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Begin Tape 1

RF: —but Arthur [Dr. Arthur V. Williams], I knew from—he was a year behind me [in school], and he commented on being about the only Jewish boy at Crafts School. He went to that public school. But there were others. I mean, my family was there. But he was right; it was mainly an Episcopalian, Protestant group of fellows there, and girls. But there were some Jewish people there, some who lived below Broad Street—a few like our family—and some from the King Street area, too.

DR: Did you have the same experience he had with kind of the—I don’t know if it was specifically antisemitism, but the sort of rough—

RF: No, I didn’t have any—we all played together. I was on Colonial Street, and there were a lot of children—some older, some younger—but lots of children all the time. We played and we had games and we played football together. There was no antisemitism expressed there. Now, there was a group of Catholic boys on Queen Street [that] we called the Queen Street Gang. I
remember that. They were sort of tough and we sort of avoided walking along there, where a lot of them were hanging out.

DR: Do you remember the marble games? You remember, he talks about—

RF: Yeah, we played marbles in school, in the playground. I remember the playground at Crafts School that he talked about. It wasn’t dirt [ed.: sounds like “free”] [laughing]. People played marbles there. You got in fights there sometimes—fun fights but, once or twice, real fights. The girls—he was right—the girls were on the other playground, on the other side of the school, so you didn’t have recess with the girls, just the fellows.

DR: Do I remember him saying that the teams would be, sort of, by block—different little neighborhoods?

RF: Yeah, yes, that’s right. We were the Colonial Street group, and we played against the people from Rutledge Avenue and things like that—the Queen Street group. Yes. And we would play on open playgrounds sometimes—not playgrounds—open lots. We would play football or baseball. He was right about finding sharks’ teeth all over in the lots. I wasn’t sure that was because Charleston was underwater at one time in those areas, but I thought it was because they dredged up material from the bottom to fill in and brought up teeth that way, brought up relics from the bottom. I’m not sure, though. He may be right.

DR: Do you think, Dr. Furchgott, that your scientific interest was piqued at the Crafts School?

RF: Oh no, it wasn’t at Crafts School. Crafts School had very little to offer [laughs] in the way of science. It piqued—my interest in science and natural history started because I went to the [Charleston] Museum summer courses and summer field trips. I think I mentioned I knew Miss Bragg, who was the head of the museum, and some others who were—Mr. Chamberlain, and so on. I don’t remember all the names—Emma Richardson was a person who was there, too.

DR: Was she the lady who did shells?

RF: Yes.

DR: Okay, because last time we couldn’t remember her name.

RF: Yes, yes.

DR: Okay. So they would organize—were they weekend field trips for kids?

RF: Usually they were, you know, a day. Usually it would start pretty early. This was in the summertime, when school wasn’t in session.

DR: Boys and girls?
RF: Yes, as far as I remember.

DR: Was it something your parents had to pay for or—

RF: I don’t think so. I think it was for free. I’m not sure, but I—there was one book—I still have it, in rags, sort of, called *The Sea Beach at Ebb Tide*, which is a wonderful book. It’s a catalogue, in a sense—not a catalogue, but a listing of species of shells and species of sponges and species of this and that, things you find on the beach, a very good one. But it was published about 1903, 1910. Then I had bird books, too. So that really got me interested in—through nature—interested in science, and I read some things. I told you a little bit about my father subscribing to the *New York Times*, Sunday *Times*.

DR: No.

RF: No? In the Sunday *Times*, there was a science section—not a section, just a science writer would write about something in science and that interested me. I met the man, eventually, when I went to New York. He was older then. His name was Waldemar Kaempffert; that’s [laughs] a difficult one. I don’t know that I could even spell it exactly.

DR: Kaempffert?

RF: Kaempffert, a German name. K—something like K-A-M-F-E-A-R-T, or something like that. It’s not that important, but I just remember the name because it was an odd name.

DR: Your father actually received the *Times* on a daily basis?

RF: No, no. Sometimes. At times . . . we got the Sunday *Times*, just the Sunday *Times*. It had a rotogravure section at that time. You know what a rotogravure sec—that’s the picture section and it’s brown. It’s a special way of printing pictures that they used at the time. It had sort of a brownish color tone. It had pictures, news pictures, and titles about what they were about and so on, but that was only on Sunday.

DR: What was your father’s interest in the paper?

RF: I think mainly from the standpoint of merchandising and that sort of thing—maybe. Maybe not. My father was—although he didn’t go through high school, he was a pretty bright person, and he became the first 33rd degree Mason in his lodge here, I think. I’m not sure whether he was the first one, but it was supposed to be an honor. It’s something—none of his sons went into Masonry, though. I’ve mentioned that already.

DR: You mentioned that you thought he was disappointed.

RF: Yes, yes.

DR: It was a generational thing, I guess.
RF: I guess so. I guess so. I imagine his father was involved, too.

DR: *Hmm.*

RF: I think, I would g—maybe, maybe not. I know my uncles were—my uncle Oscar was.

DR: But just a question—your dad did not require you to work in the store?

RF: No, no requirement to work in the store. When he had his own small store in Orangeburg, we would help out on Saturdays, wrapping things or doing things like that. But no, I didn’t work in the store. No, I’m sure he was encouraging us to go on in our schooling, and he was very proud of our having good marks, and helped us, you know, wanted us to go to college.

DR: What about your mom?

RF: Well, she was sort of quiet, a very pretty woman. I don’t—she wasn’t involved that much with bringing up the children. She did, I mean, but we had nurses for a while, anyway. But once we had to move away during the Depression we didn’t have much help anymore. I guess we must have had a maid or someone come in. Well, I only know her in a way—I lived there through high school, then I was away in college. I guess I was there in the summers, too.

She was—Max would know much more about her. She was interested in the sisterhood here and certain things, and some of the things that Arthur Williams wrote about, like Mrs. Octavus Roy Cohen’s reading circle. She was involved with that and the sewing circ—somebody’s sewing circle. But it was mainly domestic type of living. But when we moved to Orangeburg—I don’t know what our finances were, but they were such that we moved because of the finances—my mother helped in the store. She took over—didn’t take over, but she took part in terms of bookkeeping. Although, my father was a bookkeeper. I shouldn’t say in terms of bookkeeping; she took part in selling and keeping records and so on.

DR: Do you know what kind of education she had?

RF: Just through high school. She was very bright in high school, but that was the end of her education.

DR: Do you remember if your parents were readers? Did they have a lot of books around the house?

RF: Not a lot of books. They read some, and my mother, I think, read more than my father. My father read the newspapers. I really couldn’t say, because you’re not that interested in your parents at that time. [Laughs.]

I know Arthur Williams was very interested in his father. He writes a good story about him. But my father—certain things I remember. We lived next to the Grimballs, Judge Grimball’s family; later he became a judge. This is John Grimball. Billy and Jack and Fanny were all friends. My father played the violin, to some extent, and Mr. Grimball played the piano;
sometimes they would play together. I just remember that faintly. But none of us were given music lessons, which was interesting. Maybe we didn’t want them. Boys at that time tended to shy away from music a little.

DR: It’s just interesting to speculate how someone like yourself achieved what you have achieved in science, coming from your background, which was more mercantile than intellectual, would you say?

