

Interview with Jack Lattin, by Max Geier, September 30, 1997, Oregon State University; Transcribed by Keesje Hoekstra

Jack Lattin arrived at OSU in 1955, joined the Department of Entomology, which was then joint with Department of Forestry, and, as with many academic entomologists, mixed his entomology work between basic science and applied issues in agriculture and forestry, but he gravitated to the College of Science. He became an eager participant in the Andrews Forest program in 1976 and launched a 15-year effort to catalog the invertebrates of the Andrews Forest, drawing on the help of more than one hundred colleagues from around the world who were specialists in different habitats and taxonomic groups. This team included many OSU students and faculty, and the effort attracted many entomologists to the forest, resulting in a wealth of research on the more than 4000 species ("spineless creatures," as he would call them), who have a home in the Andrews.

Jack Lattin: This is most of the current stuff this year, and what's up ahead of me for next year and some of the projects I'm working on now, just to tell you about them.

Max Geier: Yeah, some people also find C.V.'s [curriculum vitas] helpful.

Lattin: It's being updated. I didn't have it available for you right now because we're including the publications and ones in print.

Geier: Yeah.

Lattin: Oh God, I shouldn't say that. (Laughing) Well, they said if they keep them general, stuff slips through the cracks.

Geier: Sure.

Lattin: Well, what do you need? I looked over your sheet here and I'm in a position to give you a quick rundown, and the rest you can get off the C.V. It seems to me it makes sense.

Geier: Okay. I had some questions I was going to ask you, but do you have something you want to start with?

Lattin: I thought I would give you a thumbnail sketch of how I got to be here.

Geier: That was my first question. My understanding was that you started here in 1955 on the faculty. Please just talk a little bit about your personal origins before you came to that point?

Lattin: I grew up in Chicago, started at Iowa State University, went into the army for a couple of years in the 40's, and then came back and finished my bachelor's at Iowa State in entomology

and zoology. I then went to University of Kansas for an M.S. in entomology, and then, kept going west to the University of California-Berkeley, and that's where I got my Ph.D.

Geier: Okay.

Lattin: I came up here [OSU] in 1955, and joined the faculty in the Department of Entomology. I worked my way up through the student ranks, and I taught most of the time. The original department was a joint department with the Department of Forestry. I worked on some agricultural crops and insects, and then became full-time in science, except for a couple of years, or a term. I stayed in science. That was most important. Principally, I was responsible for the development of the entomology laboratory, which we still have. It was many years until we got that going. Also, about 2 1/2 years instructing, a little more than that. But, I always liked teaching and taught a lot of courses over the years, especially systematic entomology. My original work was in aquatic entomology, and then, we got someone full-time to do aquatics, so I sort of bowed out of that. But, I headed up the Science Honor's Program first, before there was any other honors program. Then, we developed a giant one with the College of Liberal Arts and Sciences. It was in '65 or '66, when I set up the University Honors Program, and it's still going. There was a short hiatus a few years ago, when we dropped it, but they reinstated it. Then I spent two sabbaticals in the Netherlands, one in '65-'66, and one in '73-'74; at Utrecht, which is very much like Oregon State, an applied school, and that's where we were this last 6 weeks. Went back after 20 some odd years. Didn't know whether we should or not, but it was very nice.

Geier: You kept close contact after you left?

Lattin: Well, the fellow I worked with, unfortunately, died of a brain tumor. One of his publications is right here. The first time there, I got to read the whole thing. He wrote it in English, as many Dutch typically do. It was to be volume one of three for his thesis. Having had an awful lot of students bemoan over their theses, I convinced him that one volume was probably quite adequate for a thesis, so there it is. The other one disappeared. I got that one back. The second time I got to help, doing the second volume, not for a thesis anymore. I've loaned it to my students many times, and it never came the last time. He didn't live long enough to finish the third volume. The third one was going to be on internal structure. That would have been a wonderful book. He wasn't there, unfortunately, this last visit. While I still have a few other friends there, the department's gotten a lot smaller. Because the new chairmen narrowed that scope of what they can do there, several people left. Several retired early, because it was pretty clear that they didn't have much of a future there. That's sort of unfortunate, but just as I was leaving, they were getting ready to have a gathering to reconsider the goals of the department.

