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JANET W. McARTHUR, MD

Interview conducted by
Adolph Friedman, MD
September 19, 2000

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FAMILY BACKGROUND AND EARLY YEARS

Dr. Friedman: Dr. Janet McArthur, my records and yours indicate that you were born in Bellingham, Washington, June 25, 1914; correct?

Dr. McArthur: Correct!

Dr. Friedman: Now, I don't know anything about your early life, your family, or anything from this curriculum vita. Did you have any siblings?

Dr. McArthur: No, I was an only child.

Dr. Friedman: Were your parents educated? Did they have any professions?

Dr. McArthur: My mother is a geology teacher, and my father was a county assessor.

EDUCATION

Dr. Friedman: Did you go to a public or private school?

Dr. McArthur: I went to the public schools of Bellingham.

Dr. Friedman: While you were in school, did you have any achievements or accomplishments? Were you an athlete, a dramatist? Were you only interested in science, or didn't you have any special interests?

Dr. McArthur: Well, I was the valedictorian of the class and a co-valedictorian with another girl.

Dr. Friedman: And you were telling me that everyone else was bright?

Dr. McArthur: Well, that was back then. [laughs]

DECIDING ON A CAREER IN MEDICINE

Dr. Friedman: When did you become interested in medicine?

Dr. McArthur: My aunt was a doctor. And when I was a child, I was given a present of roller skates--when I was about eight years old. She also gave me a first-aid kit to accompany the roller skates, and I began at that time bandaging up my own knees and the knees of people in the neighborhood when they had falls. I think that was one of the things that pushed me towards medicine. My aunt was a beloved member of our family; she was the "darling" of the family.

NORTHWESTERN UNIVERSITY MEDICAL SCHOOL: BACHELOR OF MEDICINE DEGREE

Dr. Friedman: Then you went to the University of Washington for your basic degree and for your master's, then to Northwestern. What is an MB?

Dr. McArthur: Bachelor of Medicine.

Dr. Friedman: Bachelor of Medicine.

Dr. McArthur: We were not given the MD until a year of internship.

DR. PAUL STARR'S ASSISTANCE IN OBTAINING AN INTERNSHIP AT CINCINNATI GENERAL HOSPITAL

Dr. Friedman: I see. Did you meet any outstanding people while you were in Cincinnati?

Dr. McArthur: Well, I was recommended to go there by Dr. Paul Starr, who is a very renowned thyroidologist, as you know.

Dr. Friedman: He lives in California.

Dr. McArthur: Well, he was there, and he tried to get me to go and practice with him, which I didn't do; however, he recommended the Cincinnati General and helped me to get an internship there. It was a very good hospital for training. He was very generous with those of us who were in his laboratory, and he allowed us to do experiments at his expense. When the dignitaries of the Cincinnati General were attending a meeting in Chicago, he took time out to introduce me to them and was very kind.

Dr. Friedman: How did you meet him? Wasn't he in California at that time?

Dr. McArthur: No, he had gone to California then.

Dr. Friedman: Where was he, in Cincinnati?

Dr. McArthur: He was in Chicago.

MASSACHUSETTS GENERAL HOSPITAL

Dr. Friedman: I see. Now, how did you get from Cincinnati to Mass General?

Dr. McArthur: Well, I was trying to decide where I was going to practice, and I went first to the Mayo Clinic for a year. In Bellingham, everyone knew about the Mayo Clinic, but no one knew about the Northwestern Medical School. So I went to there for a year and [then] came back to Boston and stayed there except for my time in England.

Researching diabetes, thyroid physiology, and thyroid disorders

Dr. Friedman: Well, we'll come to that later. What was your particular assignment when you spent your three years as a research person at Mass General? Your bibliography and publications only show articles on thyroid physiology and thyroid disorders.

Dr. McArthur: Well, there should be a reference to my work with diabetes, because we worked with de-pancreatised dogs; we had two parts of that article.

Dr. Friedman: I did that at one point--working with Rachmiel Levine in Chicago. After you spent a year at Mayo, why did you come back to Mass General?

Dr. McArthur: Well, I was rather disillusioned with the Mayo Clinic.

Interest in pediatrics and gynecology

Dr. Friedman: Many other people are, even today. After the fact that you spent so much time on thyroid disease, what stimulated you to divert your interest for a while to pediatrics and then gynecology? How did all this come to pass?

