UNCG ALUMNI ASSOCIATION ORAL HISTORY PROGRAM COLLECTION

INTERVIEWEE: Louise M. Robbins

INTERVIEWER: Trudy Atkins

DATE: September 6, 1979

[Begin Side A]

TA: We would like for you just to continue the story that you left off on the last trip to Tanzania, and the discovery of the trail. You returned this past July, is that correct?

LR: That is correct, yes.

TA: And then, what transpired?

LR: I left Greensboro about the thirteenth, and this time I had no trouble with lost luggage or anything. I traveled very quickly to Arusha, the nearest town, and encountered one of the nurses from a nearby mission hospital who gave me a ride out to the site. So I was at the site within a few days of leaving Greensboro this year instead of spending a week or so getting there.

TA: And you got to take your casting materials with you—

LR: Yes, everything arrived with me this time. The primary focus of this summer's field work was [the] continuation of hominid footprint trail, and that's exactly what we did. We weren't able to move as rapidly as we did last year along the trail because we encountered some very hard rock in levels above the print trail. So we had to chip away very slowly, very carefully, at that rock, so the pressure of our work wouldn't interfere or break up any parts of the footprints in the lower levels

TA: May I ask, why would the rock have been harder there? Is there any reason?

LR: Well, it's a particular combination of the soils of the volcanic ash that when it hardens through time, it does what we call an argype varitype [?]. But it's a very hard rock. And while we could break it up, we had to do so very carefully. You couldn't go in there with a sledge hammer or something like that because the shock waves from hitting near would go downward onto the footprint trail, and we were afraid it might break and crack up the footprints. So we had to move very slowly, and as a consequence we really only uncovered an additional twelve feet of trail. But the trail is now eighty-five feet long, and at the time I left, on the twentieth of August, it was still going on. The footprints in that additional twelve feet section, however, are some of the best in terms of detail and the

preciseness in the soil of any we've encountered yet. As a matter of fact, about a five feet section of the trail was cast for me to deliver to the National Geographic [Society] on my return to America. They're in the process of preparing a rather large exhibit on early man, and it starts with the Laetoli [Tanzania] footprints, so they were most anxious to get it.

TA: So this will be the beginning?

LR: Yes.

TA: Your casting? Could you explain how you did the casting?

LR: The cast is—the casting of that kind of material is rather tedious and rather slow. The first thing we had to do was put a preservative over—on the footprints that were going to be cast, and this is a preservative that's—it would be like thinning glue down so that it penetrated in to the soil and really hardened it, so we wouldn't run the risk of picking up some of the small details—losing, should I say—some of the small details of the footprints. So first you put the hardener on the surface, and then we used a very thin layer of latex. And this is raw latex; we don't have anything' like this in America. But they don't have any of the finished products that we have over here, so we used the raw latex. And then backed that with gauze, to—so that when it did harden, wouldn't be flimsy. And then after the gauze, a resinous material to help the gauze harden was applied. Then there was a thin plaster of paris backing made. Now that particular cast at the site would be the negative cast of the positive footprint, so then we made another positive that would look exactly like the trail at camp; and that one we made of fiberglass and resin. So the cast section of the trail that I brought to National Geographic was really quite light in weight, but yet very, very hard.

TA: You couldn't duplicate the color or anything?

LR: Yes, we did. We came very, very close to it. Peter Jones, Dr. Leakey's [British anthropologist and archaeologist] assistant, took some of the volcanic ash or soil near the footprint trail that was about the same color, and the men powdered it so that in turn could be mixed with the resin and with the fiberglass so the cast that's going to be displayed in the National Geographic exhibit looks exactly like the trail.

TA: Now this will be in Washington, DC.?

LR: Yes.

TA: I'll call and find out when, and maybe they'll send me a picture of it *in loco* [in place] or something. It'll be really interesting that we have this contribution to make.

LR: The cast of the trail is going to be the first thing you see when you walk into the early man section of the exhibit hall. They were delighted to get it, and that particular cast contains three footprints of the smaller individual and three footprints of the larger individual. So the length of the cast is great enough that you can not only observe the detail of each footprint, but the way the individual walked and how they placed their foot in the surface of the ground.

TA: Have you changed any ideas you had about the weight—about what kind of individuals they were?

LR: Not so much about the weight, but we now are convinced—given these really fine footprints that we uncovered this summer—we are convinced that they walked through there at the same time. And we are convinced that they are walking. The rather large—oh, somewhat unclear—footprints of the larger footprints is a factor of that individual's walking pattern. It's not a part of the soil condition. At first we thought that the soil was a different consistency from the two ones we had. Well, now we have enough footprints of the larger individual that we can tell that's the way that person walked—with a shuffling gait. That individual did not pick the feet up as carefully as the smaller individual, which somewhat reinforces the idea that the smaller person was carrying something or some were considering the possibility that the smaller person was holding and somewhat steadying the larger one.