RF: Yes . . . and my father didn’t like the mercantile business in particular. I mean, when he was in Orangeburg, he had a small store, and then we moved to Florence, rather, first to Goldsboro, North Carolina—I told you about that—so that I was able to go to the University of North Carolina come my sophomore year in college. That only lasted a year. Then he went to Florence where my uncle Oscar had a store, and Uncle Oscar encouraged him to set up a smaller women’s wear store, with a little less expensive clothes in Florence. So he was there and Max went through—finally finished high school in Florence.

Then my father moved back to Charleston, exactly when, I’m not sure. It was while I was in graduate school; I think it must have been in the late ’30s, or practically 1940. He opened a women’s wear store, probably around 1938 or 1939 on King Street. Apparently, it did better than any of the previous small stores he had. But then the war came, and he sold the store. I don’t know whether he sold it after or before the declaration of war. He sold it to someone who did very well with it. I’ve forgotten.

He took a job at the navy yard, and he did—whether it was clerical work—I don’t think it was mechanical work, but he was good at figures and numbers and keeping records and so on. So he worked at the navy yard during the war. Of course, I was away all this time, so I don’t—I mean, I would see them occasionally. He worked at the navy yard, and then he, after the war, he began—he didn’t want to go back into the retail business, women’s wear, anyway. He took a job with a friend of his, Mr. Joe Fatman, who had a business-supply business, in other words, stationery and that—soft goods.

He took a job with this man, who had been a friend for a long time but, after a few years, he didn’t like working with someone like that. He opened up his own office-supply business and had his office in the apartment where he and my mother lived, and did very well with it. Everybody was pleased with his service, because he went out of his way to get things on time. He was a good businessman, in that respect, and he enjoyed that work. He actually made—he and my mother didn’t require a lot of funds. I remember that he used to help out with me or with Max or someone.

DR: Financially, you mean?

RF: Yes.

DR: You’ve already talked a little bit about what impact the Depression had on your dad and his business but, as a child, were you aware? Well, you weren’t really a child; you were a teenager when—
RF: . . . No, I was a child, and during the Depression—because the Depression was in the latter part of the ‘20s and the early ‘30s, and that’s when we moved to Orangeburg. I remember the bank failings in Orangeburg. I don’t think we had money in that bank, but some people—I remember people lining up at a bank that was closed down. . . . When we moved to Orangeburg, I was thirteen.

DR: You know, something else that—and you know, we will get on [laughs] to your college years, but—that I was very, very struck by in Dr. Williams’s book was his perception of race relations at the time.

RF: Yes. Yes.

DR: Is this something that you also were aware of?

RF: Not so much as Arthur was. We lived on Colonial Street, and just before we moved to Orangeburg, for a couple of years, we lived on Ashley Avenue just around the block from Colonial Street. My father had built a house there—had a house built, in good years, for his sister and my uncle Herbert. When they moved to New York my father sold the house on Colonial Street and we moved to Ashley Avenue for a few years. What was your question?

DR: What your perception of race relations were.

RF: Oh, yes. What I was going to say, in that area there wasn’t, as in Arthur’s area, blacks living right across the way or in the back alley or anything. This was—at least in the area where we lived it was all white, of course. Didn’t have much contact with—we didn’t have any contact with black children, as far as I know, then. My contact with a black youngster was [laughs] when I would go up to Orangeburg to visit my grandmother. There was a fellow, a little black boy about our age, who played with us some there. But I wasn’t . . . you know, thinking back, as a youngster, you’re taking things for granted no matter how unjust they may have been. I didn’t have any contact with blacks the way Arthur did.

DR: Even in terms of household help?

RF: Yes, well, we did have a black cook occasionally, but I don’t know that it was somebody who stayed on for years like Arthur’s cook did. I know we had black maids or black nurses, some, when I was quite small, and so on.

DR: You know, I know that Marcelle [Dr. Furchgott’s sister-in-law], for example, was rather surprised when she read Dr. Williams’s book. She did not have this feeling that Charleston was this kind of seething cauldron of social difficulty, which he obviously, at least in his later years, that’s how he remembers it. He remembers a harsher world than Marcelle remembers; let me put it that way.

RF: Yes, yes. . . .
DR: So let’s start with your high school years and the beginning of your, kind of, intellectual interests.

RF: Well, yes. High school was in Orangeburg. I was a good student. I couldn’t keep up with—I wasn’t as good as my first cousin Edwin. You know about Edwin Moseley? No? Edwin? Edwin was my first cousin, my aunt Blumah’s youngest son. We were in the same class in high school. I think, in terms of grades, he was first and I was second. [Laughs.] I don’t know. He was bright. He later became a professor of English at Skidmore, and also he was the provost there for a while. He died early, unfortunately.

DR: Skidmore is where?

RF: Skidmore’s in New York, yeah. Edwin took his bachelor’s degree here at Charleston college. As a matter of fact, he received an honorary degree here, some time back. But he’s dead now, for at least fifteen years or more. Anyway, he was in my class, and we were good friends as well as cousins. We both were confirmed together in what—sort of do-it-yourself type Sunday—Sabbath school that the few Jewish families in Orangeburg put together.

DR: I think you had told me that there was a rabbi who would come for visits?

RF: Yeah.

DR: Who was that?

RF: I don’t know. I don’t think it was Rabbi Raisin; I’m pretty sure it wasn’t. It was probably someone else. I don’t know.

DR: Maybe from Columbia?

RF: Perhaps, yeah. The school—some of the teachers were very good. I can remember well a teacher in English, who taught Shakespeare and things like that, or taught us about Shakespeare. The science teachers varied from practically ignorant [laughs] about the subject to very good. There were just two science teachers in the school. It was not a big high school in a small town. The teacher who taught physics as well trigonometry and things like that—or geometry, not trigonometry—was a Mr. [ed.: sounds like “Bowman”], I think. Mr. Bowman, in addition, the last year I was in high school, was the football coach. He was also the coach of the junior team that I was on when I was a sophomore in high school. Then I went to the senior team when I was a junior and a senior.

DR: Is that Borman, B-O-R—

RF: I think it’s B-O-M-A-N, something like that.

DR: Okay, Boman.
RF: Or maybe it’s Mr. Boamer, B-O-A-M-E-R. I’m not sure now, but it’s something of that sort. Mr. Boamer. His wife led the singing at chapel. [Laughs.] I don’t know what else she did. But he was a good teacher, and I learned things from him. I got interested in science, partly because of him.

In addition, I had a chemistry teacher, Miss Hunter. Miss Hunter was the basketball coach for the girls, and she didn’t know much chemistry. I think I knew more chemistry than she did by the time I finished her course. At that time, because the high schools only went through the eleventh grade, it was a four-year high school. I guess all of them in the state were four years, at the time. So you went to college when you were seventeen, I guess. Yeah.

I think I—I told you I went to University of South Carolina first, first—freshman year, because that was my native state, and the tuition was much less than going to the University of North Carolina.

DR: And so what year was that?

RF: I started high school in 1933—no, ’33-34, I was at University of South Carolina.

DR: You started at USC in ’33-34?

RF: Yes, to ’34, and then from ’34 on to graduation in ’37, I was at the University of North Carolina at Chapel Hill.

DR: What were your impressions of University of South Carolina, at that time?

RF: At that time? I thought the general chemistry course was pretty good. A professor Lipscome was the professor. What I remember most about the history course was the dapper clothing that [laughs] the professor used. He had a different tie on each day, a different coat on.

But University of South Carolina was not nearly so stimulating as the University of North Carolina, where they had lots of people coming through, lecturing and plays and things like that. But it was all right. The math was okay.

