

Chapter 15

ANN M. HUGHES

Berkeley, California

June 12th, 1996

VM = Vivian Moses; AH = Ann Hughes; SM = Sheila Moses

VM: This is a conversation with Ann Hughes on Wednesday, the twelfth of June 1996 in Berkeley. Ann, can we start with how it was you became involved with the Bio-Organic Chemistry Group?

AH: This is where I had hoped to be able to start. I was working in Philadelphia at the Navy Yard in Aviation Medicine and after seven years of that I became bored with life, not with the people but with the work, it was not that interesting. So I wanted something new and different to do.

VM: What was your training?

AH: Physiology and pharmacology at Duke University. I talked to a friend of mine who knew what was going on in various labs. all over the United States and she said: "Well, why don't you write to two people at Berkeley, Hardin Jones and Melvin Calvin, and see if either of them can give you a job?" So I did exactly that. I never heard from Hardin Jones again in my life.

SM: Which year was that?

AH: That was the spring of 1952. In about one week I got a letter from Melvin and he said "Would you meet me in Baltimore on Sunday something or other, for an interview". So I drove to Baltimore, which was not a long distance, and because of the time differential he was somewhat late, or I was — something went wrong. But anyway I met with him there and after about 15 or 20 minutes he said "Well, why don't you pack your bags, get ready to move; I'll go to California and start your clearance". That's all there was to it.

VM: Had you ever been in California before?

AH: No, I had never been here in my life!

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VM: So, you didn't know what you were letting yourself in for but you'd heard good stories, I presume.

AM: I had a friend who had been here and I heard a lot from him and he was coming back to Berkeley and also my brother who was in LA said "Well, if you are going to California — he had just been taking teachers' training — if you are going to be in Berkeley I'll look for a teaching job up in the Bay Area, which he did, which all worked out very nicely. So that summer I finished up my job, gave my notice, packed everything. A friend of mine with her two children, ages 3 and 5, drove out with me across the country. She did not drive: I did all the driving. We stayed in motels all the way across the country. That's how it started.

VM: With all your worldly possessions in the back of the car or did you ship them separately?

AH: Oh, no. I had to have a moving van move the furniture. I had a lot of furniture. The one thing I brought in the car with me very carefully packed in the trunk, and it stood the trip perfectly, was my 100-year old Limoges china. Luckily not a piece got broken.

VM: Eventually you got here. Had Melvin discussed with you what you were going to do when you got here?

AH: No, not really. He just said "come on out, and I'll give you a job".

VM: And you didn't know what the job was about?

AH: I had no idea of what it was going to be about.

VM: What did you know of him before you ever made your first contact?

AH: Probably nothing, just that he was a professor at Cal who did offer me a job and I think I knew that he was at the Radiation Lab., though I don't remember even that. I had no knowledge of the kind of work he was involved in or what I'd be doing when I got here.

VM: So when you first met him, you met him only as your possible future boss and you knew nothing of his reputation or his publications.

AH: Nothing, not a thing.

VM: What sort of impression did he make when you first met him?

AH: A very business-like; I would not say he was friendly. He was not unfriendly, but very business-like and straightforward, making quick decisions, as obviously he did to decide in 15 minutes that he would give me a job out here. Not only did he give me the job but the Lab. paid all my travelling and moving expenses which I had no idea

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was going to happen, which I thought was rather generous for him to put in for all of that.

VM: So, you got here.

AH: I got here.

VM: What happened on arrival, what did you do?

AH: Well, I stopped in Southern California because my brother, Pete, was on leave of absence, living in Linus Pauling's house.

VM: Really — where was Linus Pauling?

AH: I think he was in Europe or something. Pete was there; he came to work with Linus and then Linus went off for a year or something and left Pete there. Owen was still down there, so we spent a week or so down there and then drove up the coast.

VM: Who's Owen?

AH: Owen is my younger brother who now lives in Alaska. But he had gotten a teaching job in Hayward. So my friend and her two kids and I drove up the coast and her brother, who had been the person I had known slightly, he had arranged a place for us to stay when we first got here, while I house-hunted. She stayed with me, I guess, two or three weeks and then went back to Philadelphia. I started work and I started working with Martha (*Kirk*).

VM: When you got here, was Melvin back by that time, did he see you?

AH: I don't remember little details like that. Oh sure, he was back. I had seen him in, I would have said, April or May, I think he was on one of his speaking trips or something, and I didn't get here until the middle of July, the end of July, something like that, and started work two or three weeks later, working with Martha.

VM: So you started working in Donner, did you?

AH: Right.

VM: So you must have made early contact with Bert Tolbert and other people.

