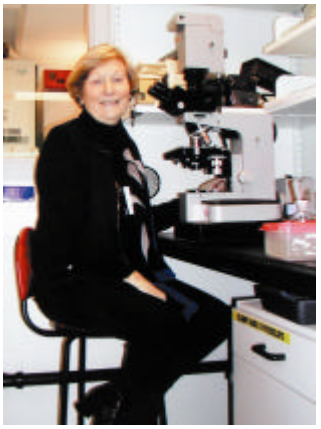
Muriel Lee



Personal Details

Name	Muriel Lee
Dates	
Place of Birth	Edinburgh
Main work places	Edinburgh
Principal field of work	Human cytogenetics
Short biography	See below

Interview

Recorded interview made	Yes
Interviewer	Peter Harper
Date of Interview	26/05/2004
Edited transcript available	See below

Personal Scientific Records

Significant Record sets exists
Records catalogued
Permanent place of archive
Summary of archive

Biography

Muriel Lee was brought up in Edinburgh and in 1958 joined Patricia Jacobs as technician at the newly formed MRC Clinical Effects of Radiation unit, being involved in the early discoveries of human chromosome abnormalities, including the XXY (Klinefelter) and XYY syndromes. She remained at the MRC unit until her retirement 45 years later in 2003.

INTERVIEW WITH MURIEL LEE, 26th MAY, 2004

PSH. I am interviewing Muriel Lee in the Garden of the Gallery of Modern Art. Edinburgh Wednesday 26 May 2004. Muriel I know that you started this work very young. Was it straight after you left school?

ML. No, I had a job in a lab working in animal diseases for three years and then this job was advertised and I was interested in it. I would say mainly because it was in a hospital, which was what attracted me. And I got the job and I just loved it from the word go. You know. It was just right for me.

PSH. How old were you when you came to this job.

ML. I was 20, 20 and I retired 45 years later. So I had been in the job all that time.

PSH. And am I right that Pat Jacobs herself was very young when she started in Edinburgh.

ML. Yes she was. I can't remember how old she would be, but if I think about it I could probably work it out, but she was very young.

PSH. She told me she was 23.

ML. Yes that would be about right. That would be about right.

PSH. She also told me that you were 16 when you started.

ML. I know she has always had that slightly wrong, because I had a job. I left school when I was 17 and I had a job for 3 years and she has always got that wrong.

PSH. Oh well, there we are. And you loved it from the beginning.

ML. Loved it yes, always loved it.

PSH. And was that do you think because of the work and the people or both?

ML. Both. It was exciting, because I was going to night school at that time and I was being taught that there was 48 chromosomes. The human number was 48, and I was going to work the next day and counting 46 and it was just so exciting, because we were right in there at the beginning, you know.

PSH. Did you realise that at the time? I mean sometimes you don't realise what is happening.

ML. Yes. Oh yes. I realised that this was a bit strange, and this was really the beginning of looking at human chromosomes and it was just exciting to be doing that, you know, to be there at that time. It was so crucial.

PSH. That was a wonderful opportunity

ML. Absolutely. It was.

PSH. Tell me a little bit about, what did your work actually involve?

ML. My work actually involved culturing blood cells. In the beginning it was marrow cells. We didn't have a technique for blood cells, so we had to get marrow from the patients if we wanted to look at them.

PSH. Who took the marrow samples?

ML. Dr Court Brown usually.

PSH. Did he?

ML. He did that.

PSH. I suppose he was medically trained wasn't he?

ML. Oh yes, he was. He was in radiotherapy really. That was where he was when he first started. And he used to take the marrows and it was really quite funny. I can remember so many times going there to the ward and he was taking it from the sternum and young nurses kept fainting. And I remember that quite clearly.

PSH. What about the patients, did they faint?

ML. No, the patients they were quite OK mostly. They were quite OK. They were flat on their backs and they couldn't really see what was happening so much.

PSH. No and they couldn't faint if they were flat on their backs.