TA: That would be interesting.

LR: So we had a number of theories of how this could have come about—an injury to the larger person, perhaps age of the larger person so he was not able to walk as carefully, as easily, as the smaller person.

TA: The smaller person, too, might have been carrying a baby?

LR: This is possible, but we aren't certain. That individual certainly was carrying something—well, was carrying something or holding to the other person because of the precision of the footprints.

TA: It's fascinating.

LR: And, as I say, those we uncovered this summer—they were in excellent, excellent condition. The sharp margin where the foot would be pressed into the soil is still there. The gripping of the toes—you can where literally see where the toes bent to grip the soil as the person is walking.

TA: And this is three and a half million years ago?

LR: Three and a half million years ago, yes. Now, a second thrust of this summer's work was to work with the Tanzanian officials. Primarily this is Mr. Latourey, the minister of antiquities, who was, you might say, ramrodding the business of constructing and building over the trail. The Tanzanian government is very concerned about the protection, the preservation, of the entire trail. So they proceeded this summer to start laying out dimensions for the building, the materials that would be used for it and all. So our work was slowed a bit working with them.

TA: That is going to be unfortunate with a lot of tourists coming.

LR: Well, the purpose of the building, though, is to design it so that tourists can walk along the trail and see those footprints just as they occur.

TA: But are there not other footprints in the area that might—you might not find if a lot of building comes up?

LR: Well, what they're planning to do with this building is literally to set in on the site rather than digging it into the site, and they're taking great precautions of having a firm sand base so that while the weight of the building will prevent erosion from water and so forth, the sand base under the structure will prevent any destruction of footprints there. So considerable time was spent in laying out exactly where the foundation would be, so that other footprints—other animal footprints—at the site would not be destroyed. There is a trail of a horse-like creature with a colt, and they're going to encompass that under the structure too.

TA: And that is the same period or another period?

LR: It's the same period. These footprints were made in the same layer as the hominid footprints.

TA: Well, let me ask you—how long has Mary Leakey been in this site?

LR: She really only started working at Laetoli in 1975. Now she and her husband had looked at the area a number of years ago. I think she said twenty, thirty years ago, and at the time erosion had not exposed many of these surfaces. And they were interested then primarily in fossils, and they simply didn't find enough fossils to warrant an investigation of the area back then. But even through this short period of time, there has been enough erosion that they were gradually finding more and more fossil fragments. And then in 1976, they found the footprints and that then really focused her attention on the Laetoli area. And she often remarks while her specialty, you might say, is tools—the tool forms of these early hominid peoples—and we haven't found any tools at Laetoli yet, but she's redirected her attention now to the footprints— not only the examination of a footprint, but to see how many animals were passing through there, what a variety of animals were there. A second part of my work this summer centered around the measurement and photographing of animal footprints as well as the hominids. And one thing we were interested in examining was the presence or absence of rhino[ceros] in the area and, in addition to that, whether they were black or white rhino because they have found fossilized fragments of both.

TA: How can you tell whether they are black or white?

LR: There's a little difference in the bone structure of the two. The white is larger than the black. So I examined footprints of rhinos and devised a technique where someone else could come in and do some of the measurements and be able to tell whether they were looking at a black rhino footprint or a white rhino footprint. So we found that the rhinos were everywhere in that area. And we—

TA: Were they large?

LR: Yes, very large. They're, say, a length of a rhino footprint would be about—well, what we call thirty centimeters. It would be about twelve feet in length and about nine to ten inches in width. And when you see several of them walking across an exposed area, it’s

rather formidable when you consider the size of those animals. Another thing that we were able to verify this summer, and this was from working with animal footprints, was that, indeed, the animals amid the hominids were walking through this area during the spring of the year because we find footprints of a number of young. I observed a number of young rhino footprints.

TA: And they only bear in the spring?

LR: Yes, they only have offspring in the spring of the year because that's when vegetation is most lush.

TA: Well, how about the little horse? Was that Oreopithicus [extinct primate from the Miocene epoch] or something?

LR: It's what they call a hyperion over there. They don't have the different stages of development as precisely defined in Africa as we do here in North America. In our country this is primarily the result of the work of George Gaylord Simpson [paleontologist] at Yale, who spent his life investigating the evolutionary change in horses. Well, they don't have that in Africa, so they simply refer to them as hyperions, meaning horse-like creatures, ancestral horse-like creatures. But this hyperion form—we only encountered this in one other site, so that now we have two different sites and, ironically, they're both at sites where there are also hominid footprints. But we know that there was a horse-like creature in the area

TA: It could have been a friend of man—

LR: Yes.

TA: —whereas a rhino would be his enemy. Or both of them, maybe.