AH: Well, let's see: was Bert here or was he gone? I guess he was here, but Ed Bennett was gone. One of the two of them was gone, I can't remember which. Bert was my first supervisor and, although this is not chronological, one of the funny stories — I had actually been working with Bert as my supervisor, not directly, for three or four years and I was busy at my lab. desk, I think I was counting fruit flies at that point, and Bert walked in with a visiting fireman. He said "Doctor so and so, I'd like you to meet, I'd like you to meet, I'd like you to meet...", finally I said "Ann". He said "oh yes. I'd like you to meet Ann, I'd like you to meet Ann", and I finally said "Hughes".

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He had drawn a complete blank, aft after we had worked together for several years. I never had very close contact with him actually in the sense of work. In the beginning of the course, working with Martha, she had all the contact with Bert or with Calvin and I just sort of did what she told me to do.

VM: For the record, that's Martha Kirk, of course.

AH: Martha Kirk.

VM: What did you start working on?

AH: We were studying, as I remember it, and this was the least interesting of my jobs, I never really understood too much about it, the respiratory metabolism of some compounds in animals. And Martha then got into, and I never actually helped her with that, I on with the animals, the respiratory metabolism of compounds with some of the patients in Donner. Martha had a big helmet she would put over the patient's head and sit them in an armchair and whether she injected the compound or whether they swallowed it, I don't remember.

SM: Where were these patients from?

AH: There was a clinic in Donner, I believe it was connected with the hospital on campus. But they (*the patients*) would come over to the clinic there and people like Hardin Jones (who were the others? I can't remember the names of the others) would see the patients there in the clinic. They were interested in the study of some compounds in various diseases. So she (*Martha*) would do the respiratory metabolism of these compounds in these patients.

VM: Looking at "hot" CO₂ being breathed out?

AH: Yes, but I never knew much about that. I wasn't until I got into other things that I got excited about what I was doing. I guess the first thing that I got really excited about was Calvin wanted me to decide, or help decide, whether D₂O (we were beginning to get into D₂O at this is point), whether D₂O would prevent cancer, or help cure cancer, in animals. I was working with mice on the D₂O metabolism — not on the metabolism but the effect it would have on tumours that I got going in them (*the mice*). It never really did much in that sense. But along the way, one day I thought to myself, I wonder, if it (*D₂O*) does all that it is supposed to do to cells, whether it would cause sterility. Of course they were drinking the D₂O, 30% D₂O in their drinking water. I put little males and female mice together and waited, and nothing happened. And I waited, and nothing happened! And, so I told Calvin about it. He immediately jumped on the bandwagon. He got very excited about this. So, I went on into this in greater detail. The first thing I did was to give only the males the D₂O; normal females and then did it the other way round. If the females had the D₂O nothing happened. If the males did, the males were sterile and there were no offspring. We wrote a short paper (I don't know if it was for *Nature* or *Science*, and one of my big moments in the lab. was the day I got a phone call from Washington,

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DC from the *Washington Post*. They had picked up on this story and wanted to know whether it could be used as a contraceptive!

VM: Expensive!

AH: I pointed out that, no, it wouldn't work because 30% of everything that a man drank for the rest of his life would have to be D₂O. You couldn't just take it occasionally — it had to be constant. I was at work when I got the phone call. Someone said "Ann, you've got a phone call from Washington, DC" and it sort of surprised me. It was one of my big claims to fame was that.

From there, then we started, Calvin wanted me to find out why/how/why it caused sterility. This is one of the things about working with Calvin, at least in my case and I think in the case of many who were not set some special goal to reach, you could go off on any tangent you wanted to, which was amazing. You didn't have to stay strictly on one thing. I got into *Drosophila* genetics and I got into sperm production and worked with an anatomist over at the Medical School, all sorts of things like that. Calvin, at this point, and when he was interested in something, he would be on your tail all the time. He would be off on a trip some place and he'd come home and he'd call me at home on a Saturday morning: "What's the latest, Ann? What's going on?" He just couldn't wait for results.

So that was the next thing I did. In fact, the *Drosophila* genetics, I guess, went on — and the mouse, these two projects, we never did find out why it caused sterility; it was something in the spermatogenesis, but we never could figure out exactly what stage was effected. This went one, I guess, the rest of the time that I was in Donner. It seemed to me by the time I finished that work, I went to Europe for three months and when I came back we had moved into the Round House.

VM: So that was in '63.

AH: Finally, that was in '63.

VM: You didn't take any breaks between the time you arrived and '63?

AH: No real breaks. I took a summer vacation and things like that but that was the first trip I had taken out of the country; it was to go to Europe for three or four months.

VM: One of the things we have heard from other people, I wonder whether the same thing happened to you, was that when they were originally hired, there was no statement about long they were hired for; it was an indefinite arrangement.