Dr. McArthur: I got bored with the thyroid. I didn't feel that it was an interesting enough gland to devote my whole life to it. So I thought up these projects that I wanted to do--that I was interested in the physiology of--and that's how that happened.

Dr. Friedman: Was that what you did when you got involved in pediatrics?

Dr. McArthur: Yes. Dr. Butler was the head of the department then, and he had very broad interests--Alan Butler.

Dr. Friedman: Then how did you become interested in gynecology?

Dr. McArthur: When I began practicing part-time, nearly all my patients were women. So I decided that I had to learn more about women if I was going to see these patients.

DEVELOPING A BIOASSAY FOR LUTEINIZING HORMONE

Dr. Friedman: Then you became interested--from the bibliography--a lot of work on gonadotropins, menstrual cycles, and ovulation. Would you like to talk to me about that?

Dr. McArthur: That was the time they weren't sure whether there was one gonadotropin or two. And _____ and his associates established the fact that there were two hormones, but no one was equipped to assay them. So I was given the assignment of developing a bioassay for LH, which I did.

Demonstrating luteinizing hormone in menopausal women, menopausal syndrome, and the cycle

Dr. Friedman: Good.

Dr. McArthur: So I was able to demonstrate its presence in various things: menopausal woman, the menopausal syndrome, and the ordinary appearance in the cycle. That was probably the most important work that I ever did.

Nutrition, exercise, and their effects on the cycle and female development

Dr. Friedman: You then became involved in weight, nutrition, and exercise effects on the menstrual cycle, female development, and menstrual periods. I know that these activities create amenorrhea or lower infrequent periods. Would you like to tell me any more about that?

Dr. McArthur: We had a team that we formed. I was the endocrinologist and Dr. Beverly Bullen was nutritionist, and we had other people who were associated with us in measuring various hormones of people who we exercised. I had not really realized that you could give people a dose of exercise. That was quite an interesting thing to me--to be able to deliver a dose of it to them and see what the effects were.

Dr. Friedman: I didn't know that you could "dose" either. An interesting thing came up as I was reviewing your bibliography; that you spent a year in Mayo in 1947 and 1948, but then in 1976 you had an article on re-feeding girls in *Mayo[Clinic] Proceedings*.

Dr. McArthur: Yes, I went out for a few months there to study them that way.

Dr. Friedman: I see. So you had a short stint at Mayo in 1976.

Dr. McArthur: Yes.

Dr. Friedman: Is there anything else I should know about your work with LH?

Ernie Knobil and Gertrude Van Wagenen Establishing a primate colony

Dr. McArthur: Ernie Knobil sent me samples of urine. We had to work with urine because it was just so insensitive. He sent me a number of different primates to study that way, and we demonstrated that they also had a mid-cycle peak and so on.

Determining dosage of LH

Dr. Friedman: You worked on monkeys, didn't you?

Dr. McArthur: Yes.

Dr. Friedman: They had a monkey colony at MGH?

Dr. McArthur: Yes. I established a small monkey colony to experiment on them. I went down to Yale--to Gertrude Van Wagenen, and she was very kind to me. She gave me a lot of tips on how to manage such a thing. I used those animals to use small graded doses to induce ovulation. I felt we needed this when we were struggling to give the right dose and not over or under stimulate.

Dr. Friedman: You mean with LH?

Dr. McArthur: Yes.

Transfer to Boston University in 1982

Dr. Friedman: In 1982, you transferred your allegiance to Boston University. Was this necessary because of your retirement age at MGH, or did you just feel that you were ready for a change?

Dr. McArthur: It was a question of politics.

Dr. Friedman: Could you exemplify, or don't you wish to?

Dr. McArthur: I don't want to.

Dr. Friedman: Okay.

Dr. McArthur: Dr. Bullen, who is helping me with this project, was at Boston University, so it was a natural place to go.

Dr. Friedman: Oh, I thought you said that she had been at Yale.

Dr. McArthur: No, that was Dr. Van Wagenen.

Exercise and LH effects on ovulation; St. Bartholomew's Hospital, London

Dr. Friedman: Oh. Then you subsequently went to St. Bartholomew's Hospital in London.

Dr. McArthur: Yes.

Dr. Friedman: How did you happen to do that?