ML. Exactly. They were flat on their backs so that was quite. . . But many's the nurse I had to help off the floor.

PSH. So you were there in the ward with a bottle of culture medium?

ML. Yes. In the beginning. Yes, and took the marrow off to the lab and then incubated it. You know, cultured it in culture medium. And things like phytohaemaglutinin, we used to make our own originally, make from beans you know. It was just so wonderful to have been there at that point. And get the whole thing started.

PSH. And when the cultures were set up, did you make the slides and . . . ?

ML. Yes, we used to harvest them and make the slides. And many nights when we were trying to decide how long we should leave colcemid in you know. We were putting colcemid and leaving it for 'x' number of hours and we had to experiment with that over periods of time. Pat and I spent nights, overnight in the hospital sometimes, just so we could get up and go and put colcemid in or harvest them or whatever. So it was really exciting.

PSH. So can I get an idea then, I mean a typical day of your work. You would come in and what would be the first thing you would have to do?

ML. Well, very often, if the things had been incubating overnight, the first thing would be to harvest cultures. Then, after we had harvested them, fix the cells. Then we would make slides. And at that time, we put a drop of cell suspension on, cover-slip and pressed it, like so. That was the old original way of doing it. We would do that and then in the afternoon, generally, I spent the afternoon looking down a microscope, looking at preps maybe from the day before or whatever. But usually in the afternoon, I always looked forward to the afternoon because that was microscope work, which I love.

PSH. And did you do drawings of what you saw or did you photograph them?

ML. No we just did sketches. You know sketches of the chromosomes in a cell as we saw it. Just sketched it here. Looking down the microscope sketching all the while. And then we just looked and analysed and wrote next to the chromosome what we thought it was.

PSH. And at what point would Pat be involved then?

ML. Well she was doing the same, really. We were doing the same really but she was obviously in a much senior position. But we often consulted with one another and . . .

PSH. So she was also, was she doing any of the culture as well as the . . . ?

ML. Yes

PSH. So you shared it up.

ML. We shared it. Pat did everything from the word go.

PSH. Yes, that's important. And the samples you started off with, were these the leukaemia samples or control samples for the leukaemia studies or . . .?

ML. Well to be honest, I don't remember any of that at all. I don't remember that. I just seem to remember from when we started to do, when we first found the Klinefelter. I can't really recall.

PSH. No.

ML. Because the preparations weren't very good at that time and we were working away trying to get the technique to work, and the chromosomes were at that early stage, we couldn't really recognise them. It was difficult even to count them.

PSH. Can you remind me then which year was that when you started. Was that '57, '58?

ML. '58, I started in '58.

PSH. And that would have been about the same time that Pat started, shortly after Pat started.

ML. Yes, she had started and she was looking for a technician, and advertised and . . .

PSH. Because she had been down to Harwell to learn the technique, so presumably when she came back she needed somebody to help with it.

ML. Yes.

PSH. Yes. Do you remember when about was it that you came up with something that was clearly abnormal?

ML. Well, the first real abnormal was the Klinefelter that I can remember, and that was really, we had got the sample from Professor Strong and we did all the technique and then Pat actually looked at it and she thought that there were 47 chromosomes, but as I said the preps weren't really ideal at that time and so she thought that but she wasn't absolutely certain. So she asked me, she was going away for a few days and she asked me if I would put in some ones that I knew to be normal and just put this in and mark them all so that just a, b , c or whatever, so she didn't know what they were. So she was looking at them blind, just a tray of slides. So I did that, and she came out and she was quite excited. She said I think we've actually got two with 47 chromosomes. And I said, well that's right because I put in two. So she was quite impressed with that. She has always been quite impressed with that.

PSH. So you did that without telling her?

ML. So that was a real test. Yes. I thought that would be a real test, you know, if she could see it in two slides.

PSH. With that patient, do you think, were you expecting to see an abnormality, or was it sort of something that came out unexpectedly?

ML. I wasn't. I'm sure Pat was but I wasn't really at that time.

PSH. No.