AH: That's right. He never said, I'll hire you for one year, five years, ten years. Nothing like that ever came up. He just said "Come out and you'll have a job". I don't think he even said what my salary would be.

VM: That was negotiated later, was it, or announced later?

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AH: It was announced. It was never negotiated. You didn't negotiate!

VM: I suppose with someone in your position, who had already been working for seven years, there was no question that it was a job you were there for, you obviously weren't going for a postdoc. But was very informal in those days, wasn't it?

AH: It surely was. I was thinking of trying to think of other little anecdotes and incidents of things that happened. I was going to write them down before I came over here so I'd remember to tell you about these things.

VM: We can see if we can prompt you in due course.

SM: As a matter of interest, or perhaps ignorance on my part, when you talk about the D₂O causing sterility in male mice, this was not a permanent effect.

AH: No. You would take them off the D₂O and gradually — this is how we semi-pinpointed the effect. We knew how long spermatogenesis took and so we could tell what stage of spermatogenesis was effected by the D₂O by the length of time after that they produced baby mice again. We never figured out exactly what it did to the sperm. We'd look at eggs of pregnant females— this I did over at the Medical School working with Laurel Glass — and I would mate the males with little females, then take the females who had been mated to the Medical School and we would take the eggs out of the oviducts and look at them and see if the sperm had entered yet, or whether they were trying to get in, or what they were doing and we could never really...

VM: There were sperm there?

AH: There were sperm, but they were defective in some way.

VM: The D₂O had no effect on tumours?

AH: No.

VM: What about toxic effects of D₂O on mice?

AH: At 30% there didn't seem to be any. At that level there didn't seem to be any toxicity. It was just that it made them...

VM: If you went up, higher contractions?

AH: I don't know that I did. I don't remember now why I picked 30% or whether Calvin picked it for me.

VM: Of course, the first time I met you was in connection with an extension of that where Calvin suggested that Ozzie (*Holm-Hansen*) and I look at the effect of D₂O on algae. That was '56. That must have been exactly the time you were doing it. Where were you working when you first arrived?

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AH: I was always on the third floor (*of Donner*) and I was in the little lab., very narrow lab., next to the great big lab. As you went down the corridor from the back door, go past the office, there was a big lab. on the left and a big lab. on the right, with the stockroom in between. Mine was the little lab. beside the big one, the one where they made plates in the hood. That's where Martha used to teach people how to make plates. I used to sit there and sort of laugh to myself. She had such a strong Southern accent and all these foreign visitors I know, I'd listen to her explaining what to do, I know they did not understand what she was saying, because, in a sense, she didn't speak English, she spoke some Southern language. They'd stand there, sort of bewildered, as she was telling them what to do. I felt sort of sorry for them. But they learned, she made sure that they learned. That was in the hood in my little lab.

VM: Did you share the lab. with anybody?

AH: No. That was my lab.

VM: People have commented about the social interactions in ORL as being a relatively open building: what was it like in Donner, where you had individual rooms?

AH: Well, there wasn't so much social interaction, at least in the beginning. Actually, one thing my lab. was, it was a meeting place during coffee hour. Everybody tried to crowd into that little narrow lab. of mine to drink a cup of coffee. That's the one really social thing we had. You didn't get to know other people as well, or as soon, unless it was somebody you were working with.

VM: What did you do about things like lunch, did you have lunch together or go your separate ways?

AH: I lived close enough that I always went home for lunch. I walked home, ate at home and then came back again. This may have been part of the problem, not necessarily that I went home for lunch, but that we didn't all work together in one big room. When I first came, I found it very difficult to have any social life and make friends with people. When I had been in Boston, my boss and all the other big shots in the lab., took turns. As soon as I started on the job there, they invited me to the house for dinner. So, I developed a circle of friends. Out here, nobody invited me to their house, not one person. Finally, I just took the bull by the horns and I gave a Christmas party and invited people to my house. This sort of broke the ice. From then on, I had a much better social life. I would invite a few over for dinner now and then and gradually they would start inviting me. This is what made me feel in the beginning that Californians were very cold and uninterested in outsiders. Of course, in the beginning I was an outsider. They didn't care about other people because they were so busy with their own little lives.

VM: You think that this was the characteristic of the group in Donner Lab., that people didn't socialise a great deal.

AH: I don't think they did.

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VM: Did you notice a contrast between that group and the ORL residents?

AH: We really didn't get to know the ORL residents, you see, except at the Christmas party, or something like that. We were in our building, they were in ORL. Unless we went over there...this is why I don't remember a lot of the people you have mentioned because they were in ORL. I was in Donner.

VM: And you didn't move between the two very often.

