



Ken Hedberg Oral History Interviews, October 20, 2011

Title

“Reflections on People and Places”

Date

October 20, 2011

Location

Valley Library, Oregon State University.

Summary

Hedberg's fourth and final interview begins with his perspective on the courtship and donation of the Pauling Papers at Oregon State University. He also shares his memories of hosting the Paulings in Corvallis.

The interview next shifts gears to Hedberg's recollections of a variety of other colleagues. He begins by recounting his interactions with Clara and David Shoemaker, and then focuses on his connection to Norway and Norwegian scientists, including Otto Bastiansen, Odd Hassell and Kolbjörn Hagen.

A significant portion of the session is devoted to Hedberg's thoughts on numerous figures important to the history of the OSU Chemistry department. In addition to the Shoemakers, among those discussed are John Fulton, Francois Gilfillan, Earl Gilbert, Wendell Slabaugh, Bert Christiansen, Vernon Cheldelin and Carroll DeKock.

The interview winds up with a discussion of memorable interactions with graduate students and post-docs, a unique trip to Japan, and particular points of pride looking back on a long life.

Interviewee

Ken Hedberg

Interviewer

Chris Petersen

Website

<http://scarc.library.oregonstate.edu/oh150/hedberg/>

Transcript

***Note: Interview recorded to audio only.**

Chris Petersen: O.K. So we are going. So, as in the past, if you could go ahead and introduce yourself and give today's date?

Ken Hedberg: My name is Kenneth Hedberg and this is the twentieth of October 2011.

CP: Today, I would like to start with you telling us about the role that you played in the Pauling Papers coming to Oregon State.

KH: We talked about that last time I guess. Did we or did we not?

CP: I don't think so, no.

KH: Well, I have an uncomfortable feeling I'm repeating myself here, but maybe not. The effort to bring the papers here began when I sat at the head table with Ava Helen Pauling during a meeting in celebration of the awardee of the Pauling Award which had been newly set up by three sections of the American Chemical Society. She told me at that time that people—several universities and other institutions were after Linus' papers. But she said he didn't want them to go to these Institutions. She said they didn't want all of his papers and the University of Pennsylvania—I seem to remember—was one of them, as well as Caltech and Stanford. They only wanted selected portions, but he wanted them all together. So she said to me that she had felt for a long time that the papers ought to come to Oregon State. Now this was before Pauling's relations with Oregon State had been repaired and she went on the remark that she'd been talking to him and she was trying to persuade him that she should let bygones be bygones.

CP: About when was this?

KH: That was—

CP: About when was this? What year?

KH: Oh, gosh. It was the early 60's. I'm sorry, my memory is hazy on these exact dates, but anyway some time there. So I conveyed this information when I got back to the institution to the President of the university who at that time was Professor Jensen. He called me and asked me if I thought that Pauling would accept an invitation to come to the university and speak. I said, 'well it could well be the case; it doesn't do any harm to try.' Now have I outlined the reasons before why Pauling did not want to come to the institution here?

CP: I don't think so.

KH: Oh, I thought we talked about that. That's odd because—well never mind. In the late '40s there was a faculty member at Oregon State named Ralph Spitzer who was denied tenure in the Department of Chemistry. He was an excellent physical chemist and he raised the issue that he was being fired for his political beliefs, founded partly on a letter that he had written that was published in *Chemical and Engineering News* not supporting, but at least saying that people ought to at least think about what this fellow Lysenko—and at that time the Soviet Union—was saying about the effect of environment on inheritance. And of course, this flew in the face of conventional wisdom of the time, that everything was inherited. At any rate, the faculty of the Chemistry Department decided that they would not offer him permanent tenure which meant, of course, that he had to leave. Now I knew all the members of the Chemistry Department having been an undergraduate here and the consequence of this was that Ralph Spitzer asked the American Chemical Society for a hearing on the issue of—I've forgotten what the ASC committee was, but anyway—the idea is that you're not supposed to be discharged from a teaching position on grounds of your political beliefs. At the 1948 meeting of the American Chemical Society in San Francisco—which I attended—Ralph made his case and he was strongly supported by Linus Pauling. The upshot of all of this was that I don't think the ACS committee wanted to get its hands too deeply involved in this thing and not much ever came of it, but Pauling was rather actively pursuing the notion that Spitzer was a fine scientist and there could be no reason that he shouldn't be kept on for professional reasons.

[5:47]

Well, A.L. Strand was President of Oregon State at that time and a news media or some media made it—brought to his knowledge of what Pauling had said and Strand got properly angry and said 'well, Oregon State can get along without Linus Pauling.' Linus Pauling then said to the media when this was reported to him, 'if they can get along without Linus Pauling, they will.' So from 1948 till all through the '50s - and of course he won his Nobel Prize in 1954 and Peace Prize later on - he had nothing to do with Oregon State. After Mrs. Pauling's comment to me and my relay of this information to Jensen, he called me and said—as I've said before—would Pauling accept an invitation? In due course, this was tendered to him and he agreed, but he was going to come here and he was not going to speak—he was going to speak to the university as a whole—not going to speak to the Chemistry Department on a scientific subject.

So there was a huge meeting held in the present Gill Coliseum. There was a podium set up on one side of the floor and the stands were filled on the opposite side. This is kind of a stage there. Ahead of time, Jensen asked me if I would introduce Pauling. Well, if you think about that, here is a distinguished scientist coming to speak to the university and the President of the university is not introducing him. An ordinary faculty member like me was asked to do so. Well, in my presence, Pauling and I and Jensen - maybe some other people were there - Jensen informed him that I was going to introduce him and he turned to me and said 'you're going to introduce me Ken?' I said 'yes, he's asked me to do that.' Pauling didn't say a word, but it was perfectly clear that he felt that it was appropriate for the University President to do the introduction.

So anyway all of Mrs. Jensen and President Jensen and Ava Helen Pauling and Linus and Lise and I got in a limo and were chauffeured over to the coliseum and everybody was sitting there waiting. We filed in and went up on the stage, a few things were said and then I rose to give my introduction which I did in a few minutes. About this time, just as Pauling was about to speak, in filed a group of students that were all black and many—prominent among them were many members of the football team. This was at the time when the Great Pumpkin [Dee Andros] had decreed that football players were not going to be able to wear beards. At that point, all hell broke loose and there were meetings on the campus regarding free speech and the ability of the students to, the football team to have a personal appearance as they wished. And the Great Pumpkin insisted that—he finally resorted, I think, to saying that beards didn't fit very well in the helmets and so on. At any rate, in due course, these people, they said a few words and they turned and abruptly filed out, very well behaved.

[9:55]

So Pauling gave his speech, which was on peace and very well received and so on and then at a dinner that evening, Ava Helen Pauling said to me, 'Oh that was—I was so surprised,' she said, 'I thought all those blacks that had filed in were going to sing!'

That was the beginning of several overtures to Pauling. He came back on succeeding occasions, but in the middle of all this, well not in the middle, but I think at the beginning of all of this, I had reported to Jensen that Pauling—Mrs. Pauling felt that Linus' papers should come to Oregon State and of course, that would have been a great coup and so he gingerly broached the subject to Pauling. I wrote him a letter about this actually and Pauling in due course responded in saying he would give it some thought, but he was not yet prepared to give up his papers because he was still actively using the materials that were in them.

After Jensen retired, he was succeeded by MacVicar and I didn't think a great deal about this—Pauling was now coming and going occasionally. Then it suddenly occurred to me that I should forward the information that I had given to Jensen to him as well. So I dug out the correspondence: the letter that I had written and President Jensen's response to it, and typed another letter and sent it off to Dr. MacVicar. Well this scenario was repeated and he, again, queried Pauling on his papers. This was now some several years later after the first overture, but he got the same response back. Pauling wasn't yet ready to part with these papers.