DR: Those were the years when Coleman Karesh was a professor there. Were you at all aware of him?

RF: No, no.

DR: He became a very prominent professor in the law school. His father was the rabbi in Columbia, which is why I know him.

RF: Yeah. So at South Carolina, it was all right. I was a year there. Then I went to North Carolina and got challenged a little more. I mean, I had all As the first year at South Carolina, and then I was sort of disappointed the first semester at North Carolina. I had a couple of As, but had only a B in some sort of general chemistry, advanced general chemistry, and a C in analytical analysis—well, quantitative analysis you’d call it, not analytical analysis. In quantitative you’re judged on how well you can handle things in the laboratory, in terms of quantifying this chemical
or that chemical, and this mixture or that mixture, and do different things. So it was a matter of poor laboratory skill, perhaps, rather than knowledge of the theory behind it. I had only a C in that, and I remember I told my roommate, “That’s the end of the low grades,” and from then on I made all As [laughs] until I finished.

DR: How did you do that?

RF: Well [laughs], I just happened—no, I was a pretty good student.

DR: I mean, you just worked harder or—

RF: No, I didn’t. I worked hard always, anyway. I just caught on. I took some pretty tough courses—some courses—toward the end in advanced physics, that sort of thing. I won a medal in the second year; I didn’t even know I was in the running for a medal. Each year there was an Archibald Henderson Medal in mathematics for the sophomore who had the best grades in math for the year, and I won that medal. I didn’t even know about it until I was informed about it at the time of graduation after my second year. But I’m not very good in math anymore. [Laughs.] I don’t know.

DR: But you went right into science.

RF: I went right into science. I knew I was going to go into chemistry from the beginning, even at South Carolina, because I was interested in chemistry. I’d played with chemistry sets as a child, and I’d read books like *Arrowsmith* and *Microbe Hunters* and different things, and science columns. I thought chemistry was great, so I went into chemistry and that was my major.

When I finished college—I may have commented on this already, about graduate school, about getting into graduate school? Did I?

DR: You did, but that’s okay. You know, go ahead and—

RF: No, it’s just—I wanted to go to graduate school, and thought I would be doing graduate work in something like, sort of, physical chemistry or organic chemistry, and nothing turned up. All the applications, at that time, you had to put down your religion and that was—I just felt that might have been a factor—could have been.

Then I went through the chairman of the department, Edward Mack, at North Carolina. He’d informed me that there was an opening in biochemistry at Northwestern for a teaching assistant. I applied there to Dr. Henry Bull, who knew Dr. Mack. Bull was from South Carolina, Upstate. I don’t know that that entered in, but it might have. Anyway, about the middle of the summer, I was informed that I could have the opening as a teaching assistant. So I grabbed it right away.

But then I went off to work. I worked for Eastern Airlines for the rest of the summer. I told you about that.

DR: You told me that—you remarked that the Atlanta airport was—
RF: Where I went first.

DR: Yeah.

RF: I was just there two days ago [laughing] and it’s so different. It was just a small airport then with prop—no jets, of course. Anyway, I took this job, had a good time with it, and enjoyed the summer. Then I went to Chicago and it was quite a change.

DR: Dr. Furchgott, in these years—the end of the ’30s—were you aware of what was going on in Europe?

RF: Yes, I was aware. Well, when you say what was going on, the end of the ’30s, you knew very well about Hitler and, I guess, about the Jewish question there. I don’t know that you knew—you were aware of it, but it didn’t enter your life a lot. . . . I’m sure we followed the news, what news we had. We didn’t have all the news.

I can remember Chamberlain at—what was it—at Munich or something, where he conceded certain things about Czechoslovakia. I sort of remember that. In a way, there might have been a question of whether it was good or bad at the time. You know, it seemed to avoid war, which was important, but then it was the beginning of the inroads of Germany into surrounding countries.

As far as—I’m not sure, but I wasn’t all for getting into the war right away. I remember that—as a matter of fact, I was with one group of scientists that were not at all pro-German, of course, but very anti-war for a while—anti-United States-in-the-war. That was in New York, after I finished graduate school. I went to Cornell as a new, sort of, research fellow, and joined up with a group of, sort of, if not left wing, [inaudible] quite liberal, a few people who got caught up in the House on American Affairs Committee’s activities, later on.

DR: I’m just wondering whether, as a young person, whether your family of origin being, well, from Hungary, actually, but—

RF: Yeah.

DR: —being from that part of Europe, whether that made it of special interest to you, or if you had any sense that this was sort of where you came from?

RF: Some interest, but not in terms of worrying about what was going to happen in Europe. I roomed in Chicago with another graduate student, more along in the years of training than I was, by the name of Herman Chinn. Herman was from a coal-mining town in West Virginia, and his parents had come over from somewhere in Eastern Europe. He was originally Orthodox; he wasn’t that anymore, and it was sort of interesting hearing him. He was very interested in what was going on more than I, I think, in terms of Europe.

DR: What was his last name?
RF: Chinn, C-H-I-N-N—just happened—not Jewish. I mean, I’m sure it was changed. Anyway, he introduced me to things in Chicago, in a way. I had some friends in Chicago who were the other extreme—not the other extreme—from the University of North Carolina, who were from pretty well-to-do families and lived in nice apartments and so on. But I didn’t socialize a lot with them; I did see them occasionally.

DR: At that point, did you have any—were you practicing Judaism at all?

RF: Practically not. No, no. I didn’t disclaim it, but I didn’t take part in any regular serv—activities at the temple or anything like that.

DR: What about Herman?

RF: He didn’t either. [Laughs.] No. There was also another roommate named—I’ve forgotten his first name—Rosner was the last name. He got married during my first year and he moved out. I can remember getting a note from him when I won the Nobel Prize [laughs]; that’s a while back.

DR: So you happened to room with two Jewish guys or—

RF: It just happened.

DR: Really?

RF: Well, I think—yes. At that time—we were about the only three graduate students. At that time, biochemistry departments in most medical schools—not in every one; there were some exceptions—but in most medical schools, the biochemistry department was staffed by maybe two or three people. At Northwestern there was the head of the department, a Dr. Farmer, Henry Bull, who was my professor—he came in as an assistant professor, eventually rose to associate, and then moved out to take a chairmanship himself—and maybe one or two part-time teachers. They may have been from another department even. But it was a very small department. As I said, at the time I got there, there were just three graduate students. We were also teaching assistants. We helped in the student laboratory, in exams, and things like that.

DR: So you went right through—

RF: I went through in three years. I whizzed through. [Laughs.]

DR: Whizzed.

RF: What happened was—I told you a little of this story.

DR: No. We didn’t do this at all.
RF: All right. Okay. My professor, Henry Bull, was interested in physical chemistry of proteins. Physical chemistry and biochemistry was sort of his field, and without going into what that’s all about, but it involves structure of proteins, and changes in proteins on denaturation and things like that. That was, at the time, the beginnings of what was called the Cold Spring Harbor symposia in biology, or something like that.

At Cold Spring Harbor, Long Island, there was a laboratory—not the present one, which is very much into genetics more than anything else—and that's where Jim Watson is now. At the same site there was a Cold Spring Harbor laboratory for biology, something like that. It was a Long Island laboratory at Cold Spring Harbor. The head of that laboratory was a Dr. Eric Ponder, who was a British physiologist, very bright. He had started, I think, the symposia, and there were houses around on the grounds that people could stay at. It didn’t just last a few days or a week; they lasted about four weeks. Some people came and went, but it continued. Each year, they’d put out a volume on Cold Spring Harbor Symposium.