AH: With my job, I didn't have to, so I didn't. If you were doing something that you'd have to go over to ORL for chromatography, or something like that, you'd go back and forth. But I had no reason to go over there, so I didn't, except for the Christmas party, which we had over there, which was much more fun than the later Christmas parties. In the old days we had a lot of fun at the Christmas party. Do you remember that we used to exchange gifts without knowing whom we were preparing a gift for? We knew who we were preparing it for, but we never knew who we got one from.

VM: As I remember, and I think Dick Lemmon reminded me of this, there was an upper level of 25 cents or something like that.

AH: Perhaps a little more than 25 cents but it was a very low level. You had to be ingenious to think up something, and people were.

VM: I remember, though, by the time we got there, I remember you, and I am sure Sheila does as well, as actually being one of the very active social people in the place. Everybody knew you and it seemed to me that you became friendly with many of us.

AH: I think I did, not in the lab. but outside the lab. I think I took it upon myself to invite all of our visitors to my home. Particularly, every Thanksgiving I'd round up as many foreigners as there were and have them over to my house for Thanksgiving dinner, which paid off in the long run. When I came to Europe, everybody had said when they left to go back home, they said "come see me when you come to Europe". I think out of three months in Europe I spent about four nights in hotels.

VM: Who have you kept in touch with from those days?

AH: Who?

VM: Yes. People who don't live in Berkeley, I mean.

AH: Of course, Norma Werdelin and I were always in touch and Helmet Simon and for a long time Helmut Metzner and Luise (*Stange*), you folks, the Freys and there was somebody else from London, John...John somebody?

VM: John Barltrop?

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AH: No, it wasn't John Barltrop. I can't remember the name but somebody...I think it was the first family that I visited when I went to Europe in 1963; they lived in London and it seems to me that they moved to Liverpool.

VM: That's Duncan Shaw.

AH: Oh, Duncan Shaw; was that it? I couldn't remember the name, even. I stayed with them. The Freys were in Southampton...

VM: ...or Reading; I don't remember; they are there now but.

AH: I think at that point they were in Southampton. I stayed with them. Some of the people I kept in touch with were ones I didn't know until after we moved to the Round House. I have kept in touch with most of our foreign visitors for several years and I still do with a few of them. As I said, our Russian friend Zofia (*Kasprzyk*)...

VM: Polish.

AH: Ah, that's right, Polish not Russian. We kept in touch until maybe five years ago, which was a long time

SM: Did the Donner group not participate together with the ORL group at the Friday morning seminars?

AH: Seminars, we were together for seminars, that's right. I was always scared to death because in those days — maybe Dick or Ed has said this — in those days you never knew who was going to talk when. We would all get (*together*) — I think they were in the (*Donner*) Library, weren't they?

VM: So I've heard; it was before my time; in the Donner Library.

AH: We'd all get settled down and Calvin would walk in, and he would look around and you would think "Is it I, Lord?" And he'd say "Ann, why don't you get up and tell us what you are doing?" You had no time to prepare at all; you had no inkling, even a day ahead of time, so you had to be up on what you were doing all the time, just for the chance that you might be the one called on.

VM: Did Calvin go into Donner itself a lot, did he come and talk to people who worked there and discuss detailed matters?

AH: Not a lot, I think. He seemed to spend more of his time, his office was in Old Chemistry, wasn't it?. I do remember, Norma told me this, that in those early days there was quite a rivalry between Marilyn and Norma as to who was going to be Calvin's secretary. When he called the office where they both worked, which was Dick's office, they both would grab a...

VM: Tell me about the secretaries. Nobody mentions secretaries in great detail. Who were the secretaries?

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AH: Marilyn (*Taylor*) and Norma (*Werdelin*).

VM: When we came, there was one called Dee Lea Harrison, do you remember her, she was in ORL.

AH: There may have been one over there; if so, I don't remember them very well. There were two in Dick's office and, as I say, it was Marilyn and Norma until Norma left and then, it seems to me, that Jo Onffroy took Norma's place. I don't remember anybody in the time between those two.

VM: Alice Holtham was before your time?

AH: I remember her, but she was over in ORL, wasn't she?

VM: I don't know. We're going to see her; I haven't got her story yet.

AH: I think she was in ORL; I don't remember her very well. I remember Pat, the chemist; I don't even remember her last name. She worked not in the lab. next to my little lab. but the one across the hall and Dick would remember her name. I really don't know what she did. She was a chemist, either an organic or physical chemist, I'm not quite sure what she was doing even. It was still while we were over there (*in Donner*) was the time that Ed Bennett was chopping off the heads of rats, that was in the big lab. next to me, and he and...I guess Marie (*Alberti*) was there then already (Marie came in 1959) she would drop a rat in a little cage in a container of liquid oxygen.

VM: Oxygen!?

AH: Yes!

VM: Really?