Time went on and John Byrne became President and once again, I hauled out these papers—now I had two sets of correspondence—and wrote to John, sent it off to him. His response was a little bit different. He immediately set up a committee on which I served and he made a concrete offer to Linus Pauling that the others hadn't. He said, we are very—I'm paraphrasing him now. You could talk to John and find out exactly how this went but the gist of it was that he said that they would create—they would not just set up a room or something—they would create a Special Collections

in which all of his papers could be housed. They would build this for him. I think—you see, I've only seen these facts from what I remember of our contacts, but it should be checked with John. A member of the committee was Rob Phillips and some others whom I can't remember now. But anyway, this went on and this time Pauling agreed this is what would transpire, but he wanted also Ava Helen's papers to come as well. He strongly felt all his life that after he had won the Peace Prize that she should have shared in it because she was the one that actually stimulated his activity in that area.

Well there was a huge—when he agreed to do this—the first thing that he did was supply to the university—and you would know all this in the records of the Special Collections—he sent the copies of the signatures to the proposal; the, what do you call it, the petition for banning explosion of nuclear weapons in the atmosphere—atmospheric test bans. That was the first thing, I believe, that came to Oregon State and only gradually did the other material appear, still because, of course, Linus Pauling was active until shortly before—just a short time before his death. I remember people here were not clear about how big this collection of Pauling's was and so in due course, the University suggested or Pauling suggested that they come down and take a look at what he had. [Ramesh] Krishnamurthy was sent down and he came back and told me—kind of crosses where his eyes should be—he says there were over ninety filing cases down at Big Sur where Pauling had his ranch. You see, all the stuff had been moved down there. He said - Krishnamurthy, Ramesh - was just totally blown away by all of this.

Well in due course—oh, after Pauling had agreed to give his papers there was a very, very elegant reception in Portland with several speakers and a lavish dinner. It was really a very, very nice affair and Pauling spoke. At that stage, somehow the question came up about all of his materials coming here. There had been some feelings of some of the family members, particularly Linda, I think who felt that the family should have held control over some of these. Pauling was asked, 'well, what does your family think about all of this?' He says, 'well, Linda's here, why don't you ask her?' I don't remember what her response was but I do remember Pauling's statement very clearly.

[16:45]

As time went on, these things began to arrive—these filing cases. I remember Ramesh describing to me—the truck would pull up and disgorge a few of these filing cases and so on. That was the start and with that, saw the project through to completion. I don't know when the last of these materials actually arrived here at Special Collections, but that's kind of the history of how they came here, at least of the role that I played in it: doing nothing but reminding one President after another of what Pauling had—what Mrs. Pauling had urged him to do and the fact that the relations had been repaired between the university and Linus Pauling seemed to suggest that things might go smoothly forward from there.

I do know that he was actually very fond of the university. When he came on business, which he did not infrequently, I usually was somehow involved in escorting him around or walking the campus with him. On a number of occasions, we walked around campus. One time we walked up and the old—what was in those days known as the 'Chem Shack' and been quite seriously remodeled from Pauling's time, but he seemed to be able to pick out the room in which he had been lecturing when Ava Helen Pauling appeared in his life. We walked down 15th street and he showed me a house there that he had lived in as a student and I said to him it was rather surprising. There's a certain parallelism in our experience here because I lived on 15th street also, only on the other side of the street just a half a block down when I was an undergraduate student. So I took a picture of him and Linda on the steps of the house. I have it somewhere in my materials at home. The other thing I would say is that when Pauling began to come back to Oregon State on occasions, we saw him and his wife—as long as she was living—quite frequently at home for dinner and places and things like that. So we got to know them pretty well, better than when I was a student. Of course, when I was at Caltech as a student, I was a student, I was a—so it has been for me a wonderful exhilarating experience. So does that answer your query? I've spent twenty minutes describing it.

CP: Yeah. Well I'm interested to know if you have any other memories of the times that Ava Helen and Linus would come up infrequently and you were hosting them?

[20:06]

KH: Oh yeah, sure. I keep thinking that I have said some of this to you before, but it may have been to somebody else. Let me think just a moment. One time, this is an amusing anecdote and I don't know whether it involved Rob Philips but - I don't remember who the host was for a dinner party that the Paulings and we were invited to along with Dave

Shoemaker who was chairman of our department and who, by the way, knew Pauling very well. He was a student at Caltech when I was. We all knew that Pauling—he didn't shy away from alcohol. He liked vodka and on the evening of the dinner party—just before, about 4 o'clock, I got a call from the host asking me, 'well, I know that Dr. Pauling likes vodka.' He says, 'I looked in my cupboard and I don't have any and I don't have any way of getting it. Do you happen to have any vodka?' And I said, 'well, as a matter of fact, I do.' Have I told this story? No. Well, I said as a matter of fact, I do, so I went into my cupboard and I had maybe two thirds of a bottle there and so I got a brown paper bag and put the bottle in it and then we were picked up and the Paulings were picked up. We were driven up to the host's house, rang the doorbell and he appeared. Everybody shook hands and he and his wife greeted everyone most pleasantly and as I walked in, I handed him my paper bag with a bottle in it. Then everybody settled down for a bit in the living room before dinner was served and the host said well, would anybody like a drink and Dr. Pauling said, 'well, you don't happen to have any vodka do you?' The host said, 'well, as a matter of fact, I do.' So I thought that that story was very funny in retrospect, but at any rate, I never told Pauling this history at all.

So after Ava Helen died, he continued to come to Oregon State, often with Linda, who accompanied him. They would come—there were lots of things set up at the university, receptions here, there was a big library reception one time. There were seminars in chemistry and even in physics. Then, usually after these affairs and before dinner—well I say usually, often at any rate—he and Linda would come to the house. On one occasion—I'm referring still now to his enjoyment of a drink before dinner—came to our house—we were on the campus walking around and I said, 'What would you like to do now before the next reception?' which was an hour and a half away. He says, 'well, can we go to your house for a drink?' I said, yes we could. So we went over to my house and he says 'you don't happen to have any vodka?' I said 'yeah, I've got vodka, I know you like that.' And so I got a glass—a small tumbler-like, put some ice in it and he drank straight vodka which is essentially pure alcohol you know. He told me at one other occasion, before dinner he always had one of these cocktails, but that was about it. So I upended the glass and started to pour and said 'say when.' He didn't say when. When the thing was full I stopped. He looked at me with a smile. There was a lot of ice in it, so it really wasn't an awful lot of vodka I think, but anyway. We chatted a while and then he said to me, 'can I have another?' And Linda was sitting there and this was the time that we had to go to the reception over here in the library some place or another. It was a library reception, but it was held in the MU in one of the rooms at the MU. At any rate, he says 'can I have another vodka?' So I put some more ice in it and poured again and once again I stopped when it was full and Linda was over there and said 'Daddy, Daddy, you shouldn't do it. You've got to go to a reception.' Well he just smiled at her. Then we got up and walked out and he walked straight as a rod. He didn't waver at all; we got in the car, went over there and he walked in. He shook hands with people. You couldn't tell. He didn't weigh an awful lot. He probably weighed 165 pounds or 160 pounds or something. He was a tall man and loose jointed as everybody knows. The reception went off just fine.

[26:00]

At one dinner party we had—when Mrs. Pauling was still alive—we had tried to set it up in a nice fashion. We had another—there were the Paulings and Lise and me and another couple. There may have been two more, maybe eight people. But we had a first course with some white wine and I brought out the bottle and poured the white wine. Linus picked up the bottle, looked at it, and he says, 'yeah, this is'—I can't pronounce this well—'Pouilly Fuissé.' He says that's the same wine you served us last year. Why he would remember, of all the dinner parties he had been to, what wine we had served him at a dinner party a year before beats me. But anyway, that was his remark. It's been great fun knowing him.