My professor, Henry Bull, was invited to talk about his research on denaturation of proteins, along with maybe twenty other people invited to give talks, or a dozen—well, twenty, roughly. So he arranged that I could come, and get my room and board, if I took care of the slide projector for the meetings, and Dr. Ponder, who was the director, said okay. So I went; I did that, and I got to meet all these people, some of who were already Nobel Prize winners or were [inaudible], like Irving Langmuir, who had won a prize back in the ’20s.

DR: Irving—

RF: Langmuir, L-A-N-G-M-U-I-R. I mention him, in particular, because he gave a talk on what we call surface denaturation of proteins. Proteins put onto top of liquid, they spread out, and you can get, sort of, measurements on the area relative to the force that you put on this little film on top of a solution. He was interpreting some of the results in terms of protein structure, and I had written a paper on surface films, and did some studies, a little bit, in my first year.

Anyway, I didn’t agree with him on one or two things, and I got up and said so [laughs] in the discussion. People were sort of aghast that this youngster was criticizing this Nobel Prize winner. . . . At that time they frequently published the discussions as well, so there’s this discussion in this volume on 1934 [RF: 1938] symposium. Anyway, the more important thing was that I caught the interest of the director, Eric Ponder, and another man—my memory is not that good today, every day, now.

DR: It’s quite amazing what you do remember. I mean, to be able to remember a discussion—

RF: Harold—I’ll think of his name—Harold something. [Ed.: Harold Abramson.] Anyway, he and Ponder were doing studies on what we call electrophoresis. That’s movement in an electric field of red blood cells, to find out something about the physical chemistry of the membranes of the erythrocytes, so called. They needed someone to work on it in the laboratory there, with a microscope and a special little apparatus, [inaudible], for studying electrophoresis under the microscope. They said I could stay on for the rest of the summer if I’d do that work, so I did, and began working on red blood cells and structure and shape changes.

I continued that for my—when I went back to Northwestern, Dr. Bull said, “Go ahead and continue on that, if you want, for your Ph.D.” So I did that. I went back the next summer, worked
a lot more with Ponder, and kept in touch with him—he was the director of the laboratory—and put out a couple of papers—interesting—three papers from that on shape changes in red cells. Some are quite interesting.

Anyway, that was during—I went back the next summer. There was another symposium then on metabolism, intermediary metabolism, and a lot of new things were coming in about the biochemistry of oxidations, and so-called oxidation [RF: oxidative] phosphorylations, and ATP and things like that. Anyway, I met lots of people who were at that symposium, who were active in metabolism and tissue energy metabolism. And there were, again, Nobel Prize winners, people like the Coris and others.

DR: Dicoreys?

RF: C-O-R-I, Carl Cori and his wife, who were both Nobel Prize winners together. It could have been after that meeting, but they did win a Nobel Prize. At that meeting, I met a Dr. Ephraim Shorr, who was an endocrinologist in the department of medicine at Cornell Medical School. I got to know him and, later, it was good that I knew him, because I got my first job after graduate school with him at Cornell. Anyway, that was the second year, so I was there in the summer of the second year.

The third year, I’d just finished my Ph.D. at Northwestern. They gave me credit for the summer work, that’s how I was an—and I did the necessary coursework, so I finished in three years. The third year Ponder invited me to take part in the symposium as one of the speakers on properties of red blood cell membranes, something like that.

DR: So this was—

RF: There were a lot of other people there at that time who were—you know, they came from not just this country, but international group.

DR: The year now is what? 194—

RF: ’40—finished in ’40. I got my Ph.D. in 1940.

DR: So you were twenty-four years old.

RF: I guess so, yeah. Yes, I took off from Northwestern. I didn’t stay for my graduation, because I had finished, [laughs] and I went to Cold Spring Harbor.

I don’t know that you need all this. This is not Jewish history in South Carolina.

DR: Well, it’s your life history, which is very much the point. You know, we always say in this business, “Tape is cheap. It’s time, it’s time,” and getting this story is wonderful, so don’t worry about it. I want to make sure that we don't miss the climax, so to speak, of your later career.

RF: All right. Okay.
DR: So just one thing—

RF: Yes.

DR: —during this time, were you going home regularly? Were your—

RF: No, I would go home maybe once or twice a year, or three times. Also, of course, that’s the time when I’m a young man, and there are some nice girls around, too. Some taking courses, some not—medical. I mean, each summer, there was somebody I was with. [Ed.: sounds like “It was fun.”]

DR: Usually someone involved in the same field?

RF: Not necessarily. One was a medical student from Cornell, whom I still—who eventually married a very distinguished surgeon. One was someone who—the first year, someone from a, sort of, fancy girls’ prep school, and the last year, someone else.

DR: Any of them Jewish?

RF: No, none of those were Jewish. No.

DR: Was that at all important to you?

RF: It didn’t matter that much, you know? One I went with some of the first year was Marjorie Vanolinder, who was the sister of the secretary of the director. Eric Ponder was the director, and his secretary was Ruth Vanolinder, and I went some with her sister. He married Ruth. They were married by the second year I was there.

DR: Vanolinder.

RF: Yes. [Laughs.] Very Jewish.

DR: V-A-N?

RF: V-A-N— [Laughs.]

DR: O-L-I-N-D-E-R, just like it—


DR: Okay.

RF: It doesn’t matter. Anyway, you went swimming, you had tennis. There were various things there, at the—it made a very nice place for the summer, and you did work, too. They had
some courses; there were [inaudible] a number of young people—it was not exactly like Wood’s Hole. It wasn’t nearly that big, but it was a little like Wood’s Hole—a summer laboratory.

DR: And it sounds like you were being successful.

RF: Oh, I did have someone, yeah, the third year—Irma Comandee [ed.: pronounced like “Comanday”]. Don’t [laughs] bother with the name.

DR: Well, I’m getting the spelling, because when the transcriber—Comandee?

RF: Yeah, all right, anyway. I met [her] through a friend of mine, who had come over from France before the war—Rosenbluth—first name— He’s a member of the American Academy of—National Academy of Sciences. Anyway, he was very interested in music. He had a brother who was a very good violinist, and he introduced me to Irma Comandee. What’s her last name?—that was her maiden name—I don’t know. Anyway, she was a divorcée. That was the last year I was at Cold Spring Harbor, and I was seeing her a fair amount after I moved to New York, after Cold Spring Harbor, before I met my, then, later-to-be wife. She was a good musician. She married a musician later on, another—Anyway, I grew up in a not unusual way—got to see things and do things that one does growing up.

DR: So the war at this point had really—was underway.

RF: Well, the war was around. The war started during my honeymoon in 1941.

DR: So you met your wife shortly after this.

RF: No, I met my wife—I finished school, remember, in 1940, and I began working at Cornell in New York City in the fall of 1940. I met my wife-to-be on New Year’s Day in 1941, and her name was Lenore Mandelbaum. I met her through one of my cousins, Bea Furchgott, Beatrice Furchgott. Bea had worked with Lenore at Bonwits, or somewhere, in New York. I went over to see Bea, and she was at Lenore’s house. That was—apartment—that’s in 19—on New Year’s Day, 1941. We were married in November of 1941. I brought her down to Charleston in the summer, and she met my parents. We stayed at Sullivan’s Island.