AH: We had to be very careful about fires and things when they were working on their rats. Big signs up: "Open oxygen". This was the way they could kill them the fastest. Then, you would hear Marie and Ed, I guess both of them, pounding almost with sledge hammers to chop the head off...

VM: ...of these frozen mice?

AH: ...of rats, it's even worse with rats; chop the head off and then Marie would open the head up and take the brain out.

VM: To come back to the secretaries, for a moment. They had an office, did they?, the two of them Norma and Marilyn, and the two of them occupied the office, there was no one else in the room?

AH: No, but Dick's office was off of theirs, with an inner door. As I remember it, that office did not have an access to the corridor. You had to pass the secretaries to get

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into his office. I am trying to remember where Bert's office was? It couldn't have been both Dick's and Bert's at the same time.

VM: Bert might have left by then. I think Dick took over from Bert, didn't he? (*Dick Lemmon took over the office that Bert Tolbert had occupied when Bert Tolbert went to the University of Colorado in Boulder in 1957.*)

AH: Maybe. I can't quite remember. The two desks and as I there was a lot of rivalry between those two women and, of course, another problem with them. Marilyn used to always complain. Norma was an inveterate smoker and the air would be blue. After Norma left, Jo Onffroy was an even worse smoker. The air was just blue with cigarette smoke. In those days, you couldn't tell them not to smoke in the office. I do remember that.

VM: In those days, of course, you could eat in the lab. as well.

AH: On, sure. We all did. When Ed got back from Europe, there were six desks in the office, right at the top of the stairs, it was right next to my little lab., and Ed and I, Pat probably had a desk in there; there were six of us that at various times shared that office.

VM: That was your office space as distinct from your lab. space?.

AH: All you had for office space was a desk. Whether we even have one drawer in a filing cabinet, I don't remember because it was so crowded with six desks in it; that's all you had.

VM: Was it "matey" with people around, did you feel close, or was the presence of other people a hindrance to you getting some peace and quiet? What was the atmosphere in the office like?

AH: Usually it was very quiet in there, except maybe at lunchtime. Since I didn't usually eat lunch there, but otherwise people would come in and sit quietly at their desk, doing their work, not talking to anybody else — they wanted to get their work done.

VM: What did you do about writing papers and reports? Did you have typewriters then or did you do it in longhand?

AH: It was all done longhand. I guess then we took them up to the front office for Norma or Marilyn to type up. Those are the details that I don't remember too well. I remember that not only did I have to write reports but, particularly when I was doing the sterility work, I had to make charts and graphs of the progress of the sterility in these little mice. I guess we took them over to the other side of Donner. We did a rough drawing and there was a drafting place (*room*) in the other half of Donner where they would make the final copy.

VM: This person was not part of the Calvin group?

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AH: No, a sort of a service. Do you remember Peggy Smith? She was in that office, too, but I don't think we were all there at the same time. I guess at one time, Bob Noller...

VM: Don't know him.

AH: Well, he was a grad. student, and he's gone now (*i.e. he died*); he had diabetes very badly. He and his wife went backpacking with a friend of mine and I, we introduced Bob's wife to backpacking one summer; she never got over it.

VM: Then there were the quarterly reports. Do you remember those?

AH: I remember them from later. I guess I had to write then but I don't remember writing it. The paperwork just doesn't stick out in my mind particularly but I guess I did; probably had to particularly when I was on my own. When I was working with Martha Kirk, I suspect she did the writing; I was sort of her assistant.

VM: You said when you were on your own. Eventually...

AH: I mean when I got into this sterility business, the D₂O business, and things like that. Then I was more or less — I guess Bert sort of supervised me, but I was more directly responsible to Calvin.

VM: So you had periodic technical discussions with him.

AH: Marilyn would call you and say "Dr. Calvin wants to see you", and you would tremble in your shoes, pick up your papers, and go travelling over to Old Chemistry to talk to him about what you were doing.

SM: How many years did it take before you didn't tremble in your shoes at the prospect of Calvin? I'm sure you didn't later.

AH: Eventually, I guess I didn't. I was never really comfortable with him scientifically. Socially, that was all right. But in a scientific way I don't think I was ever completely comfortable with him.

VM: During the time you were doing this work, who was notionally in charge of all the animal work? Was it Melvin himself? Was Ed (*Bennett*) responsible?

AH: I guess Ed was. It may be that at this point I came under Ed's jurisdiction. Of course, there was not much animal work done. This was it; I was the only animal physiologist in the lab.

VM: Did you have any visitors or students working with you?

AH: No...

VM: Never?

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AH: ...never. This is why it was so easy to fire me. I couldn't bump somebody further down the scale. When you were told that your time was up, you could always bump somebody who had less years of service. But the hierarchy was very clever, they knew that I was the only physiologist. There was nobody I could bump so they could fire me and I had no recourse to reinstatement.