CP: Uh-huh.

KH: So, does that answer your question about the papers and so on?

CP: Mhm. I want to ask you about the Shoemakers. We have their collection in Special Collections.

KH: Yes.

CP: You obviously knew them well. I was wondering if you could comment on what they were like as people and as scientists?

KH: Oh, well. Dave Shoemaker and I were close friends and when they—we served on a national committee together—the United States—the American Crystallographic Association. As a committee on which—well at any rate, we had a meeting to which I travelled to Washington, D.C - Dave Shoemaker was the chairman of this committee. Well he and I had been students at Caltech and I knew him very well. At the end, we—before I left—we were looking for a replacement for Bert Christensen who was retiring. There was some talk given about bringing in—in fact, it was preferred to bring in an outside person. I was impressed with how Dave, who was then at MIT as professor of chemistry and a crystallographer, ran this meeting. He was very efficient and I thought, 'Gee, he would be a good chairman.' So the meeting was run under a very, very tight schedule. We worked furiously for several hours and then people had to disband. They were not having a dinner, they were gonna go home. So I had almost—I said 'Dave, I want to talk to you.' He said, 'I've got to catch a train at such and such a time, but,' he says 'I'm on my way to the restroom. Let's go to the restroom together.' This may sound indelicate when you play it back again, but there we were on a pair of urinals, which are at an angle to each other, so we were semi facing each other and I outlined the situation to him and asked him if he would consider—think about being considered as department chairman. Now, of course, Dave grew up in Idaho and went to Reed College, so he loved the West and although MIT was a very prestigious institution and they had a summer house—he and Clara—up in the mountains. He said yes, he would think about it. He came out and people liked him. He was all for the job. Well one of the conditions for the job from his point of view was that his wife Clara Brink, who was also a distinguished crystallographer, and she wanted to be able to work and have an appointment.

[29:56]

At that time, there was a law, in fact it may still exist there that came into being during the Depression. There was an anti-nepotism law and it decreed that no members of the same family—I don't remember how that was defined—could work in the same department, or in fact in the same institution—but even further—in the state system of higher education, except under unusual circumstances. Well about this time, Lise, my wife, was also a scientist. We'd been working together for years and we had a joint grant together. Previous to that she had had appointments in the computer center as an Associate Professor and so on. She was a professional, but then it was determined that—by Bert Christensen—that he wasn't going to allow her to work any longer and be paid. So I went to him and said 'Look, we've got this grant here and you've signed it on the bottom. The line item is in the budget and Lise has to be able to work.' He says, 'I'm not gonna approve it.'

So we took it over to Vern Cheldelin who was Dean of Science at that time. I brought it in and I showed him this and he says 'well why didn't you tell me this sooner?' I said 'well, Bert Christensen and he were very close friends. I thought we should be talking to the chain of command here.' He says 'well, here is a document. It's legal.' He says she's going to be able to work on this grant until it expires, but after that if she wants to continue to be paid, she'll have to get a grant of her own.

Well all this applied to Dave coming and one of his conditions, as I say, was his wife be allowed to work. Bless his heart, MacVicar came around and he looked at this and he said, 'O.K.' He says 'it says that you cannot have members of the same family working in this institution at the same time and being paid except under unusual circumstances.' He says 'it's clear that a husband and wife scientific team is an unusual circumstance.' So he says 'I am going to approve this.' And then Dave said 'yeah, but can Hedberg and his wife'—which is exactly the same situation—and MacVicar says the same rules apply to them. Then MacVicar said, and this is very funny, Dave and I were close friends and our wives are friends and MacVicar says 'the only thing I am going to ask is that you be responsible for Lise'—my wife—'and Ken will be responsible for Clara.' Once a term, Dave would call me in to his office. He says, 'O.K. Ken, how is Clara doing?' We'd have a big laugh. I said 'Fine, how's Lise doing?' 'Fine,' he says - that's it. So that's the history of—with that condition—Dave accepted the job and was here, served in that capacity for several years until he retired. Then he and Clara had an office in chemistry, but he became ill with kidney disease. Finally was on dialysis and died of a heart attack one time during dialysis over in Albany. Clara lived for several years after that and they set up a fund anchored with \$100,000 to begin with for the support of students in chemistry. So that's Dave Shoemaker.

[33:56]

Dave and I shared an office at Caltech. That's another interesting thing about him. I've never been a smoker, but he was. I've told this story at meetings when people have asked me about Dave. I said, well you know, he had—he didn't have an ash tray because that wouldn't have lasted long. He had a French 75 Howitzer shell casing which is a brass thing with a rim on the bottom and stood about two and a half feet high. It had a notch cut in the top and he'd stick his cigarette in

that and flip it when the ashes would come down. When he left, that thing was full to the brim with ashes in my office. I threw it out of course. He gave up smoking right after that when he went to MIT and Clara never smoked and she had some respiratory problems—asthma and so on in her late years. That might have been part of the cause. They have a distinguished son: Bobby Shoemaker who went off to Britain and he's an historian. He's at one of the southwestern British universities. He—believe it or not—has a position as a professor of English history. This is an American. He's still an American citizen. He's written—his thesis was a penetrating book—a penetrating document which is published in book form and got very, very good reviews. I think that's an interesting sideline to the Shoemakers—both scientists, but their son a historian lecturing English history to Brits and being academically rewarded for it.

CP: We've talked a little bit about your early trips to Norway and your associations with Norwegians. I wonder if you could talk a little bit more about how that has continued over time—your connection to Norway and Norwegian scientists?

KH: Oh, well. Let's see. I want to make sure that I'm talking about the things that you want me to: how I went Norway and how my relationship with Norway and Norwegians continued professionally through the years. Is that it?

CP: Yeah. We've talked about the initial trip.

KH: About what?

CP: We've talked about your initial trip to Norway and meeting your wife, of course.

KH: Yeah.

CP: Then your early associations with Otto Bastiansen and Odd Hassel.

KH: Yes, well. My professional associations with Norway developed as a consequence of knowing professor Otto Bastiansen who later became rector of the university. I don't remember if I've mentioned that or not.

CP: Yes.

KH: But, when I was there, I spent—oh I've lived in Norway probably about five years or so all told, mostly on one year stints. By the way, Pauling has often come when I've been there. We've escorted him around, Bastiansen and I, to various places in Norway and gone to meetings and talks that he's held. At any rate, Lise's family connections, still in the early years of our marriage, were pretty strong. She liked to go back to Norway, so on my first sabbatical leave—at Oregon State—I decided I would go back to Norway. We had some big projects going on that we could share in Norway with our Norwegian colleagues. So I spent a year at the University of Oslo then again on sabbatical. Lise worked also. She came in and we had a nice house arranged for us by the university. Actually it's a—you know, an apartment. They don't have houses there by and large for younger people. During this time I met a number of people that worked in essentially two laboratories doing my kind of work: one at the University of Oslo and the other at the University of Trondheim, which didn't have that name at the time. Lise got her training in Bastiansen's laboratory and a number of other people did also, one of whom was a lady named Marit Trætterberg who went to Trondheim and became a professor there. I was invited up there and gave a lecture and she introduced me to a student of hers named Kolbjörn Hagen and Kol and I—the question was he just finishing his degree and I was looking for a post-doctoral associate. So I said to Marit, I said 'Is he pretty good?' And she said 'yes, he's very good,' so Kolbjörn came to the United States. That was the beginning of a professional relationship, I think, probably my strongest professional relationship - apart from that of course with my wife and the work that she does in the laboratory - of anyone. He spent a total of six years in Corvallis, coming at various times for a year's leave but once or twice a two year leave and so on.