DR: You knew right away that this was it?

RF: No, I didn’t, but I knew there was something there; it was good. It was, on the whole, I guess, a successful marriage. Some things didn’t go so well; some things did well. She was always frustrated that she had never finished college. Her father had died—actually, her father committed suicide when she was a freshman in college; she dropped out. She was at NYU. She was a New Yorker, born and bred in Manhattan.

DR: And I gather, from her name, Jewish?
RF: Oh yes. Yes. Also, Irma, the divorcee, she was Jewish, too.

DR: What was, just very briefly, her background in terms of German versus—was she of a German Jewish—

RF: Lenore?

DR: Yeah.

RF: Her mother was named Levy, Henrietta Levy—called her Hattie. Her mother and father had come over from Germany, somewhere in Germany, that is, her grandparents on her mother’s side, and had a butcher shop or something in Brooklyn. Her father was a Mandelbaum. I’ve forgotten his first name. I never met him, because he had died long before I met Lenore. He was from a Jewish family who lived near Albany, as far as I remember. I never met any . . . she wasn’t close to her father’s family.

DR: So you wound up marrying a woman from a background, also, Central Europe.

RF: Yeah, Reform Jewish.

DR: Reform.

RF: Mm-hmm. We were married about a year after Max and Marcelle were married. Max and Marcelle were married in November of 1940. I came down; I was the best man for Max. Actually, also in 1940, I was the best man for my cousin Edwin, whom I told you about, who didn’t marry Jewish. As a matter of fact, his father wasn’t Jewish to begin with. Edwin had a wedding in what they call the Little Church Around the Corner in New York in 1940. I was the best man then. I think Max might have been a little disappointed that I had Edwin act as my best man at my wedding, but Max and Marcelle were there, too. Anyway, that was—

DR: November ’41.

RF: That was November 23rd, 1941.

DR: And two weeks later—

RF: Yeah. Actually, we were coming back on the train from Washington when we heard the news that the Japanese had bombed Pearl Harbor, that we were going to war. Anyway, to make a long story short, from then on, I was in research and teaching. [Laughs.]

DR: So you never went into the war?

RF: I didn’t go to war. I was deferred to begin with, because I had one bad eye. I still don’t see out of it. It was detached; I had a detached retina while I was in college. I began to be teaching in
physiology at the medical school. A lot of people had been called into service, especially those with M.D.s., and a good many with Ph.D.s., to work in chemical warfare or something like that.

I had been deferred first because of my eye, and then was deferred because the school—one, we were working on a government project having to do with so-called circulatory shock in wounded soldier—I mean, we weren’t working on wounded soldiers, but we were trying to find something about metabolism, changes in metabolism, during shock situation. We were doing a lot of basic work in biochemistry relative to this, and we had some government money, as well as some other money. Dr. Shorr did; he was the head of the division. I was deferred because of my research and teaching. I didn’t mind that; I wasn’t particularly interested in getting into the military directly.

DR: Did Max go to war?

RF: Yes, Max was in—he was a photographer. I mean, he did some things having to do with photography, but he didn’t have to go abroad. And my older brother was—who had worked with Eastern Airlines . . . he went into service right away, almost. He became, first, a glider pilot instructor. [Laughs.] That’s my brother Arthur. Then he got into air transportation for the air force, but only in this country. He didn’t go abroad.

DR: So both brothers were here in the service.

RF: Yes.

DR: So you and Lenore—what?—went back to Cornell? Or—

RF: Well, I was working at Cornell from 1940 until 1949. While I was working there, two of our children were born. Jane was born in 1945, and Terry, another girl, was born in 1948. I was primarily in the department of medicine, but I wasn’t an M.D., and I thought it would be better to get into a pre-clinical department with my background.

In 1948 or ’49 I began looking at possibilities for moving. I had two offers in 1949—early [inaudible]. One was at Duke University Medical School, where I had a good friend Hans Neurath, who was a professor in the department there, and he invited me to come down, look over the situation. He wasn’t department chairman at the time, though.

Then another opportunity came from Washington University in St. Louis, where the head of the pharmacology department, Oliver Lowry, who was a very good biochemist and pharmacologist, was a friend of mine—somewhat a friend—from New York City. We’d both belonged to what was called the Enzyme Club. Ollie wanted me to come up to—and had an opening in pharmacology, which he had just started a couple of years before at Washington University. I went out there. I liked that situation better than the one at Duke, and so I took that job as an assistant professor in pharmacology in 1949. I’d never had a course in pharmacology. [Laughs.] I did a lot of reading before I got there.

DR: You went by the seat of your pants, as they say.
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RF: Yeah. A lot of it's related to biochemistry, and I have done research work related to pharmacology, and particularly interested in drug receptor interactions, so called. I moved out there, and actually, our third child, Susie, was born a while later in 1953, I guess. Let's see, Jane was born—yeah, eight years younger than Jane. I'll be going out to Washington University in the middle of May to get an honorary degree. Did I gi—I didn't give you a little CV or anything, a little biographical sketch?

DR: No, but that would be good, that would be good.

RF: You want a whole C—I'll send you the CV. It has all the publications, but you don't have to bother about those. It has the honors and things, if you want it.

DR: I would like that very much, because we have—you saw the articles that came out in '98, and I have one from '97 when you won the—Lasker prize?

RF: The Lasker Award was '96.

DR: It was '96. Those two I have, but the rest I don't.

RF: Yeah, okay.

DR: I just, again, I'm curious about what, at that point, after the war is over, how aware you were of what had happened in Europe, of people coming here, survivors making it to the United States—

RF: It's hard to know—it's hard to remember. I mean, we reviled Hitler and anything he had done. The Nuremberg trials were of interest, [inaudible] see if the people were punished. I don't think anyone truly appreciated the scope and horror of the Holocaust. I mean, some people did, but I didn't. I knew that Jews were persecuted, but I didn't know about how many had perished.

Anyway, at Washington University we made friends. Some were Jewish I'd say more were Jewish than non-Jewish. We had both kinds. There were some very bright ones, [inaudible], especially in chemistry and physics. A number of them became members of the National Academy of Sciences.

DR: Have you? Are you a member of the National Academy?

RF: Yes, yes, from 19—I don't know when—1990, 1991, [inaudible]. I'm also, recently, a member of what they call the American Academy of Arts and Sciences, which is out of Boston, but that I don't take an active part in.

DR: Hmm. I don't know that one, but I have seen—

RF: That's one that was started by John Adams and fellows.
DR: [Laughs.] I’ve seen the campus, I guess you’d call it, of the National Academy. That’s in Wood’s Hole, right? Is that right?

RF: The National Academy of Sciences—

DR: Yeah.

RF: In Washington.

DR: In Washington? Now, what’s the one up in Wood’s Hole?

RF: At Wood’s Hole? That must be something else, then.

DR: Okay. So without getting too technical, because you’ll lose me and probably—but how did your research interests develop in the direction that they did?

RF: Okay, I’ll tell you a little bit. While at Cornell, I became interested in pharmacological action of certain drugs on what we call smooth muscle preparations, whether it had to do with the intestinal smooth muscle that makes contractions and peristalsis and so on, or whether it had to do with blood vessel contraction, which had to do with the muscle cells contracting, which had to do with control of tone of blood vessels and resistance to blood flow.

We were working on the problem of shock, and we thought there might be factors that were released during so-called circulatory shock that interfered with proper contraction of blood vessels. I began to—I decided, since I had worked some with isolated intestinal strips, so called, where you could study the actions of drugs, and drugs that blocked other drugs, and so on, that I would try something with blood vessels.