Geier: You were saying you were chair here?

Lattin: When I got back, I became [OSU] Assistant Dean of Science, for six years, and was still teaching entomology. While doing that, I set up the core biology course and the core biology

program, which is the basis for most biological experiments done here. Then I went on another sabbatical, and then came back, and was the acting chairman of entomology for a couple of years, and also the chair of the [OSU] Biology Department, and created a new biology program, while they were looking for a new chairman. There was one that we had for one year, but he left. So I stayed for a couple of years. Then I went over as Associate Dean of Science for five years.

Geier: Was that in the 80's?

Lattin: Exactly when I don't know. The termination of that was '87. The reason I know, is because I went on sabbatical again. So, that seemed like a good way to make the transition. I had the opportunity to go over full time, but still teach and have grad students. I figured the thing that kept my sanity over the many years in and out of all the various things was entomology, so I decided to come back to the department. And, I went on sabbatical to Oxford for five months.

Geier: That was '87?

Lattin: Yes, '87. It was five years, so I suppose that'd be 1982. For the stretch, '82 to '87, I was Associate Dean of Science. There, I did all kinds of things. I was responsible for summer term and a lot of fiscal things, and was a general liaison between the dean and various departments.

Geier: Maybe you could talk a little bit about your professional research interests, starting with when you were an undergraduate, through until about the time you came here.

Lattin: Well, I was interested in beetles. When I was an undergraduate at Iowa State, they sort of tolerated my interest in beetles. But they, not very subtly, probably not subtly at all, redirected my interests. Then I went from there to the University of Kansas, and I spent a year getting my masters there with a man by the name of Hummerford.

Geier: What was the name?

Lattin: H.B. Hummerford. He was one of the leading entomologists of the day. There weren't that many in those days. These folks were all really senior scientists, so I was very fortunate that I did my thesis with them. Then I went to Berkeley and worked with Dr. Robert Ussinger, another really distinguished professor, so I've had a really fortunate background. And I guess it was too late to become a beetle specialist after all that. I found that there was a great deal to touch in my interest in the bugs, and I still have worked on them ever since. Oh, I've broadened my horizons quite a bit and I've tried to think when I was reading this, and, as I mentioned to you before, I didn't see much mention of Oregon State in here at all. It's interesting to have started off at Iowa State, which is a school very much like Oregon State – an agricultural university. Kansas was a real university, and at the time I made that transition, I found, at that time at least, a very sharp distinction between a state college and a university. University of Kansas was a really first-rate university, and quite a different emphasis I'd say.

Geier: How would you explain the difference?

Lattin: Well, the emphasis was more on the basic side of things. Not surprisingly, in contrast with the University of Iowa, Iowa State was responsible for all the applied programs.

Geier: Yeah.

Lattin: More recently it started doing some other things. But they had a long and very distinguished history of entomology. They had some really fine scientists there. So, I wouldn't want to say "guilt by association," but by being associated with them all through that time, the first couple terms before I became 18 and entered the Army, and then afterwards, I got to know all of them very well. It was just a "dream" entomology/zoology department. There were the graduate students. They sort of ignored the fact that I was an undergraduate and I was just included in the group, probably because I was older I suppose, but it didn't seem to matter. That was one thing I really found peculiar, and to this day, I've never been able to explain it. When I got to the University of Kansas, they were discussing a book on evolution, and I suddenly realized, in four years at Iowa State, we'd never talked about it. And I found that very, very unusual. And I remember getting in a discussion with one of my friends about chapters in this book, and I was all right, but I really didn't know a heck of a lot about what I was saying. I said the words all right, but I didn't understand them then. It surprised me that a department with so much entomology, and I took other zoology courses as well, there really hadn't been anything said about the scientific term "evolution," which puzzles me to this day.