CP: Sorry to interrupt you, how does he spell his name, just to make sure we get this?

KH: Hagen?

CP: Yeah.

KH: H-A-G-E-N and the first name is Kolbjörn. Björn is a—it's K-O-L and then B-J-umlauted O-R-N. That means bear in Norwegian.

CP: O.K.

KH: Anyway this relationship went on through the years and then one time I received an invitation—well I was asked several times to serve on doctoral committees—and one of them was Marit's committee when she obtained her doctorate. That was quite early in my career. That was lots of fun because it was all done very formally, you know. There's a first opponent, a second opponent and then a third one, who is kind of a humorous opponent. I was the first opponent and in these formal things, you were dressed very formally. In the old days you used to wear tuxedos. The candidate would wear—savant would wear a tuxedo. We had a podium and the candidate was over here—Marit—and I was here, and there was an auditorium full of people. I had been given her thesis and I would ask her a question and she would answer and so on. At the end—by the way, I was paid a substantial amount of money for this and that was a norm for the time. So we had a tremendous—the tradition is that the successful candidate throws a party—and we had a wonderful, absolutely wonderful dinner party at her house. That formed an association that continued until her death years later. She has spent time in Corvallis also.

At any rate—so after, in my mid-career when Kolbjörn wrote me and informed me that the university had elected to give me an honorary degree, so I could come up there. That was tremendous fun also. There were three of us who won—who were awarded an honorary degree. One of the guys was a fellow from Germany who had just won the Nobel Prize, so I felt myself in distinguished company. There was a big party, I still think of with great fondness. Then, I think some time before this, I was elected to membership in the Norwegian Academy of Sciences. A bit later, on another occasion a few years later—these are the American equivalents—the actual Norwegian name is, well I don't have to describe it, but anyway, let's say one of them is a Norwegian counterpart to the National Academy of Sciences here and the other one is the Norwegian counterpart of the American Academy of Arts and Sciences. I've been asked—I've been awarded a membership in each one of these. So all of this is a consequence of this long stretch of professional affiliation I've had with people in Norway. I think the laboratory that does my kind of work in Oslo is now extinct and the one in Trondheim is also. Everybody who was involved in my day, just as I am, is retired. The university efforts have gone off in different directions, but everyone that belonged to this laboratory, almost every single person in Oslo, I think barring one, has spent some time in my laboratory. Almost everyone in Trondheim has also spent time in my laboratory. So there's a—that numbers maybe ten or fifteen people altogether who have spent as long as two years in my laboratory.

I have a book in my office in which I formed the early habit of taking a Polaroid picture and pasting it in the book and asking them to sign their name to it. All of these people are there. On one occasion when I was going to go to Norway, I was asked if I would give a talk in Trondheim and I said yes. I got to thinking about this. Kolbjörn Hagen, by this time, had become a professor in Trondheim so I fished out all the pictures that I had and arranged them in sequence from the time he first came to the time he last came. There were about eight of them. I had a series of slides made of these and when I came to talk, I said 'I want to show you the history of one of our good friends.' So I put these up there at the immense hilarity of the audience because they had never seen Hagen as a young man. They'd only seen him—and I could show his development with the dates underneath. So that made quite a hit in that talk. He's never let me forget about that either. It's been a great boon and fun for me. I have also formed professional attachments and friends with people at the University of Tromsø which is in northern Norway and at the University of Bergen on the west coast. It's been a very fine thing for me.

CP: I have a list of names of people from the OSU Chemistry Department over the years. I'm wondering if there are any recollections you have about some of these folks? John Fulton?

[46:31]

KH: John Fulton is the only one that I never met in person.

CP: O.K.

KH: When I came to Oregon State in 1939, Gilbert was chair and I don't know how long he had been chairman at that point, but he certainly was still chairman in 1956 when I returned. I think he actually retired in—from the chairmanship

in '57, wanting to spend the last two or three years of his life doing teaching and research again. That's when Christensen succeeded him. I don't know whether you've seen all of the pictures in chemistry, have you? If you go into the main hall of Gilbert Hall, on the end nearest here, the library, and walk down, on the left hand side, high up, is a chronological arrangement of all the professors that have been present in that department and retired. John Fulton is the first one on the list. Every single person I have known of the succeeding twenty or thirty that go on down the hall there. Of course the last—I've been retired long enough so I'm quite a long way from the end now. But everybody on, up to the present, I've known them all, except Fulton. I kind of regret that.

CP: How about Francois Gilfillan?

KH: Sorry?

CP: Francois Gilfillan? Gilfillan?

KH: Gilfillan.

CP: Yes.

KH: Oh yes, yeah. He didn't have an active role in the Chemistry Department. He was the Dean of the College of Science and during the war, for a short time, he was acting President of the university if I remember this correctly. He was a very erudite man and had a wonderful personality. I didn't know him well; I met him on a number of occasions. He was still alive when I returned to the university, but he suffered from—I don't remember whether it was Parkinson's or—I think it was Alzheimer's disease that he finally succumbed to. He was just a wonderful guy. His family has set up a research award in his name called the Gilfillan Prize. That's given every year to a faculty member.

CP: Earl Gilbert?

KH: Earl Gilbert. The hall was not named Gilbert Hall until after he died because there was, at that time, a rule against naming buildings after living people. Gilbert was a big guy. He walked with a kind of a shuffle. He was a physical chemist. He had two sons: Henry and Allen, and Henry was a classmate of mine as an undergraduate. And when the war broke out, he was involved in war work over in Albany at the—I don't know. There was a Bureau of Mines then or whether he was working with Wah Chang or whatever on war work. He died of a malignancy. People think it was related to ingestion or inhalation of beryllium which is extremely toxic. His son Allen Gilbert—I mean his brother Allen Gilbert, Earl Gilbert's son, was a surgeon at the Corvallis Clinic for many years. He retired, as I understand it, because he developed severe arthritis in his hands. He was a very nice guy.

Well, Gilbert, I had only one course from him when I was an undergraduate—the department chairman actually taught then—and he taught physical chemistry. I recall one kind of poignant experience with Earl Gilbert when I was an undergraduate—there was a chemistry honors society called Phi Lambda Upsilon and I was elected membership in this. Henry Gilbert, who was a chemistry major, was not. Henry Gilbert was a, I want to say, a very outspoken, outgoing guy and he was not elected to—when you're elected to membership, a vote is taken and if there is any, I don't recall what the circumstance of the election, what the rules are or were at that time—but he was not elected and Earl Gilbert, his father, was very upset at his. He called me into his office and he, in a very diffident way, let me know he was very disappointed that Henry had not been elected. At that time the chemistry—the Phi Lambda Upsilon members comprising majors in chemistry and chemical engineers largely. He says, 'I can't ask you, of course, about the vote, but,' he said, 'can you tell me this? I suspect—was it mostly the engineers that were involved in this negative vote?' I hesitated a long time and I said—well, you know, I felt I had to answer him—and I said, yes, it was. He just shrugged his shoulders. I know he deplored it.

[53:36]

There was a strong Greek community on the campus at the time that I was here. There was kind of a social division between the independents in the Greeks. That division seemed to extend into honors societies as well. People were voted for membership. In retrospect, it's utterly ridiculous to think that someone who is academically well qualified would be not voted into an organization for personality reasons. I liked Henry Gilbert; we got along just fine. He didn't have the shy, respectful attitude that maybe these people expected he should have. That was very upsetting to Earl Gilbert.