I found that I could take the rabbit aorta . . . the thoracic aorta, the main part of it coming down in the chest, and cut it into a spiral or into a helix, and put these—the muscles run circularly. They’re circular muscles around—the muscle cells are arranged in circular arrangement; for vasoconstriction they contract and vasodilation they relax. You cut a helix—the cells aren’t exactly parallel to the length of the strip, but they’re parallel; they may be about fifteen degrees off. So if they contract and you have this strip attached to what we call a lever, an isotonic lever, and get a recording from that lever on something called a kymograph drum—this is old-fashioned stuff. [Laughs.] You could get a record of contraction and relaxation and response to different agents that you might use on these tissues, which are bathed in a physiological salt solution, in a kind of apparatus called a muscle chamber with the proper temperature, the proper oxygen, and so on. So you can study living tissues, and find out something about their response to different drugs. A lot of these drugs we know do things in the body, but you can make a better analysis of how they work by working with in vitro preparations.

Not just with blood vessels, I also began working some with strips of heart muscle to study effects of drugs on the heart. More of that, though, I took on once I moved to St. Louis in 1949. But the blood vessel work was—at least the crude development of a preparation for in vitro studies began at Cornell. Then I developed it more . . . in more detail and finer results when
I went to Washington University. A lot of people used the method of this paper, the first paper on it was one of the—a very highly-cited paper.

DR: The first paper you wrote.

RF: Yes, the first full paper on the use of the helical strip of the rabbit aorta. With that preparation, and with heart prepara—I did work largely on what they call drug-receptor interactions, and also some biochemistry at the same time, particularly with heart muscle, where we're interested in energy, relation of energy use relative to contraction, and mainly in vitro studies, occasionally a whole animal study.

So one of the things in the paper in 1954 that was published on the use of the helical strip for studying responses to drugs like epinephrine and acetylcholine and so on, I pointed out a drug that—acetylcholine was somewhat odd. Although we knew acetylcholine, which is a neurotransmitter, is active in causing contraction in certain smooth muscle like the intestine, in the body, on the blood vessels, if you inject it, you get a vasodilation. It’s one of the more potent vasodilators that we know of that would drop blood pressure very markedly. But then it will disappear because it’s removed by certain enzymes, that is, the blood pressure will come back up quickly.

In our system we didn’t see any relaxation of the blood vessels—in this in vitro system. All we could see was contraction, not as strong as with epinephrine or norepinephrine, but still only contraction. Even when the vessel was pre-contracted with epinephrine, acetylcholine would just give some extra contraction. I’m stressing this, because this will lead into the endothelium-derived relaxing factor.

We used this kind of preparation; we used acetylcholine frequently to give contractions when we wanted to study relaxation by another agent on top of the contraction, because these preparations have what we call very little spontaneous contractile tone. So if you have a relaxing agent to put on, and you don’t have any tone, you can’t tell that it’s relaxing, that it has relaxing potential. So to study relaxing agents, you cause a contraction; then you put on the other agent.

Then in 1978 we went back to—for certain reasons we’d made a lot of studies on different things, on tracheal smooth muscle, and a lot of experiments on heart muscles, some on vas deferens, some on perfused spleen, and so on. But using the so-called helical strip of rabbit aorta, we never saw relaxation with acetylcholine. Then one day, when we were using a different—well, by that time, by the mid-’70s or early ’70s, we’d gone over from using a lever to using what we call strain gauges [RF: force transducers], so-called isometric strain gauges, that record tension at constant length. You can measure contraction, and get electronic recordings, so to speak, writing out on a paper, what we call a physiograph record. Although now, usually, you put them on a screen, on a TV screen.

Anyway, we were running an experiment in which I was going to use acetylcholine to get a contraction on which to study relaxing effects of certain catecholamines. Without going into detail, the technician added drugs, somewhat, in the wrong order, and called to me in my office, which is next to the lab, and said, “Dr. Furchgott, you said that acetylcholine’s supposed to contract the vessels, but it relaxes them. I don’t know; maybe there’s a mistake.” Well, I thought there was a mistake, that he might have mixed up the wrong drugs. But checking it out, it was a relaxation if he contracted with norepinephrine first and then added acetylcholine; there was a relaxation, not a contraction. That was the first time we’d seen anything like that. It also was
exciting because that’s what acetylcholine is supposed to do. I mean, what it does in the whole body, it relaxes blood vessels.

Immediately that interested me—why was it different from all the earlier work? The one difference was that, by that time, using these force transducers for measuring contraction/relaxation, we had no longer used the helical strip. We used rings that were just cut successively from the artery and hung on hooks, with the hooks being connected, from one to the bottom of the chamber, organ chamber, and one to the strain gauge. Yes, there was this difference, and we took some rings that had given relaxation; we’d take them out, we’d cut them open, and make a strip. Sometimes the strip wouldn’t work, wouldn’t give relaxation; sometimes it would give relaxation [RF: in response to acetylcholine].

But all the earlier work with the helical strips, we tried that again, and yes, no relaxation. So the question was what was different? We took a little while—not too long—a few weeks to find out exactly. It turned out that what was present in the rings, and a carefully cut strip from the ring, was that if we had—let’s put it this way—if we had rubbed the inner most surface, the inside surface of the artery, when making the preparation, then we wouldn’t get relaxation. If we hadn’t rubbed it, and were careful to not touch it, we would get relaxation. It turned out that in our method of preparing strips in the past, we’d always cut these helical strips with the little scissors, carefully unwinding the artery into a helical strip, and we’d pull it over a finger. All my technicians used the same thing. We were inadvertently—rubbed off all the endothelial cells, inadvertently had rubbed the surface, and later, we found out that we were removing endothelial cells in our older type of preparation, and that the rings, at least the ones that relaxed well, all had a good supply of endothelial cells left.

DR: So did this—I’m going to push a little ahead because we’ve got about twelve minutes left. Did this lead more or less directly to the work that you did—

RF: Yeah. Yes. That’s why I bring it up now. There was lots and lots of work in between—

DR: I can imagine. [Laughing.]

RF: —about receptors and other things. But this led to the—the question is what—first, we had to show that there was a factor released from these endothelial cells when they were acted on by acetylcholine. We call that the endothelium-derived relaxing factor, or EDRF. We were able to prove that—by certain types of experiments—that there was something that was released, which was very short-lived; it would disappear extremely rapidly. But it diffused from these stimulated endothelial cells into the muscle layers and relax the muscle. That was—the sort of classical paper on that was published in *Nature* in 1980.

DR: I don’t want to distract you, but I remember one wonderful story from the lecture at the public library where you talked about the lab technician who was short, so she had to stand up on a chair.

RF: Oh, that was about the light. That was another finding. Back in the mid-50s, we discovered accidentally that light, especially in the near ultra-violet region, can produce relaxation, what we call photo-relaxation of blood vessels. We turn the light on, we get
relaxation; turn it off, it contracts back. That turned out to be related not to the endothelium, but in terms of what was being set off by light and what was being set off by the endothelial factor—the same pathway for relaxation.

DR: And the accident, if I remember, was that—

RF: The accident—

DR: —the lab technician would stand up and block the light from the window?

RF: Yeah, well, that’s how—that’s when it first struck me that that was what was causing the up and down fluctuations. The breaking [ed.: blocking] of the light would allow the muscle to contract better, and letting the light on, it would go back down.