LR: Well, l suspect that the animals were not as fearful of hominids as they are today because the hominids would not have the means to slaughter them in the great numbers that we do. So I suspect that—especially having been there now—I suspect that these early hominids were living in harmony, more or less, with the other animals around them.

TA: Well, rhinos eat vegetation. They don't eat meat.

LR: And most of these animals are vegetarians. Now we do find footprints of some of the big cats, so there were carnivores present but, again, it's unlikely that they would seek out hominids as a meal because there were so many other animals present.

TA: Fatter?

LR: And certainly larger—would provide a larger meal. The size of the hominid footprints continues to suggest that they were very small individuals, the smaller one not quite four feet tall and the larger not quite five feet tall, which seems very small to us here in America, but we must stop and think that most people in the world are not as big as we are.

TA: We're larger than we used to be too.

LR: That's right. There are many, many people in the world whose statures are only about five feet tall or less, so they are not outside their range.

TA: And smaller people probably could survive better. They wouldn't be as juicy a morsel.

LR: And smaller people don't eat as much food. So they could live with the other animals very easily without being too fearful of most of the animals, except taking evasive action if need be.

TA: Well now if man really dates back three and a half million years ago, are the gaps you come forward—why would he not have developed more rapidly? Or would—it seems that's such a long time.

LR: It does seem to be a very long time in the past, but little by little in—virtually each summer provides us with more information than we had the previous summer, primarily because each summer people like myself go into various parts of Africa to conduct field work, and they're finding more and more evidence of these early hominids, more bone fragments. So we're getting a better idea of what they actually looked like. It does seem that, anatomically, they were changing to our present day form more rapidly than perhaps their brain was developing toward our present day size and form. But the upright posture, the upright locomotion that we have, does seem to have preceded the ability to develop a complex culture.

TA: Does the climate there compare at all to the climate three and a half million years ago, or can you tell whether—?

LR: Yes, we can tell by the types of vegetation that has fallen into and become fossilized in the stone, and, surprisingly, the climate of three and a half million years ago seems to be very much as it is today.

TA: Amazing.

LR: It is amazing when you consider the kind of change that has occurred in various parts of the world.

TA: This artist's sketch was very similar to a picture that you had. Oh, I didn't use that picture, but you had this in one of your pictures, you know? And the terrain looked very similar. That was what struck me at the time.

LR: Yes, it looks very much like that today over there. Oh, you find some erosion from water, but the vegetation, the somewhat scrub vegetation—

TA: Now these are elephants, aren't they?

LR: Yes, we find elephant tracks—the giraffe, the guinea fowl are everywhere.

TA: Well, that's their food then.

LR: We have yet to find an exposure of that footprint layer that doesn't have guinea fowl tracks in it.

TA: And then this ostrich—is that an ostrich?

LR: Yes, an ostrich-type creature. We also find a lot of rabbit tracks; they call them hares.

TA: Really?

LR: But rabbit tracks are everywhere, so you see—with the guinea fowl and the rabbit, they would be a food source for many of the animals, the cats and other animals like that. Even with the scrub type vegetation, it would still be sufficient for the giraffe, the elephants, the rhinos—

TA: And you found this cocklebur [short-day plant]?

LR: Yes.

TA: In other words, this was based on what you found?

LR: That picture was based on footprints of those animals, fragments of those trees and shrubs, all fossilized in that soil.

TA: So now you've changed, and this one would be smaller than this, probably carrying something and helping this one. Is she on the right or left?

LR: On the left, and consistently on the left; always on the left. At no time does the smaller individual come over to the right side, and now that we have eighty-five feet of trail, the distance between the two individuals is very consistent too.

TA: So apparently they're walking together, rather than—

LR: Because if we're—even today, if we walked behind, slightly behind, someone, we tend to veer slightly to the right, to the left, so the distance between us narrows and widens and so forth. But it doesn't do that with them. It's consistent.

TA: Well now, will you be able to go back next summer?

LR: Yes, I am going back next summer because we're going to continue the hominid trail, and partly because the geologist who has worked with the Leakeys for many, many years is Richard Haley, who was there this summer, as was Paul Abe, the man who first discovered the first hominid footprint.

TA: Where was this?

LR: This was at site G; they call our trail.

TA: Oh, okay so he was the one—?

LR: Yes, he was the one who discovered the very first footprint. And they spent some of their time checking other areas outside of this, you might say, large basin where the footprints are presently found. And they found animal footprints quite some distance beyond where we are now working. So we really do not know how large an area is encompassed in this

whole footprint region. So part of my work next summer will be to investigate the footprints at other exposures to see if the hominids are there.

TA: I guess, are you going to Mammoth Cave [Kentucky] much now?

LR: I haven't been able to get to Mammoth Cave much recently, but I do plan this year to get back out there to continue my work with the prehistoric footprints here in America.