VM: But that was very much later.

AH: Yes. But I mean, when it came about. This was the thing. I am saying this because you were asking who was in charge of the animal work. Well, Ed with his rat brains and of course that work was really not done, except cutting the heads off, in Donner. It was all done in *(the) Psychology (Department)*. So I really was doing the animal work *(for the entire group)*. Which, I think, that later, again it was not during Donner time, but later they bought me this trailer up on The Hill, they bought a trailer and put it up on The Hill so I would have a place to keep animals of my own.

VM: You mention that eventually you were fired, as you say. You really mean "fired" from the lab.? Encouraged to take early retirement? How did they sell it to you?

AH: Marilyn called me one day and I was up in the trailer working away. She said that "Dr. Calvin would like to see you". I said, "OK". I had no idea what he wanted. I came down, went into his office, and he sat me down and said: "Ann, in three months you don't have a job". Period; exclamation point!

SM: Which year was this?

AH: Seventies; I don't remember. Well, I'd been working there 27 years so ass 27 to 52: '79, I guess. There was no suggestion: "Would like to work for somebody else, would you like me to get you a job on The Hill in a different department, would you like this or that?" He just said "In three months, you don't have a job".

VM: Explanation?

AH: I found out later it was strictly financial. He could fire *me*, save my salary, the overhead of the trailer, all of this, the cost of my animals, and save a lot of money.

SM: Because it was a discrete operation.

AH: Yes.

VM: In your experience — another point we haven't mentioned to anyone else— in the 27 years that you were there, was anybody ever fired that you know about?

AH: Not out and out fired. There were a others whom Calvin found a job for in other departments. But he didn't do that with me.

On a completely different subject (we can come back to this if you want to)...

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VM: No, I think we've explored that.

AH: ...the other very exciting thing for me was that I was the first person in the department, ahead of Calvin or his wife even, to know that he had won the Nobel Prize.

VM: How did that happen?

AH: It was in the days that I was mating little mice at all sorts of hours of the night so that I could take the females over to the Medical School the next day to get the eggs out. I was driving home from the Animal House; it was the old Animal House in those days, we hadn't built the new one yet.

VM: Where was it?

AH: It was close to where Bldg 90 is, I guess. It was over on the other side of the Hill campus from where the present Animal House is; way the other side. I was driving down, sometime after midnight, maybe one o'clock in the morning, driving home and I had a news broadcast on. The announcer said that "Melvin Calvin has just been awarded the Nobel Prize in Chemistry". I nearly dropped the steering wheel.

VM: What did you do about it? Did you call him?

AH: He wasn't even in town. He didn't know for another day or two 'til they could find him. I think he was in West Virginia. He was on a speaking tour. Gen was home. They called her the next day, I think, but then they had to find Calvin to tell him about it.

VM: So what happened to you next morning? I suppose it was public knowledge, was it, by them?

AH: Well, I don't know. The morning news had carried it. I remember I dashed into the lab. at a reasonably early hour and started saying "do you know?", "do you know?", "do you know?". Most people in the lab. hadn't bothered to turn on any morning news, and the reaction was "What?" It was really quite exciting.

VM: I don't know remember expected that was. Do you remember?

AH: I don't know whether it was or not. You never know about these things.

VM: I vaguely remember, but I have to say it was very vague, that there was some sense every year around Nobel Prize time, things got a bit tense. But I can't really remember it to be true.

AH: I had no idea what was happening. I didn't notice any tenseness. Maybe Calvin himself and the big shots got tense and maybe Marilyn and Norma did. I had no idea that he was a candidate even, you see.

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SM: Do people know when they have been nominated?

VM: I think they often do know.

AH: You mean they know before it's made public?

VM: They know they have been nominated.

AH: I think so. Because my brother was nominated twice. He never actually made it but he was nominated twice for the Nobel Prize.

VM: And he knew that?

AH: He knew that. Or at least Eleanor, knew it, his wife knew it. She's the one who told me. So I guess he had been told that he was nominated.

SM: You know if you're in the running.

AH: You know that you're in the running.

VM: You remember the party at his house, in celebration of his Nobel Prize, although I can't remember whether it was before he went to Stockholm or when he came back?

AH: I don't remember the sequence of events and, of course, there also was a party in the Faculty Club. I can't remember which of those came first, the one at his house or the one at the Faculty Club?

(Tape turned over)

AH: I went off the Europe for three months and, when I got back, all of my belongings I had carefully marked what went here what went there — they picked out a workbench for me; everything was moved for me. I was not at all involved in that business of moving.

VM: So there was no equivalent of the big white table in Donner in terms of a meeting point?