DR: So you’ve used the pronoun “we” through this. Were you working consistently with the same team or—

RF: No. No, different people.

DR: Meaning yourself and whatever lab—

RF: Yes, yes.

DR: So then how did the final—

RF: Well, once we found out about EDRF, we had ideas about how it might cause relaxation and some ideas about what it was, but we didn’t know what it was. I mean, we made some bad guesses at the beginning. They weren’t bad, but they weren’t right. We found that we did get a stimulation of certain enzymes from this substance. We didn’t have to just release it with acetylcholine. We then found that many different substances released this same factor and caused dilation that way.

We knew some of the reactions that went on to lead to relaxation, once you got the stimulation with EDRF. They’re not unlike those that you get with a relaxing agent, like nitroglycerin that people take to relax blood vessels in the heart. It was even known that nitric oxide is a relaxing agent of blood vessels. People had found that out around 1980 also, but none of us who were in this field would consider that nitric oxide might be a natural signaling molecule. It just seemed wrong that this NO, which makes nitrogen dioxide in the atmosphere—gives you that brown smog and is poisonous—can be a natural substance in the body.

But by 1956 [RF: 1986], enough information had come in—at least, I considered it enough—to make me suspect that EDRF was indeed nitric oxide. We’d done a lot of experiments comparing nitric oxide—actually made not directly from the gas, but by a chemical reaction—nitric oxide effects compared to the effects of acetylcholine and other agents, which release EDRF. Everything was so similar that, in 1956 [RF: 1986], I decided, at the International Symposium on Mechanisms of Vasodilatation to propose, and give the evidence for nitric oxide being EDRF. At the same symposium, Dr. Louis Ignarro made the same proposal. [Laughs.]
gave my talk first, and on the same day, he gave his talk. Anyway, we were independently—he had done some good work. He was one of the co-winners of the Nobel Prize, too, he and Dr. Ferid Murad and [inaudible]—

**DR:** There were three of you?

**RF:** Yes.

**DR:** I didn’t realize that.

**RF:** Yes, yes.

**DR:** But you were not working together.

**RF:** Never worked together. Originally, I was going to do some collaborative work with Dr. Murad, or send him some samples to analyze for a substance called cyclic GMP, which is—I won’t go into detail—but it’s one of the intermediates in the relaxing action of nitric oxide. He was going to do some analyses, but we eventually did them independently.

**DR:** So how did you actually hear about winning the [Nobel] Prize?

**RF:** Oh, over the telephone, about five o’clock, five-thirty in the morning from *New York Times*. They said, “We just got the announcement that you’re one of the winners of the Nobel Prize in medicine.” And I was— it’s too bad—well, it wasn’t too bad. I wanted to sleep that morning because that was a Columbus Day holiday, but they woke me up, and then the phone kept ringing. Actually, the Nobel committee had tried to get in touch with me, but they somehow didn’t. I don’t know why.

**DR:** Were you surprised?

**RF:** Partly, yes. I didn’t think that our work would come up for cons—I knew it was considered, but I also felt that the prizes were now going more to people in molecular biology, more advanced things having to do with genetics and so on, genes, rather than what I call, sort of, old-fashioned pharmacology.

**DR:** But is it true that your scientific work led in some way to the fabrication of Viagra? Is that a connection there?

**RF:** Of Viagra?

**DR:** Viagra?

**RF:** Only in that we and [inaudible] others had shown that agents that blocked a certain enzyme called phosphodiesterase are—potentiate the effects of EDRF or nitric oxide, because they prevent an enzyme from breaking down a product that nitric oxide stimulates the formation
of. It made some sense that they were trying to block the breakdown of this active relaxing factor that nitric oxide might generate. In [the] heart they thought the agent might be good for angina, and they were testing it to help in angina cases. It didn’t seem to help there, but it did help with male erection. It was a somewhat accidental finding, on their part, with their test patients, and so they made a fortune on it. But yes, it was, in a way, related to work—not just my work, but Ignarro’s work and, to some extent, Murad’s work—on nitric oxide in blood vessels that led to the Viagra.

**DR:** I say that because it’s not just that you made an important scientific discovery, but it had, at least indirectly, an important—

**RF:** Yes, well, it’s important. They use it—I mean there are a number—it’s difficult to say. There are a lot of ways that these findings have been brought into treatment. They certainly brought into understanding certain type of conditions—the pathology—better. . . . I think the most interesting, or one of the more interesting outcomes of this finding was that they used nitric oxide directly, you know, in treating what they call persistent hypertension, persistent pulmonary hypertension in the newborn, where there’s too much vasoconstriction in the lungs, and the blood doesn’t get oxygenated well enough, especially in premature newborns.

Now, one way of treating that non-invasively, with which they’ve had some success, is to put nitric oxide into the respiratory apparatus that is being used for the breathing of these youngsters. They will improve the oxygenation of the red cells, because they improve the circulation in the lungs. So that’s one more direct effect that came out of it.

**DR:** Dr. Furchgott, was your wife already getting ill at this time?

**RF:** Yeah. Lenore died in 19—now, which one—you’re talking about Lenore, my first wife, Lenore Mandelbaum?

**DR:** You had told me that at the time you got the Prize, it was—

**End Tape 1**

**Begin Tape 2**

**RF:** —I committed myself to do a lot of things, and I don’t know whether I carried through with them properly. But you’re not a clinical psychologist, so I— [Laughs.]

**DR:** No, but I’m very interested and also because, as I said, this moment of, in a sense, greatest triumph, is also a moment of huge difficulty—

**RF:** That’s right.

**DR:** Human difficulty—

**RF:** That’s right.
DR: —so that’s a very, you know, it’s a profound thing to realize. If you don’t mind, Dr. Furchgott . . . we didn’t get on tape any of the discussion of Lenore’s death and your meeting Margaret, so if you would just repeat that, and we’ll pick up from there.

RF: Okay. Well, Lenore died in 1983, April, but she had, in 1981, around Christmastime or just before Christmas, she had found out that she had uterine cancer, endometrial cancer. She had surgery around that time. Of course, after the surgery, she had both chemotherapy and radiation therapy, and she had a rough time. My relation with Lenore was generally good, but she was a frustrated person in certain ways. She was able to—she got active, to some extent, in local politics. She was actually the executive officer for Planned Parenthood of Nassau County; that lifted her spirits very much.

She was bright and she had friends who were all college graduates. She always felt badly she hadn’t finished college, I think. And she was a good mother. We had problems with two of our daughters as teenagers, but that’s all right. She was frustrated when she lost the job as executive director, and I guess we went on a sabbatical to—I guess after that, we went on a sabbatical—we came down to Charleston, as a matter of fact, for three months, and then to California for three months. That was in 1980. Then later that year—did I say ’80 or ’81 that she had it?

DR: ’81, you said.

RF: ’81. All right, so there was a year after we got back, at least a year before she had this diagnosis of uterine cancer. She was not too happy about herself a few years before that, because she didn’t have the job anymore and she just was depressed. Anyway, we had our disagreements about certain things, but on the whole, it was a good marriage, and I think we—at the end I was very unhappy about her situation. I did all I could. She ended up in a hospice, in a Catholic hospital hospice. The daughters with whom she had had some estrangement—at least with one of them, the youngest, who was a rebel and started a commune in San Francisco—they all came together to try to help support her toward the end. She knew that, which was good.