Dr. McArthur: I have always admired the English, and I thought it would be interesting to work with them, so I went over there and continued with my project.

Dr. Friedman: All still on LH?

Dr. McArthur: Well, it was still exercise. Exercise is a better choice than LH.

Dr. Friedman: On ovulation?

Dr. McArthur: Yes.

Dr. Friedman: Would you tell me a little about that please?

Dr. McArthur: I was very happy to go there, and I had gotten a treadmill and standardized it so that we would run the patients who were subjects we were going to study on that. We could regulate their exercise very well that way. I had Sudatenous over there--who came in. There were time intervals there, of course, for sampling blood; and they were skilled in doing that. I eventually published several papers of the work that I did there. It's in my bibliography.

Dr. Friedman: I had another question here, but--seeing your apartment--I really don't need the question. The question was, your writings continued for another ten years after you left St. Bartholomew's.

Dr. McArthur: Yes, it's not finished yet.

Dr. Friedman: I was going to say, where are you doing it and what are you working on?

Dr. McArthur: I'm working on a paper that we wrote and were trying to get published. We were studying the effects of exercise on the ovary.

Dr. Friedman: Was that in St. Bartholomew's--or even before?

Ultrasonography to study the ovary; risks of too much LH

Dr. McArthur: That was in Boston. We used ultrasonography to watch the ovary, and we had this case report of a patient whose ovary blew up to a large size. We felt it was a warning that should be given to other people who were giving agents producing the ovulation. So, we are writing that up.

Dr. Friedman: In other words, the risk that you're giving too much LH.

Dr. McArthur: Yes, too much hormone. I was quite involved in bioassay in the middle of my career. I don't know if you get that impression, but it's true.

Dr. Friedman: Tell me more about it.

Dr. McArthur: Well, I was a coauthor and a coeditor of two books, which I can show you.

The Endocrine Society

Dr. Friedman: When we're finished, I'd appreciate it. You had two main associations with the Endocrine Society: from 1965 to 1970, you were on the editorial board of *JCEM*; in 1973-76, you were on the council. Would you please discuss these years with me, and tell me which work you enjoyed the most and--if you had a chance to do it again--which one you would participate in?

Educating American medical scientists on the relevance of the statistics for bioassays; a three-day conference on the bioassay with NIH support

Dr. McArthur: I was involved in bioassay when we were trying to get something that would be specific for LH. I went to an international meeting in London where they had excellent statisticians who described the method of treating these data. I thought it would be nice if we got something similar in Boston--because the people over there were deprecating our work; they said that it had no quantitative significance. So I got a grant from people at NIH, Bethesda, and I put on a three-day conference on bioassay. My purpose really was to educate Americans in bioassays.

[Interruption]

Dr. Friedman: You were telling me about having this three-day symposium at NIH where you wanted to introduce the endocrinologist scientist to bioassay.

Dr. McArthur: The statistics of bioassay.

Dr. Friedman: Please, continue.

Statistics and establishing standards for various hormones

Dr. McArthur: I had a very able colleague in statistics, who was a co-manager with me--whose name is eluding me right now--who put on this conference. He was very well educated in statistics, and we invited statisticians from all over the world to come and give presentations. One of the things that impressed us about statistics books was that they always had to do with bails of hay or things like that. They were sort of crazy to have that for endocrinologists. So we wrote to endocrinologists and asked them to supply us with data that they would like to have analyzed, and we analyzed it and gave lectures on these things, and this became the nucleus of a book. Reading all of that, I can tell you who that was. He was very important in this. His name was Theodore (Ted) Colton, and we published this book of statistics in endocrinology by MIT Press, and the data in it was endocrine data, and this had quite an influence. There were other influences at that time. People were getting standards for various hormones, and that was important. They were supplying them to investigators. And very soon the American things became just as sophisticated as the ones in Britain and other countries.

THE ENDOCRINE SOCIETY

Dr. Friedman: Good, you did a wonderful job on that. We were talking about the work you did for the Endocrine Society, and what part you enjoyed the most, and the aspects you felt were most effective.

Dr. McArthur: When I was on the council, I think I was effective in that I got them to draw up a timetable of all of the people who had skills in endocrinology and who could give people advice about this sort of thing. That was useful. They went ahead and developed that much more elaborately and began to publish the histories of the people who belonged to the Endocrine Society and their functions.