Another thing about the Gilberts: once a year, they invited the chemistry department to dinner at their house, the faculty with their spouses, and it was always a very nice dinner. Now the Gilberts were teetotalers—no alcohol was served. Tomato juice was served instead. That was all well and good. Everybody understood this. Then the Gilberts went off, I think it may have been one summer, they took a trip to France and they came back and Wendell Slabaugh, a good friend of mine, was hosting a dinner party and he asked Lise and I were asked—were invited, as were the Gilberts and some other people in physical chemistry. It was a very nice dinner and Wendell asked me ahead of time, 'Do you think I should offer people a sherry or a drink, or wine with dinner?' I said 'well, it's your party, why not?' The Gilberts, as I said, had just come back from this trip in France, so Wendell, in due course, asked what they would prefer and Earl Gilbert says, 'well, I'll have a glass of tomato juice.' His wife said 'I think I'd like some sherry.' Gilbert winced and she had a glass of sherry and the conversation went on and she said 'my, that was nice sherry. I like that very much.' And Gilbert mumbled, 'And I like my tomato juice too.' I understood that—I don't know where I got this information, but I understood that as they travelled through France, they did drink wine because that's about the only thing that you would be served at a meal. Maybe that's how Mrs. Gilbert—just for the moment I can't remember her name, it'll come to me. They were nice people. I liked them.

CP: Well the next person on my list is Wendell Slabaugh.

[57:08]

KH: Oh. Wendell was a remarkable person. I held him in the highest regard, not when I first came, but later on. He—when I first came, did I mention that there was a—I mentioned that Christensen became chairman after Gilbert, but that was not without a hitch in the proceedings. Have I ever mentioned that?

CP: No.

KH: Well, for some god forsaken reason, it was determined that the department should not only elect, which was reasonable enough, but should vote for who they would prefer as a department chairman. Of course that was non-binding because the Dean is the one that makes the decision, but among other things, for some reason—and no body seems to remember this but me, I'll have to dig out my records—the department decided it was going to have a constitution. Democracy was going to rule. Now if you think about that, how ridiculous - can you imagine? You can't run a department as a democracy with a legislature that determines things. You've got to have a department chairman that makes things happen.

Be that as it may, Slabaugh ran for—he came around and I was new at this time, along with Tom Parsons, and I knew that he was a candidate. He came around and in a very subtle way, was discussing this. Christensen was the heir apparent. As I explained, Vern Cheldelin was the Dean and they were good friends. Everybody expected that Christensen, as the oldest and most experienced and longest serving department member, would become chairman. He was a good scientist. He did hard work and he's one of the few people who were regularly publishing at Oregon State at that time. Well, Slabaugh was running also and it was determined that the person who won the election's name would go forward.

Now I don't remember whether Slabaugh won this election - I don't know how many votes were cast, maybe twenty all told, or thirty - won the election by one vote. All hell broke loose. Christensen was terribly upset and Slabaugh told me later, he was invited over to a Dean's office—I don't know whether it was Cheldelin or someone else—and sat down and talked to in a friendly manner by this official who pointed out that he was a young man and that the department would undoubtedly run better if somebody with long experience was chairman. As a young man, he would have plenty of chances to rise through the hierarchy into an administrative position. Slabaugh, reading the handwriting on the walls, then announced that he was withdrawing his name from consideration. That was his public statement, but his private feelings I have relayed to you. So Christensen became chairman. I think he always had that—what do I want to call it—feeling of having been rejected hanging over him for a long time, so he strove very hard to be what he thought would be a good chairman. I could tell you about that also.

[1:01:25]

Slabaugh was a distinguished teacher. His lectures were very popular. He had a most original mind. He did unusual things; he built himself a—what was rare at that time—a three wheeled bicycle with an enclosed canopy over the top

which had plastic windows in front so he was shielded from the wind and he would pedal this thing to work. It had a little flag at the back. You see some handicapped people using these today—not him. He had this. Later on he built something similar and he put a motor on it—this electric motor operated by a battery. He built it all himself. He lived on Grant Street up about thirty-fourth street on the right hand side. He had hedges there and he trimmed these hedges so—what is the art form known when you cut these in the form of shapes and animals—he meticulously groomed these plants and he had one sitting there that had wheels on it and a canopy and a steering wheel, just one bush that had been sculpted into that shape. Others he sculpted into animal shapes and then in his driveway, which sloped down to the street, he painted one of the very famous—what's the guy's name who does these peculiar drawings—they're famous now, he's a famous artist. The water that runs uphill without seeming to do so?

CP: M.C. Escher?

KH: Escher. Yeah, Escher. He painted the black and white doves that, you know, mesh together and they're going down to the sidewalk.

He built outside a bench into the wall. His yard sloped down to a concrete barrier there and he built a bench in there, of wood. And it says—I don't remember the Italian words exactly or the pronunciation, but let's just say it. Something 'comodo de pubblico'—'for the convenience of the public,' you see. We got to know him and his wife very well.

Later on, we saw them socially a good deal. Lois—his wife—was a very nice lady. Wendell—he had this nice house. He had an idea: he went down to the GT one time and he bought or brought—I think they were given to him—a number of plates which were used in printing which were all black on the top. They were, perhaps, glass or something. I don't know. But he bought a whole bunch of these and he built himself a box on his roof and he mounted these things so that the sun would hit it and he slowly circulated air through this which he then arranged to be pumped down into his house. You still had to have a furnace of course, but he said this noticeably reduced his heating costs.

Then, in later years, he would quit early and say 'I need some exercise' and he would go home. I discovered that he was digging a huge cistern in his yard. I saw this thing being constructed. He had grape vines in back too, it wasn't a big yard, but he had grape vines as well. When this was completed, you know, we were up there at dinner one time and he says 'come and see my cistern.' It was just completed. I looked down in this damn thing and it was about eight feet across and it was at least eight feet tall. It was a huge thing and he had dug it all by hand, made the lining and everything in it, concreted it all up and so on. And he said 'there it is.' He says 'I'm going to start filling it. Let's go down,' and he had a ladder built in the side, so we went down, we sat down on a couple chairs in the bottom while he would describe this cistern to me. So then we went upstairs and he covered it and piped all the water that fell on his roof, all of that went into the cistern, which he then pumped out to water his garden: the front lawn and the vines in back, everything. The city then had an assessment for storm—for drainage, so he went down to the city and he said that he wanted to have his drainage reduced because the property was not as big as they said it was. He gave them an estimate of the square footage of the roof on his house and he wanted a proportional reduction in his drainage fee. The city would have nothing to do with this, at which point he realized that this drainage was really a tax on the amount of land that you had, not really on—it's a disguise the way he put it to me. So that was Wendell.

CP: Yeah, he sounds like a fascinating guy.

KH: He died of a heart attack in his sleep and it was a tragic thing. Lois was very upset and she continued to live in the house for quite a while. She would come to our house regularly and we would go up there to dinner. She came to us for dinner. I did some work—a little work on her house for her. I repaired the toilet that was leaking around the seam at the bottom—put a new boot in it. I drilled a hole in a door and put one of these viewports in it for her and did a few things like that. She developed an infection that, by the time it was diagnosed, her condition was so poor that she, even after treatment she couldn't recover and she eventually died from it, not the infection, but the fact that she had no reserves left. That's the story of the Slabaughs as I know. They had one son who is in California still. He has no children and he is an orthopedic surgeon. They had a daughter named Jane who babysat our kids when they were small and she became, for reasons that were never entirely clear to me, estranged from her mother and she lives in Seattle. She was married and then divorced and I think I've seen her once up there, but I don't know what's become of her since then. That's about what I know of the Slabaughs.

CP: You mentioned Bert Christensen was the department chair?