AH: No, you met in each other's labs., I guess; you didn't really meet except for the business of discussing your immediate work. There was no big blackboard where you could diagram what you were thinking about or spread papers out as we did on the white table and, as I said, we did gather in my little bitty lab. for coffee in the morning. But other than that, we didn't really get together.

VM: You are one of the people, of course, who have really seen the development of the group from what it looked like inside Donner, what you remember looking like inside ORL, and later what it became in the round building. What have been your thoughts about a group of that sort? Did it strike you always as being a remarkable occasion or a run of the mill set of people?

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VM: What did you think of the Calvin group as a whole?

AH: I guess I thought it was rather special. I didn't stop to meditate on this sort of thing much.

VM: If we encourage you now to meditate a bit. What does it look like from the standpoint of your experience, looking back at it?

AH: What do you mean?

VM: Well, what do you think — the group was clearly successful in some way.

AH: Yes.

VM: Calvin got a Nobel Prize, clearly they made discoveries of significance; what do you think was important about that group and the way it was put together?

AH: I do think that it was the interactions of the various types of people that he brought together, you might say the various disciplines. He had such a variety of disciplines of people who could work together on a project, if it was necessary. You could work on one little project by yourself, or you knew that so and so knew something about how to solve your problem maybe, and go and talk to this other person who had more knowledge than you did in some field of endeavour. It didn't happen too often to me, at least not so much in the group.

I did have to go outside the group because we didn't have any geneticists but I did go down to LSB and work with Curt Stern and his people; they were very good to me. I guess Calvin may have called them and asked whether it would be all right if I consulted with them. They were the people who got me started on the *Drosophila*, how to grow them, how to make up the media for them and all of these things. I remember in connection with that, the media was similar to hot corn meal. You had to cook it up and it was similar to hot corn meal. For some reason, the Office of Safety, or something, wouldn't allow it now, I'm sure, but I was mixing this stuff up in a great big 4 litre glass beaker and it broke one time. Of course, I always wore ankle socks. The whole beaker went right down my legs. I went up to the office and grabbed the keys to the lab. car — this was in Donner, in my little lab. — grabbed the keys to the car and dashed up The Hill to first aid. The thing that was funny, when I got back down, one of the high wheels up on The Hill called me and said "you were driving that lab. car awfully fast through the lab". I told him that I had just poured hot liquid down my leg and was heading for emergency, He said "oh, well that's all right then".

SM: You positively enjoyed the difference in the availability of group interaction and sharing thoughts with other people, once you got into the Round House?

AH: I think so, yeah. To me it wasn't a more congenial group, because they were the same people, but it seemed more congenial because you had a chance to sit and hobnob

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with others and share experiences, share knowledge, this sort of thing. In Donner I spent almost my entire time in that little lab. and when I was doing the *Drosophila* I mean all my time. I worked 18-20 hours a day sometimes, right through the night, sitting at my desk counting *Drosophila*.

VM: But doing it by yourself?

AH: By myself. There would be grad. students there maybe until after midnight working on their stuff in their lab., but I would be sitting at my little desk just working away, all by myself.

VM: When you published, did you write papers by yourself, or did other people collaborate with you?

AH: Most of them were with Calvin, of course. Hughes and Calvin, Hughes and Calvin, Hughes and Calvin.

VM: What was it like writing papers with Calvin? What was it like for you, we have all had our separate experiences. How did you find writing papers with Calvin?

AH: He really was very good and constructive. I would pretty much write it and then go over to his office and he would have read it through and made notations. We would sit down and in a very friendly way, he would say "Well now, I think we ought to say this, this way", or "I'd like to change this sentence". It was always done in a very friendly way. At that point I didn't really have any quaking in my shoes because I was the one writing a paper.

VM: (The microphone has got a little bit twisted.)

AH: Because, as I was saying, I was the one writing the paper so I had a little more or prestige or something then and he was...

SM: Clout!

AH: A little, for the time that I was working on the paper with him.

VM: I suppose he must have done this himself some of the time, but in my experience, and apparently in yours, he never actually did the first draft of any papers, or any of the collaborative papers.

AH: Not that I know of. Certainly not in my experience. I did the first draft. I can't remember whether Ed would go over it with me before I went over to see Calvin. Ed certainly didn't do any writing but he may have gone over it with me before I went to see Calvin. Because, before that when I was working under Bert with Martha, if there were any papers written it was Martha and Bert who wrote the papers. Martha, Bert and maybe Calvin.

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VM: What did you think — what *do* you think of the Round House as a concept which sought to carry on the best of what had previously been the accommodation?

AH: I think, I still think, and I thought at the time, and I still think that it's a good idea, whether they still carry on as they did when we were there, I don't know what goes on over there now. I haven't been in the building in a good many years. I don't even go in for their annual Christmas party. I don't go near the place.

VM: Well, it's obviously changed because there's a different management.

