial geologists, amongst maybe 15 or 20 people associated with the Institute, to a point where the glaciological component is now between a third and a half of the Institute. I think that's one of the key changes that I've observed over 40 years. I was not very closely associated with the Institute when some of the other people were directors. I know the original director and I sort of had a feeling for his management style and the status of the Institute, and I know it now under its present leadership.

AC: Is the Institute more widely-recognized now? Does it enjoy greater acclaim now than it did?

RH: I think so, yeah. The glaciological component particularly is very widely known and respected. I think it has much more public exposure, too, than it used to have.

AC: So, for undergraduate students who were interested in studying glaciers, if they were to sit down and ask, what are the best places to go to study and learn about glaciers, would this Institute be on that list?

RH: No question.

AC: Above some of the elite schools?

RH: Yeah.

AC: I would say most areas of glaciology we should be considered number one in the country. We aren't that strong in glacier mechanics, and we have competitors in glacial geology and understanding how glaciers make landforms, but in terms of ice core work we're number one.

AC: I see. Shifting gears a bit, it seems that outside the scientific community, particularly in American political culture, the issue of climate change is still very much up for debate. I'm wondering if you can comment as to why that might be the case.

RH: I just listened to a talk by Richard Harris, a reporter for National Public Radio. And he had some interesting statistics about pole numbers about where climate change stood on people's concern about things. And it was sort of near the bottom. My feeling is first that a lot of people are, particularly politicians and business people, are more worried about their pocket book during their lifetime than they are about anything else. And they also don't have

anywhere near adequate education in science, and so they put on blinders and simply denounce the problem. I think another problem is that people are more worried about things that are happening now or that will happen next year, particularly politicians are more worried about what will happen in the next elections, so they don't think as far as twenty or thirty or forty, fifty years ahead and see the problems that are forecast. There's also rather too much of a feeling that somehow technology will solve the problem. And so you have a dichotomy of people trusting the scientists but not trusting the science. There's a term, geoengineering, which is a perfectly good term, a perfectly good profession, when it comes to working on problems of building tunnels and that type of thing, working with the land in some way. But it has also become used for people, our ideas, of ways which to foil the natural climate system, like putting a whole bunch of silvery strips up into the stratosphere so that it doesn't get as hot. That's ridiculous. My mentor, when I worked in Sweden, had a wonderful line. He had a slide show that went on automatically with a voice-over tape that went with it (because a lot of visitors would come to this research station, so it was a bit of a nuisance; we'd take the visitors up to the lecture room and set the slide show going.). And there's one slide that showed a picture of a horizontal snow and a snowmobile and some guy sort of huddled down, and the line was, "there's not much one can do about the weather, and thank God for that." [laughs] So, I think that that in a way applies now. But it's a combination of lack of adequate science education and more concern about the here and now and not about the future, and believing that technology can somehow solve it, and that combination of things.

AC: Well that's all the questions I had for now, but before we conclude the interview I do want to give you a chance to add something that I didn't think to ask you about.

RH: Well, I'd say that my principal concern is not climate change; it's population. And I think we're right now seeing the tip of the iceberg poking through, in terms of the sorts of unrest that will come as the population will continue to increase, as the population continues to increase. And people can't find jobs, they can't make a comfortable living, they blame somebody else. Somebody who has a lot of money can then buy them to shoot a gun or do something else. So I think that's one of the things that's responsible for a lot of the unrest in the world. We say it's the Sudanese against the Shiites and things like this; look at all the people in Africa who can't make a decent living and are trying to flood across Europe. If you have a resource base and that resource base (whether it's soil, iron, copper, or oil), that resource base can support so many people comfortably. You start increasing the population beyond that resource, that comfortable level, and you can't support the people at the same level. You either have to decrease the standard of living for everybody, or you have people in poverty. Or whatever. And we have the problem of agriculture, of how are we going to feed all these people. We can't feed everybody we've got now, decently. Some people will say, "well, it's a distribution problem," and that's part of the problem. But somewhere in the neighborhood of a third of the world's population doesn't get as much food as they would like. And the amount of land that is available to grow crops is limited. You know, earth isn't infinite. And land is being degraded by agriculture. Fertilizer, you need potassium, nitrogen, and phosphorous. You have all three in fertilizer. And there's a lot of nitrogen in the air, but it's not easy to get out. Potassium isn't too much of a problem. Phosphorous is. The major source for phosphorous for a long time has been guano…and when you use up the phosphorous, it's like using up the oil. How are you going to fertilize? So, I think that's where the big problem is, and climate change is just going to exacerbate.

AC: Alright, well, thank you for your interesting perspectives. I'll stop the recording now.