[1:08:48]

KH: Oh yes. Well, Bert very much wanted people to realize—to convince people that he was a very good department chairman. And we have in the chemistry at that time—we have a source of chemicals, let's call it a storeroom. A lot of the chemicals used at that time in organic chemistry and so on—there was a big supply in there. He would buy these in bulk and they would be repackaged in jars and labeled with the number and so on, on them. Other departments, you know they couldn't afford a store like this. This would be sold to them at the price that was listed—or maybe just a trifle less of the price listed for the same size container of the same material in the chemicals catalog. By buying it bulk and repackaging it, we saved money, we made money and that money was used to support various things. You have to realize, in those days, there was almost no money for anything. If you wanted to replace the equipment, you know, it was like pulling teeth to get any money from the university for that. This enabled things to proceed in the department, and to keep us just—at least hanging on. The trouble with this was that this money, which went into an account, had to be spent by the thirtieth of June. Some times—Christensen was very frugal. He would get all this stuff piled up there and then he didn't have a way of spending it before the end so all sorts of peculiar things happened. He came down to me one time and says, 'Ken, how would you like to have your office painted?' I said, 'my office painted? I don't need my office painted.' He says 'well, you know, it looks a little dingy in here, we should paint a few of these offices.' I just shrugged and so my office was painted. That used up some of the money.

On another occasion, he was walking down the hall in the basement and he says 'you know, I don't like the look of all these pipes over head.' This—in the basement, everything was open: all sorts of vents and pipes that look terrible. He says, 'I think we ought a—well how would you react to the idea that we put a false ceiling in and mask all this stuff.' I said 'well, you can do it if you want. I don't see the need for it. In fact, it improves the appearance of things but it also makes it substantially more difficult to locate the source of problems.' So in due course, we had that false ceiling which if you go into the basement of Gilbert, you can see it's still there. It's got holes punched in it. It's white panels suspended from the ceiling.

So Bert was very, very conscious of—how do I want to say—he seemed to be covering his tracks all the time. One of the reasons that he refused to renew my wife's appointment had nothing at all to do with science—anything like that. She was paid very modestly in any event. But for the first time in history, just before he took this action, the city of Corvallis defeated a bond measure designed to support schools. He thought 'boy, people are looking at what the education system is doing and here they're gonna see that there's a faculty member's wife who is being paid on a faculty member—being paid through the system,' of course. My grants were through the university and they were paid. He decided he couldn't tolerate the possibility of somebody objecting to this and that was the reason that he advanced to me. He says 'we have to be very careful of our image.' He advanced to Lise—I didn't have anything to do with it. She wrote him a letter, went to see him, wrote him another letter and nothing happened. Finally he refused to answer her letters and that's when we went over to the Dean. I remember a remark Earl Gilbert said one time. He was a gruff old guy and he spoke like—he says 'Bert is sort of like a country horse, he shies at a paper in the road.'

So that's Bert. He contributed—after he retired you know he set up a fund designed to help graduate students attend meetings when they were working with research groups for which there was no money. That was used quite a lot. I thanked him a couple of times when I saw him on the streets. He says 'oh, well I'm pleased.' He says 'if you need more money, let me know.' I don't know whether he put more money up or not, I wasn't the department chairman. So he had his good sides.

CP: How about Vernon Cheldelin?

[1:14:27]

KH: I don't remember much about Vern. On the same personal or eminent basis that I mentioned these other people because he was sitting in the Dean's office at the time. Well when I first came here, he was head of something called the Science Research Institute. It turned out—in the early days, there was a group of biochemists associated with chemistry among whom was Cheldelin. He decided that he would like to set up this independent entity. There were lots of reasons for it because overhead that was returned to these agencies—at that time the University returned part of the overhead to

the departments and the departments then could determine how they were going to use this returned overhead. Well, I think Vern had some ambitions. Clearly he did and he was a nice guy by the way. He arranged, I'm sure with the support of Christensen, to take these biochemists and to set up what they called the Science Research Institute, which was largely biochemistry. Later on that became - I think kind of morphed into, along with perhaps other departments I'm not quite sure - into the Department of Biochemistry and Biophysics.

Then Vern became Department Chair—became Dean, pardon me. He suffered from health problems, serious ones. He had very high blood pressure at one stage and he died really rather young. His wife was very well-known also. Was it Irene? Her name was Irene Cheldelin. But I think she served—she was certainly involved in local politics and I don't know whether Cheldelin Middle School is—they were philanthropic also—whether that followed mostly from her work or from them jointly as a couple, but at any rate—so that's about as much as I know of Vern. Personally—I'd see him all the time on the street. We'd shake hands and chat a bit. Then I had this—Lise and I had this contact with him on the occasion of her appointment. That's about all I had to do with him.

CP: The last person on my list is Carroll DeKock.

[1:17:30]

KH: Oh, Carroll DeKock. Yeah, Carroll is a wonderful guy. I regard him as certainly one of the better Chairmans that I have experienced here. Carroll had a research program in inorganic chemistry when I first came. He decided he would for whatever reason—I think his research was slowing down—that he would run for Department Chairman. I think that there were two choices, one of them was Darrah Thomas and the other was Carroll. I think the ultimate decision was made by the Dean that it would be Darrah Thomas and after he served for a term, Carroll became Department Chairman.

Now, Carroll, he really ran the department the way that a lot of us would like to see it done. He once professed to me. He says 'look,' he says 'my research days are over. I view my role in this department as to expedite the research and teaching potential of the department to the maximum possible.' The difference between him and Christensen say, to choose an example, Christensen you couldn't pry a dime out of him until the end when you saw these flamboyant expenditures being made. I'd go to Carroll and I'd say 'look, I need some money from my returned overhead.' By the way, in those days the department received returned overhead from the university. Maybe they still do, I don't know. But the department could determine what they did with the overhead and our department had a practice of returning about eighty percent of the overhead that was derived from the research grant of an individual to that individual. So if you had a big research grant, of which a lot of overhead was extracted and returned to the department, then you would have a chunk of money to deal with because I think they returned eighty percent or so and you could use that any way you want now. What happened was that a notice would be sent about that the returned overhead was now available and you should write down what your needs are. Now it wasn't that the overhead was directed specifically to the individual who had earned it, but that would receive some priority. But a lot of us didn't need all of our overhead so we built up—formally speaking—an account. Other people who needed equipment that exceeded their returned overhead could use the returned overhead and then you would have a credit so to speak. Well of course this is not a business and looking back, a perspicacious individual would have seen that this can't persist and the guys who have the credits are probably never going to realize their money back again whereas those guys who are in debt, you know, the department is going to decide that they are not going to distribute overhead anymore so they come out smelling like a rose.

Well, I didn't need all of my money because I had equipment budgets and I could buy the equipment and apparatus that I needed. But Carroll—when I went to him on a couple of occasions saying 'I need this or I need that, Carroll, and I don't have the money in my budget for it.' He says 'how much is it?' I'd tell him and he'd look at this and say 'O.K., go ahead. Buy it.' He was very effective in this way and I think people respected him for that because people didn't go to him to try to buy things they really didn't need. This is in keeping with his professed remark to me that he was going to do what he could to expedite the teaching and research activities of the department. If you needed money for your research and you didn't have it, he'd try to get it for you. So he was very good. You know he's still around. He does—we have an old man's lunch once a month. Did you know that?

CP: Uh-uh.

[1:22:23]

KH: The old man's lunch started way, way back in 1986 and it started with Bus Marvell—Elliot Marvell, a professor of organic chemistry who retired and Jack Decius and it may have been Harry Freund also. They had just decided they would meet for lunch. Then, there were probably four of them all told and then, when I retired, they decided that I would be invited to this. Then it became kind of a monthly affair. As people have retired, that has kept going. Every retiree in chemistry and two or three in biochemistry/biophysics—Chris Mathews comes. Ken van Holde is a part of it. Bob Becker comes and several chemists come. Several chemists who could come don't because they're active tennis players still and they have matches Wednesday at noon when we have our meetings once a month. But I go regularly. Carroll DeKock comes and he's a very lively guy. It's lots of fun to see him. He's been very active. He bought a house on Peoria Road and he's been an active kayaker for years. Finally, he decided that the commute for him and his wife was just too much, so they sold that property, or at least are in the process of selling it and bought some last year here in town where he's now living. But he still kayaks. In fact, they went on the Rogue recently and he's been down the Grand Canyon more than once in his own kayak. So he's very active physically, wonderful guy.