ML. I did understand that we were looking for chromosome abnormalities but I really didn't in that specific incident, I don't recall thinking 'this might be it'.

PSH. But when she identified it blind, you realised that this was really something?
ML. And then I counted, and thought this is something worth you know. And we realised it was something exciting.

PSH. That must have been really very exciting.

ML. It really was. It was superb. Superb.

PSH. I was talking the other day with John Strong. He must have been a very good clinical colleague to have.

ML. Yes, he was.

PSH. It struck me that he had a lot of insights into the work that was going on and a real interest. He wasn't just somebody that gave you the sample and let you get on with it.

ML. No, he was very much part of it, which was nice.

PSH. Then there was the Klinefelter and I know from talking with Pat then that you had the Down's samples really quite well advanced when it became known that the French group had found something.

ML. Yes.

PSH. Did the Down's work start more or less at the same time as the Klinefelter's, or

ML. I can't remember clearly about that to be honest with you. But it seemed to me that yes it was happening all at the same time. I can't clearly remember though. I can't clearly remember that.

PSH. Now one of the things which I was struck by was, that the unit itself was set up to study radiation, but it always seems to me that there was a very flexible approach and when people realised that you were finding things, you were given a lot of freedom to study samples and patients.

ML. Diversify yes.

PSH. This must have owed a lot to Professor Court Brown himself.

ML Oh absolutely. Yes. He and Pat were just a great team and had a great deal of foresight and could see what was coming and knew where to look, and it was really, it was exciting, it really was. And to this day, although I have been retired over a year, to this day it still gives me great pleasure to look down the microscope and actually see a metaphase cell. I mean it is just, I still find that exciting you know?

PSH. Yes. After the Klinefelter's and the Down's work, one of the next discoveries was the XYY, and that's interested me because I gather you weren't allowed to see the patients or anything. It was all very top security. Is that right?

ML. Well, I can't think that I really clearly remember that because, I'm surprised Pat didn't tell you this story, because I remember really going one evening to the dance hall in Edinburgh, which was called the Plaza, and seeing one of the patients that I knew to be an XYY, so I must have seen him at some point, either when we were taking blood from him or, you know, because I recall that quite clearly.

PSH. Yes.

ML. Unfortunately it was so long ago there's a lot of it I don't remember the details, but

PSH. Sure

ML. And I also remember the triple X. I remember Pat thinking, is this going to be a super-female as in super female. But of course it wasn't the case.

PSH. One of the things I gather which was given you with information on the XYY patients was the height and so, am I right, at the time, you couldn't really distinguish easily between a Y chromosome and a chromosome 21?

ML. No. That's right. You see it was quite difficult, because the preps weren't good, but once we got the blood technique working it was just easy.

PSH. Pat told me that when you came up with the first XYY, you told her that you had either got a 6 ft 4 Mongol or an XYY.

ML. Yes, that sounds right.

PSH. Which I suppose, if you are going to have any single piece of information the height would be important, because you would never find a 6ft 4 patient with Down's syndrome, would you?

ML. Never. Never. No. So that was very important, yes, because they were all 6ft and over.

PSH. As the work went on, the big population studies got started up. Were you involved with those?

ML. Yes very much. We did general practice. We picked specific ones. We did people over a certain age, because we wanted at that point to look for cells that were losing X chromosomes with ageing. So we did quite a few general practices. We did the prisons looking for the XYY. We went round lots of different prisons, which was all interesting stuff to do, but of course it came out in the end that XYYs were equally well in the population. They weren't all in prison, although we had imagined in the beginning that's how it would be. But I remember doing all those visits too. I was very much kept in the picture. I wasn't treated just as technical staff. I was very much in the picture which was really a big bonus. Made it really interesting for me.

PSH. Yes. It must have been a big blow to you when Pat left to go to America?

ML. Well, I was off at that time, having my family so I was working at home and I didn't even have an inkling of it, and I was shattered when I realised she was going. But by that time I was well established too, but I did miss her terribly. Terribly.