Dr. Friedman: Well, that's what I'm doing now. The problem is that there was too much of a time lapse--time wasted by the Endocrine Society. Now--less than two-years ago--they let me start this all over again.

Dr. McArthur: Well, that's good. Of course, on the editorial board I was asked on papers having to do with LH and that sort of thing.

Dr. Friedman: They sort of channeled the particular papers to you.

Dr. McArthur: That's right.

Dr. Friedman: That was good. Was there anything else you did while you were on the council that you recall?

Dr. McArthur: Those were the main things I was personally involved in. I remember getting acquainted with Julia Lobotsky who was at the NIH.

Dr. Friedman: She just retired about a year ago.

Dr. McArthur: I know.

Dr. Friedman discusses the collecting of historical records

Dr. Friedman: I have been trying to get her to give me the various memorabilia and correspondence that she had, and she keeps telling me that they're still unpacked and in her attic over the garage. She lives in our area.

Dr. McArthur: Yes, she's a wonderful person.

Dr. Friedman: Do you have much contact with her anymore?

Dr. McArthur: Well, I had a post card from her recently. She was taking a vacation at the Grand Canyon, and she saw a rainbow over the Grand Canyon, and it gave her a lot of pleasure.

Dr. Friedman: Well, if you have any occasion to speak with her, tell her that you and I met and [that] she should do humanity a favor and donate the material to the Endocrine Society. She originally volunteered to do it, and then when I tried to get it--we've had a little difficulty because now I believe she's working with the Armed Services Medical School, which is on the grounds of the Bethesda Naval Hospital.

Dr. McArthur: She's had a terrific time with her health in recent years--a lot of surgery and very complicated.

Dr. Friedman: May I take to the liberty of saying that I met with you, and that you mentioned her to me?

Dr. McArthur: Yes, that's all right.

Dr. Friedman: Because I'm going to use that as another "entre."

Dr. McArthur: Well, I think she was loved and revered by everybody. She was very accessible to investigators if they had a problem on how set up something, i.e., a paper they were writing; she would help them with it.

Dr. Friedman: Dr. McArthur, have you thought of what you're going to do with all of your correspondence and documents and reprints and articles?

Dr. McArthur: I don't think I'm going to do anything. I'm going to give them to the junkman.

Dr. Friedman: Well, rather than that, why don't you donate them to the Endocrine Society?

Dr. McArthur: Well, I'll think about it.

Dr. Friedman: Because what I do in situations like this is try to make it easy to the donor and say, "Don't sort it if you don't have the time, desire, or strength, but just pack it up and ship it to us, and we'll sort it."

Dr. McArthur: One of the stressing things is that one volume of my reprints has disappeared.

Dr. Friedman: Oh my!

Dr. McArthur: So it's not complete.

Dr. Friedman: Well, I have several sets like that. I have one from Knobil and one from Sidney Ingbar. And I have one from Samuel Asper, who was at Hopkins--the bound

work, I mean. Dr. Hotchkiss--Julane--was very kind to me and sent me a lot of stuff when Ernie died, and so did Mrs. Ingbar.

Dr. McArthur: You had good contacts; they are all good people.

Dr. Friedman: They were good people to donate them.

Dr. McArthur: Yes.

Dr. Friedman: Did you ever marry and have a family?

Dr. McArthur: No. I married medicine.

Dr. Friedman: Is there anything else I should know about your work? Is there anything else you can tell me about the assays of LH and how you applied them?

Dr. McArthur: The difficult thing was concentrating the urine without poisoning the animal. It had to be dialyzed and purified. What we used was hypophysectomized male rats, and it was the weight of the ventral prostate of the male rat that was our criterion. We ran doses of standard and unknown, and we got relative potency that way, and that's how we demonstrated the LH peak.

Dr. Friedman: Did you do anything with the female rats?

Dr. McArthur: No, it was a strictly male assay.

Dr. Friedman: Do you feel you did that because it was easier to get to the male prostate as compared to the ovary as an end point?

Dr. McArthur: I don't know. The work had been done by Greep in establishing assays with ventral prostate. He had done all those things but never tried to apply it to human urine. The difficulty was with purifying the urine enough to get it to cause the prostate to enlarge.