CP: What are some of the more fruitful or memorable experiences you can think about in terms of your work with graduate students?

[1:24:42]

KH: Memorable experiences working with graduate students. Well, I'm thinking here as I'm sitting. I've had some very good graduate students and some that were not so good—almost all of whom have finished and gotten a degree. Let me name one who came along fairly late. His name was Jinfan Huang and he was a Chinese national. He came here when—oh I'd have to look to see, but it's been almost twenty years now, perhaps even more than that—from China when it was still a highly restricted place. He grew up in a time of the Cultural Revolution and by his own bootstraps, lifted himself up. He became aware of a position I had and I don't remember the details, but I decided he would be a good addition and I think he was coming at the beginning with his own money. So he arrived and I had several students working with me at that time. One of these was a young woman that was working away. When he showed up—I happened to be away the day he arrived—he came into the laboratory and this young woman was trying to do some work on her computer and he spoke rather poor English at this time, but he was as gung-ho as they could come. After a while, I think a day or two later, this girl came to me and said 'I can't stand this guy,' she says 'hung over my shoulder all the time asking me all sorts of questions.' He was so eager.

Well, by this time, I was taking him in hand myself and he was beginning to enroll in courses and he was very anxious to start research. He was dynamic; he was a tremendous researcher and he was an older man. He had had a lot of work in chemistry, even at the theoretical level—very knowledgeable, but he was required to fulfill our department requirements, of course, for coursework. He enrolled in theoretical chemistry and he got straight A's. No question about it. At the end of his first year, he was voted the outstanding incoming graduate student and then a year later, he was voted the outstanding graduate student. Each of these carried financial stipends—not a great deal, but some.

[1:28:20]

One day he came to me and said you know the Chinese are very cognizant of, let's say of the social hierarchy and the deference which should be paid to people who occupy a status a little more elevated than yours. So he came to me, having just attended a lecture in quantum mechanics by one of our faculty members and he said to me, very quietly he said, 'is it alright to correct a professor when he is wrong?' I said 'yes it is, you should tell him or raise the issue and tell him about it and say that you think this is the right answer,' but I'm not quite sure that he ever followed through on that. Well, he did a lot of work and then at the end of his graduation, he got his degree. He worked for a while with Doug Keszler in chemistry and then a colleague of mine at Michigan named Larry Bartell was looking for somebody and I recommended Jinfan Huang to him. Of course, he shows up and Larry isn't doing quite the same kind of work that I am and Larry has a very abrasive, no-nonsense personality, but I think he met his match in Jinfan Huang. He would tell Huang to do something and Huang would do it but then he would point out that he could do it better this way and he would do it that way.

So it turns out that—now Huang was married and he could hardly wait to get his wife to come to this country. Finally, he arranged so that she could come. They had two children, two boys, which is of course out of the line there.

CP: Yeah.

KH: At any rate, the first thing they did—the woman came—he wanted her here so she could cook and he could spend more time doing research and he enrolled his son in the high school—his elder son. I guess both kids, but I don't remember so much about the younger. Anyway, he was very distressed because after a while, the younger son was not rushing home after school and spending the rest of the afternoon studying. The son became quite used to American manners and he liked the social life and so on and this distressed his father immensely who expected him to behave like a Chinese. So he came to me with his problem and I said, 'Jinfan,' I said 'how's your son doing?' 'Well, he could do better. He could come home and he could be studying advanced things.' I said, 'well how are his grades?' He said 'what grades?' I said 'well what are the marks he gets in courses?' He says 'well he gets all A's.' So it wasn't enough for Jinfan that his kid was excelling by American standards. He had to study all of his spare time.

Well, as things went on, his wife had to go home—her visa expired and then he learned after she had been home a long time that she was pregnant, at which time he immediately divorced her. That's a no-no there you see. I don't know whether his sons had gone back or whether they stayed with him here or not. I just don't remember that. Then he began to look for a new wife. This is kind of a mail order proposition and so I don't know how the Chinese do it traditionally—but at any rate, he found some woman in Shanghai and he went to visit her. I think they eventually married and she's a little more modern type that he was and she joined him in Minnesota and I think they are still there. I don't know whether they have any children together or not, but he found a job in industry in Ann Arbor. But he still works weekends in Larry Bartell's laboratory. So he's the most notable graduate student from several points of view that I've had. I've had post-docs that are even—just as remarkable, one from Japan in particular. We're getting on here. How long do you want to go? I can go a while longer if you'd like.

[1:33:17]

CP: O.K., sure. Do you have any more grad students you want to talk about?

KH: Well, let me talk about one of my post-docs. I mean, I have a host of graduate students and each one of those has got his own personality and some have been very productive, some less productive, but I want to mention something that I think is a remarkable life or pair of lives. There was a distinguished professor named Yonezo Morino in Japan at the University of Tokyo and in 1960—I think it was '60 it may have been '62—but at any rate, I had a letter or wrote a letter. I was looking for a postdoctoral appointee and Yone, as he was called—Morino—we became friends and I've seen him all over the world at meetings in Japan and Norway and other places. He wrote to me about his student named Machio Iwasaki who would like to study and he could recommend him.

Well now, Machio came to the United States having gotten his doctorate in Japan and he was phenomenal. He was a superb mathematician, an excellent experimentalist. He had only rudimentary English, but I spoke slowly and he could understand me and I could understand him. Well it turned out that when he knew that he would be coming to the United States in three months he had had no English experience at all. And of course he had essentially no money. They don't have money, these graduate students in Japan at that time. So he went ad hoc and enrolled in a crash course in the English language. He managed to get enough English so that he could speak to me in English in three months' time. Now that's not so hard for a western speaking person to do that, but Japanese is so different that it's a tour de force. He became much better as time went along.

So he asked me to help him find a place to live, which I did, and it was very satisfactory. It was very low level, but I mean, after all he was here to do research. He had his wife with him; he had no children. A few weeks later, he came to me and he said did I know a doctor? I said 'well I suppose.' He said 'my wife had terrible pains in her legs and so on and we'd better see a doctor.' So I gave him the name of doctor that we had used for our kids and he came to me the next day and he said, 'Oh I didn't need the doctor. We solved the problem.' The problem was that never in Japan had this woman been sitting in chairs. She had always been in the Japanese traditional position on her knees and legs with her feet back like this. The minute she started to do that, all her pains disappeared. So she could sit on the chairs intermittently and sooner or later, the problem vanished.

[1:37:09]

Another time he came to me and he says 'I need to have vitamins. Do you know where I can get vitamins?' I said 'Oh yeah, you can find them in any store.' He then told me they didn't mean that kind. So I said 'well what kind of vitamins do you mean?' He says, 'I take vitamins, but I inject them.' I said well people don't inject vitamins here, you can take them orally.' Then another time he came to me and said that—well he spent a year and then he asked me if he could continue another year and I said 'yes ,of course you can.' So he worked very hard and then he came to me that year and he said 'I've been thinking about another apartment' and he says 'I would like to have you join me and look at it.' It was over on Western Avenue where he had been living on 11th street in an old brick building there—an apartment building. And so this place was lighter and more airy and it seemed to me like a nice place and it was cheaper. He seemed very hesitant about it and he kept looking at me. Then some time later, he said, 'you wouldn't lose face if I moved here?' Apparently in his mind, because it was cheaper, it was a downgrade in quality when as a matter-of-fact is was an upgrade in quality. But what is remarkable about this is his having been raised in a time—maybe it's still this—where face is everything.