Then of course, after she died—I guess I started seeing Maggie about eight months after Lenore died. I guess I was an eligible sort of person for people. Anyway, we struck it off well. It’s hard for me to remember now—I mean now that she’s so ill—how it was. But it was certainly sort of a real romance again, and we enjoyed each other’s company. She’s very—she’s different from Lenore in some ways. She wasn’t as bookish or as—well, I shouldn’t say bookish. She was interested in gardening and in decoration. She had a good eye for design and, I guess, furniture. She had a lot of interesting furniture.

Anyway, she was a new person for me, and in a different sphere, in a sense, socially. I was—[inaudible] I wasn’t retarded [laughs], but I was not comfortable often with people, for instance, at the Yacht Club dances and things. I went into sailing—this was back in the ’70s or late ’60s—and I liked sailing very much. I did that in the summer at a small yacht club I belonged to. Anyway, we met Maggie and her husband at this yacht club. Actually, our youngest daughter, Sue, went to a school in the Rocky Mountains in the summer, a summer place, along with James Roth, Maggie’s son. So we got to know them somewhat through that.

Anyway, Maggie made a very good companion, and it just began to—as of about five years ago, I began to see signs of forgetfulness, and dementia, and it gradually got worse. So that was it.
DR: Had her husband died?

RF: Her husband had died about three years before my wife, Lenore, had died, yes. He died of a heart attack all of a sudden.

DR: So she was already not well by the time—by 1998, when you—

RF: Yes, by 1998—actually, the Nobel Foundation people knew about this. I mean I informed them, and they arranged that when she would go to certain things that her daughter could come along if I were—some things. I mean other things—I had lots of guests, both family and non-family, to accompany me to Sweden.

DR: I know Marcelle went.

RF: Yeah, yes. They’re having a reunion—they’re going to have the hundredth anniversary, you know, of the first Nobel Prize this year. They’ve invited back all the Nobel Prize winners who are still alive, if they want to come. So I’ll probably go. I hope I can go. I hope I feel all right to do it.

DR: It’s in the fall?

RF: No, it [inaudible] in December.

DR: In December.

RF: The same time as the new Nobel Prizes are awarded, but they have a special program.

DR: So what was that trip like when you won the Prize?

RF: Well, it was very exciting week. As I said, I couldn’t thoroughly enjoy it, as I would have if Maggie had been all right. They had all sorts of entertainment for the prize-winners and their—well, sometimes with the family, sometimes just with the spouse.

The medical prizes are awarded through a decision of a committee that’s made up of people from the so-called Karolinska Institute, which is the big medical center in Sweden. . . . There are a couple of days they have the talks of the people who have won in medicine. There were three of us to give lectures at the lecture hall in the Karolinska Institute about the work for which the award was given.

There were several formal dinners by the head of the committee for the medical award, and by someone else, maybe the dean of the medical school, another time. Still another time one of the professors, whom I knew, had us for dinner. The formal dinner—the award itself is always on the 10th of December, no matter what day of the week that is. And there is the—first of all, the award ceremony at the concert hall in Stockholm, the Royal Concert Hall, and there everybody comes in formal attire. You get measured up for your tails and so on beforehand. But all my male guests had to wear formal wear, which they got at the tailor there for rental, except for my
youngest grandson, who was just ten then, and he was able just to wear a suit. Of course, all the ladies were in evening clothes.

After the ceremony—actually, in the morning we had a rehearsal so we’d know how to meet the king and back away and thank and bow. Right after that, then everybody left the hall, the prize-winners and wives [inaudible] in a special limousine. The embassy—rather, the Swedish Foreign Service provided a driver and a limousine for each prize-winner and wife. So then they had the dinner at the town hall, which is a beautiful structure just made for that sort of thing, a great big room, and lots of entertainment, and impressive waiters coming down long stairs carrying these trays full of things, and lots of music. It was quite an affair.

DR: Did Maggie go?

RF: Oh yeah, Maggie went. She was escorted by—nobody can be with their wife. I mean, somebody else takes care of your—you’re with somebody else’s spouse. I sat next to the speaker of the house—a woman—of parliament on one side, and somebody else on the other from the royal family. She [Maggie] was at a different part of the table, but she was escorted by a former Swedish physics Nobel Prize winner, but he knew about the situation. They also arranged that her daughter Jane could have one of the side tables right next to where she was sitting, so that Jane could take her if she had to go to the bathroom or anything like that. So they were very considerate that way. So yes, she had a—she wasn’t sure what it was all about. She was very proud of her picture with the queen and the king and so on. She enjoyed it, but that was the last time.

Then we went down to Florida in the winter, and she was still—that was December, so shortly after that, we went to Florida. She was well enough to enjoy some of that that winter, but that was the last winter she could go. That was ’99.

DR: But she’s still living.

RF: Yes. I saw her a couple of weeks ago, and I’ll see her again this coming—when I get back. Her son and daughter-in-law and their two children live within ten minutes of where she is in a nursing home, so that helps. It helps me, too. I see her, when I’m in New York, once a week or something like that.

But it’s hard because she doesn’t remember me. After a little while she’ll realize I’m somebody sort of close to her, and she might like a hug or a kiss or something, but she doesn’t rea—she introduced me the last time as her father or something like that.

DR: It must be so frustrating for a great scientist who—especially a pharmacologist—who’s been able to lick so many problems, and there are some that you just can’t touch.

RF: Yeah. I’m not all that great; I’ve been lucky. [Laughter.] I have! I used to be brighter and smarter than I am now, anyway.

DR: Well, you’ve done important work.

RF: Well, so they tell me.
DR: Yeah.

RF: Yeah. Okay.

DR: Well, it’s been a great privilege. It really has.

RF: Well, thank you very much for your patience.

DR: It really has. And I hope when you’re here at all, maybe Marcelle will invite me to dinner or—

RF: Yeah, okay, yes. I’d like to meet your husband, too. I hear he’s a very interesting man.

DR: He is. He is. He’s also done some very, very fine work.

RF: Yes. What is his field exactly again?

DR: Ted is a historian, a prize-winning historian—

RF: Good.

DR: —mainly in the field of southern history and race relations, but in the last few years, he has been teaching Holocaust studies, partly because the universities here need it, and there aren’t very many people who are able. So he has this sort of new field that he really was not formally trained in, but has always followed. So one of the reasons I asked you about what was known at the time is because we’re a little bit immersed these days in that field.

RF: Yes. What is his background?

DR: He’s a good Jewish boy from Brooklyn. You know, he grew up in a very observant way and then both of us—I was very secular, I had a very secular—

RF: Where were you?

DR: New York also. Both of us are from New York. Ted went to Amherst and Harvard, which is where we met. Right away, his dissertation was a National Book Award book, so since ’74 he’s been fairly prominent in his field. I’d also love to introduce you to my brother-in-law who is French. He’s not here most of the time, but he would understand, you see. He would very well understand the science that you’re talking about.

RF: Is he the one you said was a biochemist?

DR: He’s a biochemist, using marine species, but specifically studying reproduction in cells, very basic science and—
RF: Yes, yes.

DR: —very involved in—

RF: Well, maybe I’ll meet all these interesting people some time. I’m thinking of spending part of the winter again, next winter in Charleston. I really—you don’t have that machine on anymore do you?

DR: Yeah, it’s still going. You want me to turn it off?

RF: I think so. I don’t need it any more.

DR: Okay.

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END OF TAPE