Dr. Friedman: I'm trying to get more information on Roy Greep because I'm backing up to the start of Greep's career when he was with Fred Hisaw. Greep, Roy Hertz, Alexander Albert and a couple others were all fellows of Hisaw, and I'm trying to work on that group.

Dr. McArthur: Well, that's a good vein.

Dr. Friedman: I'm doing the same thing with Rosalyn Yalow and Berson. When you were involved in these population studies, what was your goal or objective at that time?

Dr. McArthur: What do you mean population study?

DOING POPULATION RESEARCH AT THE CENTER FOR POPULATION STUDIES AT HARVARD (1971-1972) AND THE INSTITUTE OF CHILD HEALTH AND HUMAN DEVELOPMENT (1980-1984)

Dr. Friedman: Well, in 1971 and 1972, you were a member of the advisory committee for the Center for Population Studies at Harvard.

Dr. McArthur: We were dealing with people's submitted grant applications, for instance--

Dr. Friedman: I see.

Dr. McArthur: Giving them a priority.

Dr. Friedman: You did the same type of population research at NIH in 1980-84 through the Institute of Child Health and Human Development.

Dr. McArthur: That was similar.

Dr. Friedman: Same thing with giving grants. What are you writing on now?

Dr. McArthur: I'm writing up this person who has already blown up. I don't know why it blew up. It's an enigma, but it's a warning to people who are treating this. It's a very trivial article.

Dr. Friedman: What else have you done, lately?

Dr. McArthur: Well, I've been getting settled here. I just moved here relatively recently.

Dr. Friedman: I see. Are you planning to write on any other subjects?

Dr. McArthur: No, this is absolutely the end.

Dr. Friedman: Well, I guess I have to thank you very much for seeing me. I wish there was more we could talk about, and if you should think of anything in the next few minutes, I'll be glad to start over.

PATIENTS AS HER SOURCE OF INSPIRATION

Dr. McArthur: Practicing medicine on a consultation basis all that time, I saw many interesting patients, and when there was some physiological question that rose, I tried to investigate it. That was all, but it was my source of inspiration.

Dr. Friedman: Actually, it makes sense. It's a logical way of thinking. Do you have any contact now with any of your previous professional associates?

PREVIOUS ASSOCIATES

Dr. McArthur: Many of them have died. Al Albert was one of my very closest friends, and he has died, and so has Ernie Knobil.

Dr. Friedman: Knobil was a very sad situation; he had cancer of the pancreas.

Dr. McArthur: I know, terrible.

Dr. Friedman: I had an unfortunate experience there. We try to get people around the country help me accumulate these histories. I spoke to a man in Tennessee, whose mother lived in Texas, and he said he visited her very frequently. So he would be glad to go down there and talk with Ernie and a few other people, but unfortunately he didn't move fast enough, and then Ernie was too sick to speak with him.

Dr. McArthur: Yes.

Dr. Friedman: So we lost out on getting the history on Ernie.

"The Gonads"

Dr. McArthur: Well, we had a club here in Boston called "The Gonads," which was a dinner club. We met about once a month, and we would read our papers that we were going to present to the audience for criticism, so I had contact with Somers Sturgis and various people like that through that club. That was important.

Dr. Friedman: If you can remember, where was Somers Sturgis around 1948-1950?

Dr. McArthur: I think he was still at Mass General then.

Dr. Friedman: I was at Tufts with Astwood at that time. Periodically, Somers Sturgis came through our laboratory, but I really did not know what his association was.

Dr. McArthur: I don't know about that. I really can't shed any light on that.

Dr. Friedman: Maybe he was just a friend of Astwood.

Dr. McArthur: Maybe! He's a great gentleman.

Dr. Friedman: I remember that--tall and slim.

Dr. McArthur: Although I agree that--Ernie--has died. I thought he was Nobel caliber.

Dr. Friedman: He was. He was a wonderful person.

Dr. McArthur: His ideas--the way he developed his physiology was just marvelous.

Dr. Friedman: It's sad that not one of us had the opportunity to talk to him and document some of his ideas. I eventually hope to speak with Julane and hope that she will be able to give me some of the knowledge

Dr. McArthur: Well, she worked closely with him.

Dr. Friedman: I know. Well, Doctor, thank you very much for your time, and eventually I will send you a copy of this interview, and you can correct it, remove whatever you want, and send it back to me, and I will rewrite the original copy.

End of Interview

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