Well, this story is incomplete without my telling you a little bit about his wife who is even more remarkable. She couldn't take English; she knew no English when she came here. She came from a fairly well off Japanese family, very western, whereas Machio's family was very traditional. His father was an old sea captain. The daughter-in-law was expected to do everything in the house where they lived. Anyway, she did housework for no pay with the stipulation that the person for whom she worked would speak only English to her and try to help her understand the English language. That went on for months and she became conversational in English in a halting way. Then Machio said, after his first year he says, 'now I want to buy a car; I want a car.' So he passed the driver's license test—I think he failed it once then passed it, both the written and so on. Then his wife said she wanted one, but she couldn't read English; she could only speak it. And of course they give you this manual with all these written instructions—what the signs mean and everything. She looked at the manual and she memorized everything in the manual. She went and took the written exam and got 100 percent on it without being able to read any words other than stop and slow and knowing what the signs meant.

The other thing she did to earn money—they wanted extra money see—so she hired herself out, when the strawberry season came around, to pick strawberries. That was a big thing in those days. She picked strawberries about twice as fast as anyone else because she knew how to sit on her haunches. She could go along like a rabbit according to my understanding. She could pick these strawberries and they were paid piecewise for it. She made more money than anyone else picking strawberries. Well, they went back to Japan and I visited them there on a most remarkable experience one time, but I'll tell you what happened to her. They moved in with his parents and she had to play the subservient daughter and when I was there with a friend and we visited them, we were invited to the old people's house and they wore kimonos and as we came in the door—we were professors, my friend and I, and we had finished the travel, that's another story—they were on their knees with their heads down like this because we were professors and we were ushered in. But Mariko, the wife of Machio, did not eat dinner with us. She served us; she was in the kitchen all the time. After the parents died and they took over the house, she began to do watercoloring and as time went on, her watercolors became very well-known and then finally, she became famous. When she died—some years ago now, not many, maybe five—she was the most talked about watercolorist in all of Japan. Her paintings are in museums and she made lots of money from her painting. Just an utterly remarkable couple. I feel very fortunate to have known them.

So that's—he's the most remarkable post-doctoral person I've had from these—I've had other people who are scientifically excellent of course. That's not really what I'm talking about. But in addition to the scientific excellence that Machio had, he had all his other things. They saved money while they were here so they could buy an American hot water heater and send it home and install it in his parents' house so that they would have hot water. When I came to visit them, they were very worried about the toilet facilities because they only had the traditional thing where a couple of porcelain raised footprints and a hole in the floor and you had to squat, you see.

[1:43:54]

KH: So a remarkable insight into Japanese living.

CP: Yeah.

KH: The occasion of this—I can tell you this visit to Japan with Machio. Otto Bastiansen, whom I've mentioned before, and I were in Japan for a meeting. Preliminary to that meeting, we were asked by Machio or by some other of the principles there, 'would you like to do something ahead of time?' I wrote and said 'yes, we would like to look around Japan

a bit a week ahead of time.' It was arranged that—Machio had a car now and was employed by an institute and becoming a very well-known scientist—would take us around in this car. The one thing I said to him was that I didn't want to live in any American- or English-style accommodations. I wanted to see what Japan and particularly rural Japan was like.

So as we travelled around for seven days. He had booked ahead of time accommodations in Japanese inns and all the time we were traveling on this trip, I never saw another Caucasian in these inns in which we stayed. We would come in, there would be a doorstep, we would be met with the hostess who would bow and give us our kimono, you know and take off our shoes. We were ushered to our room and there was some small snack bits would come and then a few minutes later the person would come in and say 'your bath is ready.'

The bath was not a shower. It was a huge place. This is more or less the norm. And there was a huge tub. It was about four feet deep and it would hold four or five people. It was full of scalding water. Then there were—away from this tub is a tiled area with soap along the wall and there's where you washed yourself very thoroughly and rinsed yourself. Then you got into the tub to soak. Then after a while you would get out again and repeat the process. That's what a Japanese—that's what we were treated to. Then we got out and we were sort of—how do you want to call it—totally relaxed with all of this.

We put on a kimono; we came back in. This was a Japanese room: no beds, nothing, you know, a tatami on the floor, a rice paper door. Then there would be a discreet knock and the hostess would come in, or one of the serving girls would come in her kimono bowing like this, set up a little table, put the stuff on it and sit there and serve us: pour the sake for us and my Japanese—we didn't speak any Japanese of course—but my Japanese friend Machio would translate and he says 'if we like the service, we are—it is part of the process to offer her a drink of sake.' We did that and she bowed gracefully and drank sake very nicely.

At the end, they would clear all of this away and then they would haul out the tatami that you were going to sleep on—a bed so to speak, the roll. That would be put out on a mat on the floor. And there we would sleep. At the end of every one of these rooms was a glass partition that opened onto a private—very small, not bigger than this room—Japanese garden, beautifully planted with plants. We went around to a number of these places and on one occasion on a Saturday night, you know the Japanese that are way out in the countryside, the men leave their family and they go out there and they have drunken orgies. At one of these places, we were on the second floor and I looked out the window in the morning and on this beautiful green lawn were a number of recumbent forms sound asleep, you know, where they had collapsed after a night of drinking inside. The Japanese don't look at drunkenness in the same way that we do. I've walked through Kyoto and there will be a guy lying on the sidewalk. The cops come along and very carefully pick him up by the armpits, drag him up to the wall and prop him up right there and walk on.

Well that's about as much as I can tell you on that but that trip is something few Americans have ever experienced and when I came back to Tokyo, Machio said 'you know, if Lise had come with you, we would have had none of this service because she would have been expected to perform it.' I told my wife that and she said it's good she didn't come along.

[1:49:11]

CP: Amazing. Well, as you look back on your career in science, what are some of the things that you are most proud of?

KH: Well I think the thing that I'm most proud of, Chris, is that I've had what I think is a very happy life in what I've done. My childhood was—I won't say actually impoverished—but we lived through the Depression, for a portion of which my father was out of work. The notion that I would have been able to do the things that I have been able to do would have been almost unthinkable. For example, I've travelled all over the world. I've made much more money than my father ever did. I have kids that are successful and I've had wonderful colleagues. I've had a research career that has kept me occupied even to date. I don't think I could have planned it any better actually if I'd had to set it out ahead of time.

On the other hand, when you look back on a long life, you see that there are certain points where you've made decisions that in retrospect, you are very happy with, but at the time, it was almost a flip of the coin. For example, I very nearly married somebody else before I met Lise and decided not to. It was touch and go. My whole life would have been different. I wouldn't have had any of the same connections and Lise is a gifted scientist, I wouldn't have had anywhere near the career that I've had were it not for the many contributions that she's made to it. We sat down last night and had a

conversation about a problem I'm having and we came to a conclusion about it. So you know how it is. There could have been, if I'd—one of my—I don't know if I've mentioned this, maybe I did. When I got my Fulbright and Guggenheim Fellowships to Norway, the previous year I had applied for a Fulbright Fellowship. The application was received too late. If I'd gotten it, which I was led to believe I would have if it had been received in time, I would have gone to Belgium. I would never have had any of this Norwegian connection. My life would have been totally different, except for that week or so delay in getting the application in. So when you're an old man like me you can think back on these career changing decisions that you've made.

So, all-in-all, I would say that I've just had a very happy life and it's still happy except I see my friends falling one by one. That's a depressing experience, but it comes to us all.

CP: It does. Well thanks very much. This has been a real pleasure for me. I'm glad we were able to do this.

KH: Yeah well I've enjoyed it.

CP: Alright Ken, thanks.

[1:52:45]