The man I worked with had a huge library, which you can tell. I inherited his books along with some other folks I've worked with. He had all Darwin's books, and talked about them as historical pieces, but little about what was involved. So, when I taught that course [evolution], I taught a course here years ago, we had a moment when we had slightly different takes on evolution. That accentuated what I thought was perhaps the difference between a college and a university. Then I got to Berkeley, and the new chairman of Kansas had just come from Berkeley. I worked with the chairman for many years, and stepped down and he took over, so it wasn't hard to make that transition to Berkeley where we were doing a great deal of that. But by that time, I had many questions and I had to take my own courses, since there was virtually nothing left on it. They just made it very clear that you're going to be responsible for it, so you'd better be prepared to answer questions. But we just didn't take any courses [on evolution].

Geier: But at that point, you were already on the faculty?

Lattin: No. I went to Berkeley first, and then came up from there, just out of the thesis. It was clearly a transition into contemporary biology, with ecological and evolutionary angles. The fellow I worked with, Ussinger, was an extraordinary person. He had students worked on sewage in the ponds, which is pretty basic. And he loved nothing better than highly complex tutorial networks. He had published distinguished volumes on a large number of groups of

insects. So, he didn't hesitate to work on a hard problem. That is something that has stayed with me for a long time. When I came here I took some of the same approach. I've always felt that there's the reason there's an entomology department at all, is because of the implication of that. Now, that doesn't mean you couldn't have it in other institutions, but traditionally where you find them, with U-Kansas as an exception. They all have strong agriculture or forestry or both. When I first got tied up with the Andrews, it made a lot of sense to apply my own discipline to something like the Andrews. There's no one else doing it I know of. The ownership's been with us for a long, long time. Recently, as sort of a legacy, I hired a fellow to redo the flora of the Andrews.

Geier: Who's that?

Lattin: That's Scott Schindler, Dr. Scott Schindler. Big tall, huge guy. Black curly hair, big black beard, you can't miss him. You'd hate to see him lining up opposite you on a football field. (Laughter). But, he's a very good systematic botanist. He has found about 50 or 60 species that haven't been recorded before, changed all the nomenclature, because it's an old one that was done by Franklin and Dyrness a long time ago, and a lot of things have happened since then. Since we're getting some of the entomological system, I guess he's going to do that. And so, he's done that, and I pretty much foot the bill for that, since it seemed like a good basis for future studies to help you know what the heck you're doing. He's first trying to produce an electronic version, and then a hard-copy one. I'm really pleased he's made such good progress.

Geier: When did you start working at the Andrews?

Lattin: Oh, I started around '76. You had some questions about things, as I read through your documents, and there were some peculiar things that really sort of jogged my memory. Have you talked with Roy? [Silen-first USFS person at H.J. Andrews EF; called Blue River EF, 1948-53.]

Geier: Yeah, I have.

Lattin: Okay, good. Because my recollection is that he was the one that actually disappeared into the bush, to find what ultimately became the Andrews.

Geier: Yeah.

Lattin: On his back he carried his food and everything with him, and just hiked in. No roads, no no trails, no nothing. You've been there haven't you?

Geier: Yes.

Lattin: There's a lot of up and down. How'd you like to do that with a 60-pound pack on your back? Oh boy! (Laughter) And it's sad, terribly sad, that his wife was killed [car accident].

Geier: Yeah, that was tough.

Lattin: Just unbelievable, couldn't believe it.

Geier: He was down there at the Andrews when it happened. Did you know that?

Lattin: No, I didn't.

Geier: Yeah, we had a group of people that came down there for oral history work.

Lattin: Oh, he did?

Geier: Yeah, he was in the group.

Lattin: That's right. You said they notified him down there. We had a somewhat similar situation very recently. Gary Reed, who is director of experimentation in Hermiston [OSU Extension/Research], and an entomologist, was here to give a talk, and his son killed himself.

Geier: Oh, geez.

Lattin: He learned about it here, was going back up to Portland to pick up his wife and his daughter or father, and I think he then had to tell them.

Geier: Oh, man.