PSH. After Pat had left for America, did your role in the unit change. Was it more part of the regular diagnostic unit, or was it always part of the research side?

ML. No it was always part of the research really. It was always part of the research and it was really chromosomes were really what I was interested in. In the last I don't know how many years, 10, when they went into looking at genes as opposed to looking at chromosomes. Was it 10 years, more than that?

PSH. About 10 or 15 I suppose now.

ML. That wasn't good for me you know. And I went to work for a chap who was really a very good scientist and I liked him very much and I worked for him. But I was only part time at that time and I couldn't cotton on to really what was going on, because it was doing things in the morning and then he was doing a lot of things in the afternoon and I was missing out you know. And I didn't really enjoy it at that point. The only time I could say I didn't enjoy it. And very sadly he died. He was in a mountaineering accident. He was killed in a mountaineering accident. John Ingles?

PSH. Yes. Yes.

ML. He was a lovely man, but I didn't enjoy the work at that time.

PSH. I suppose the microscopy is very different from the gene techniques?

ML. I wasn't really doing microscopy at that time. It was different. I was doing gels and things that didn't interest me so much. But he was very wise and he realised that it wasn't my thing and he said to me one day. "Do you know what you need to do?" I said "What's that?". He said "To teach yourself to recognise mouse chromosomes". Because, he said, that's what's going to be needed soon. People want to put genes into mice, and then know which chromosome they have landed on. So that seemed to me to be a very wise decision and I did just that. So latterly I was working on mouse chromosomes.

PSH. Yes. Which are quite a lot more difficult to distinguish from human ones, aren't they?

ML. Yes, very much more, but once you can do it, you know. It was quite clear really. But it was definitely harder than human.

PSH. Yes. And when did you finish working at the MRC unit?

ML. Just a year past February.

PSH. Am I right you were their longest serving person there?

ML. In the Medical Research Council. In the whole Medical Research Council.

PSH. In the whole Medical Research Council. That's pretty good.

ML. I was. Forty five years.

PSH. Forty five years. That's a wonderful record.

ML. But I was happy. You see. And they were so flexible. They allowed me to do part-time when the children were young and the whole thing just was perfect for me.

PSH. There are a lot of lessons to learn from that, aren't there?

ML. Absolutely.

PSH. Are there any special memories of those early years you would like to just mention, that I haven't brought up at all?

ML. I can't just think at the moment. Nothing occurs to me.

PSH. It is wonderful that you have kept in contact with Pat all these years.

ML. Yes. Oh absolutely, because she has had such a big influence on my life really, over the years and yes, we have been lucky in that sense too. And of course I made other very close, my sister actually worked in the unit with David Harnden for a while. For quite a long time. And one of my closest friends that came to work with Pat, a while after me, she and I are still very close friends. So she is going to Barra with me in July.

PSH. Good.

ML. There is still that close contact.

PSH. I saw David Harnden recently. I went and talked with him to get his memories.

ML. How is he?

PSH. He is very well, and again, I think all the people working at that time were a really close group and

ML. They were very happy days, but I think there were some incidents now, when I think back. You know the rules and regulations that there are in the labs now about everything, safety and health and safety. Well, when I think back to some of the things we used to do in those days. It was horrific.

PSH. It doesn't even bear thinking about.

ML. No, exactly. A few nasty moments. No I can't think of anything in particular at this moment, but we had, it was a good time, a very good time.

PSH. And for somebody coming straight out of, almost from school, to find themselves in a career like that. It was a wonderful opportunity.

ML. It was. I was very, very lucky and I know to this day that I was lucky and it has just been great. I don't think very many people can say that about their work.

PSH. That's probably true, but I think it's also true to say that people like Pat and the others fully recognised the value that you brought to the field.

ML. Well perhaps that's true, but I think . . .

PSH. I'm sure it is. I'm sure it is.

ML. Well anyway it worked well on both sides.

PSH. Muriel. Thank you very much indeed. I will stop the recording and many thanks.

End of tape.