AH: A different management, but the concept, I think, is a fantastic concept and to do it you've got to have people of a lot of different disciplines in the same building. It wouldn't work that well if you were all chemists, or all biologists, or all physicists or something else. I think it has to be the interdisciplinary thing to have its value.

VM: I think there were some other characteristic things. I wonder what you think. The fact that it was a single organisation, virtually with a single budget, meant that all sorts of things could be unified — the stockroom and the secretaries — you didn't have to parcel up between different jurisdictions. It all belonged to everybody. That's remarkable, isn't it?

AH: I think so. I know I never really worried about money for equipment or money for animals. It was there within our general budget. I didn't think, well let's see: because I'm working with animals I have to get money from a different budget or things like that. It was all there in one big bag.

VM: So for the fifteen or sixteen years you actually worked in the Round House you found it a good place to work

AH: Yes.

VM: Let's also come to the extramural activities, the countryside, the mountaineering and all the other things. You've always been very active in that sort of thing. Who were the people, did you go climbing and did you go out for weekends with lab. people or were they mostly from other sources?

AH: They were usually from other sources, other friends of mine. I would say that for the first fifteen or twenty years we took a 10-day backpack trip in the Sierras and, as I said, one year this friend of mine, who is very good at this, and I would go. I had done backpacking when I was a kid with my brothers up in New England, but she was the one who introduced me to the Sierras. And then we introduced Bob Noller and his wife and, sometime later, after we were in the Round House, I did take one of Rod Park's grad. students backpacking, but that was with my brother. You see, I also had my brother, his wife and two small children, and we did a lot of things together.

VM: Did they live locally?

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AH: They lived in Hayward. So trips to the beach or backpacking or picnics or this or that were more with him and the family than with people from the lab.

VM: I think it is becoming fairly clear that the people who were here on the short-term basis were concentrated much more socially in the lab. than the ones who were permanent residents in Berkeley. Hardly surprising. That's what we tended to see at the beginning.

AH: As I said, I got involved in entertaining all these foreign visitors as they arrived and I know some of them have said to me over the years that I was always so easy to understand. I think this was partly in contrast to Martha with her southern accent. Because I knew that these people — they spoke English but they didn't understand the way we speak so I would always talk slowly and carefully to them and many of them have remarked to me "well, you're so easy to understand".

AH: You do speak very distinctly and I think, in contrast, Martha had this strong Kentucky accent, as you say, and maybe it was more difficult for people who were not native English speakers.

SM: Maybe New England is more than half-way to Old England!

AH: Could be.

SM: Speech-wise.

AH: I don't know. I would speak more slowly, I think, to these foreigners. I may speak rather fast sometimes, but with them I would speak quite solely and distinctly if I could. I guess we went on trips, I don't remember...Oh, yes. There was another backpack trip; now this may have been after we were in the Round House, though. There were two Germans, twin brothers, Chris and what was the other? They were in ORL.

VM: Not Christof and Dieter?

AH: Christof and Dieter.

VM: Palm, wasn't it?

AH: Palm.

VM: That was later; that was Round House time — I think.

AH: I took them backpacking one time. The guy from Sweden (*Goran Claesson*), I took him backpacking one time. So that I did get a few people out.

VM: In addition to the Christmas party, there was a lab. picnic, wasn't there?

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AH: It was up in Tilden Park. We would have a big picnic with hot dogs, hamburgers and stuff like that. I remember one of those picnics, I guess it was fairly early on, I got to baby-sit Ed Bennett's oldest child — he was so cute, he may have been two years old, or maybe less than that, I got to baby-sit him at the picnic.

VM: At the picnic?

AH: At the picnic; yes, just at the picnic. Was this while we were in Donner and ORL? Calvin used to have picnics at the ranch?

VM: That was later. The ranch came after he got his Nobel Prize. He did have picnics there.

AH: I can remember him standing over, because he did all the barbecuing, he would stand there turning chicken legs by the dozens, or by the hundreds.

SM: Gizzards also. I remember being offered gizzards.

AH: I don't remember that. He stood there himself, perspiring, wearing shorts and I remember the first picnic we had up there. Before the picnic it had been announced or we were warned about poison oak. There was a lot of poison oak there. The seminar morning before the picnic I came in with a branch of poison oak between two sheets of plastic, or in a plastic bag, and put it on the seminar table. He looked at me and asked "Ann, how did you get that". I said "well, very carefully, with gloves and tongs". Then he showed it to all the people. The foreign visitors didn't know what poison oak was. He was really amazed that I had managed to get some, without succumbing to it, and bringing it to the seminar for everybody could see what it looked like.

VM: Thank you very much for sharing all these reminiscences with us. We will build them in somewhere into the story.

AH: Good!