TA: Well, prehistory is interesting, but when you go back three and a half million years, this is an incredible experience.

LR: Yes. It's difficult—well, I should say it's not difficult—it's difficult to comprehend, but at the same time there's an emotion that spreads through you that's almost impossible to describe when you pick up some of the broken turf around the footprints and realize you're holding soil three and a half million years old.

TA: Did you bring back a cup of it?

LR: No, I didn't.

TA: You should— to show to the classes. I think it'd be so. Maybe next year you can bring back a truck.

LR: Well, this time returning, I was so conscious of the additional weight of the cast that I really left everything that I possibly could there so that I would not be over in terms of legal weight limits coming back without having to pay excess baggage charges.

TA: And then also you'll be using some of that equipment.

LR: Yes, that's what I did. This year I took my sleeping bag so I wouldn't freeze at night times, and I left my sleeping bag and some of my field equipment, like the slate board I use for marking and some of my field forms. So I'll simply use them next year.

TA: Do you have a picture of yourself? Have you had any developed?

LR: They're at the—

TA: Let me glance at them, particularly if you have them of you with the trail. That would be nice.

LR: Okay, I surely will.

TA: How—I'll see if l can get a picture of the cast. National Geographic can take them for us. With whom did you work up there?

LR: Leonard Grant [vice president of National Geographic Society].

TA: They have been very helpful.

LR: Well of course, this is free publicity for them, and they are anxious for people to come to Washington and see their exhibits and things.

TA: I wasn't aware of their exhibits really. I always think of the Smithsonian [world's largest museum and research complex, Washington, DC] and never think of the National Geographic.

LR: Well, National Geographic took me to the exhibit hall to show me what they were planning and how the footprint trail segment would work in with it, but they are constructing an exhibit on early man and it starts with Laetoli forms. And until they have the cast, they were only allowed to work with photographs, but now they have the actual section of the trail. It will start there, and then moves from there to homo sapiens [human] or over to Olduvai Gorge [Tanzania], then to homo erectus, the Neanderthal forms [extinct member of Homo genus], and right on up to homo sapiens, but showing some of the highlights, you might say, of each time period of development. And with the earliest form, it's the footprints, and they move to Olduvai Gorge, then it's the live-in sites with the tools and the bone fragments, and then to homo erectus with—they have a small display where they're making fire, so they are really showing—

TA: The elements?

LR: Yes, the really important things that are happening. One thing that fascinated me but that certainly occurred to everybody to see the exhibit, they have literally duplicated a section of the cave paintings from one of the southern France sites. And here is their figure and the almost life-like way they constructed it. Here is this figure blowing soot over his hand and making a cave painting. It's almost like going to Disney World [American amusement park]. They did such an authentic job of it. It's an exceptional exhibit.

TA: What an imagination to use that. I wonder how they would have done those cave paintings.

LR: And when you look at it, you have this feeling of standing in a cave where there are these actual paintings, and they duplicated some of the most famous paintings.

TA: L'Escole? [?]

LR: This is exactly the cave they used was L'Escole.

TA: And actually you can't even go there any more can you?

LR: No.

TA: So this is a unique opportunity?

LR: It really is. And it's an excellent opportunity to show not only biological change through time but cultural development, which I was very fascinated with.

TA: Well, now was that Neanderthal? Was that L'Escole?

LR: No, Neanderthal is there making clothing because that was one of the important things that comes out of Neanderthal's time—is that we have absolute evidence from their needles that they did sew. So they're showing change.

TA: I think—I believe it was Neanderthal that buried their dead in tombs and flowers—

LR: And the cave. And they used for the Neanderthal exhibit is Shanidar Cave [Kurdistan, Iraq] and you see the burial with the flowers placed over the individual, and somebody in the background who looks as though they might be sewing a shroud or something, but getting in intentional burial—the use of flowers, sewing, the use of clothing, and I believe they may have some horns or some ritual type of thing behind it, showing that it was full cultural development. And the Neanderthal forms look very Neanderthal.

TA: That's just amazing. It makes you feel a real bond, doesn't i—t?

LR: It does.

TA: —that you just don't feel when you see this ape-like creature.

LR: Dr. [T.] Dale Stewart at Smithsonian Institution [curator, physical anthropologist] worked with them to make certain that the physical features of these forms would be as authentic as possible. So there, of course, in Washington they can draw upon the best minds in the country to help put this together.

TA: I want to see the exhibit now.

LR: One thing I neglected to ask Mr. Grant was when they planned to open the exhibit.

TA: That's what I'll find out, and I'll let you know.

LR: Okay, because I would like to announce it to my classes that if anyone is in the Washington area there to please see that exhibit.

TA. After hearing you talk about it, I know they're going.

[End of Interview]