Lattin: That was really sad to hear. It was very, very difficult. Boy, those guys had to be something to be able to deal with that, and try to find a new life.

Geier: Yeah, yeah. He credited some of the people he worked with at the Station [PNW], especially at the forest level, for giving some him some good ideas about moving forward.

Lattin: Well, this is an aside, but it's relevant somewhere in here. You have not talked much about the LTER program yet.

Geier: Not yet.

Lattin: Okay. I've been involved in it for a long time, way before LTER ever came into being. There was a time when NSF was concerned that individuals were wielding too much influence on the shape of the LTER sites. I remember being on a [NSF review] panel back there at the time when the LTER network was getting going, and if it hadn't been for a few individuals like Jerry Franklin, there wouldn't be an LTER program. We had Franklin and Waring [Dick], the ones who were the chief movers and shakers of the whole thing. We had people at other sites the same way. And some of those people are still doing it 20 or 25 years later. And if they hadn't had the willingness to just lay their whole career on the line, if it hadn't been by group, it probably never would have happened. Nowadays, there a protocol to do it. In those early days, this was the first place to be funded. They hemmed and hawed, they came back-and-

forth, "Do we really want to put money on a long-term basis?" which they'd never done before. Not too many did, but I think it's still is the most productive of all the LTER sites - period.

But you've got to keep pumping to do it. This thing doesn't happen by just sitting around, and two or three [sites] have been dropped along the way. There are 18 now, but originally, if you total them up, we had 21. But, it took the strength of people, like Walt Whitford at the Jornada site down in southern New Mexico, and Dave Tilman over in Minnesota [Cedar Creek LTER site], and Judy Meyer down in Georgia [Coweeta], and Tim Seastead at Konza Tall Grass Prairie; people like that. They're gonna do it, and see that it's done and finished. The people who weren't able to do it; basically, those places went by the wayside. Some of them thought they were going to just get all this money and do whatever they darn well pleased with it. The other thing you need to keep track of is that what makes the LTER program unique. It originally had and still does, guiding principles about what's supposed to be done, for all sites. Every site does it differently, but they all have common themes. That's one of the things that has helped, although some people might say it has hindered development. I don't think so, personally.

I do know, having been involved in this for so darn long, that there are people who are not associated with the LTER that really don't like it. They don't like it because they don't like the idea of money going to a group. They've had money of their own all this time, and they don't like the idea of sharing it with other people, and they think that it isn't right. Reviews of LTER proposals usually have 10 or 15 reviewers, way more than normally [on single investigator grant proposals]. And you can count on one or two to be up on a soapbox, criticizing the whole idea of the thing. But the fact of the matter is that NSF considers this [LTER] to be their flagship program. Like it or not, that's the way it is. So, people who are willing to tie some of their work into LTER sites, I don't think it hurts them. It's no guarantee, if you haven't got a good proposal, you're not going to get a nickel anyway. Nonetheless, they're trying to strengthen the contributions. And none of us have done that. I mean if you look at the amount of money that we get from that one program per year, and then look at how much money per year is garnered from other grants, then we're way out ahead of what we get from one source alone. And we have this collaboration of OSU with the [U.S.] Forest Service Research and the national forest [Willamette]. It's sort of a triumvirate. So, moneys are coming in from several sources. Not much that I know of comes from Oregon State, though. It did for a while, but most of us just go out and get it. People are used to that and that's what you do. You can sit around wringing your hands, but you're not gonna get much done that way.

Geier: Now, you were saying there were some people at NSF who were concerned that the program was too driven by just individuals?

Lattin: Oh no, it wasn't that. NSF went to extraordinary lengths to try to be impartial. I mean, it's ridiculous to say that, but they tried to do it, and they say they did. For example, the people instrumental in establishing LTER programs back then, were individuals. This was not done by some group action. There were a couple people who just felt this was an absolute necessity to keep ecology moving, and they took it upon themselves to get it going, and they got people, dragooned them, however they recruited them, to establish these things in various places. And

they had constitutions for them, so just putting a proposal together didn't guarantee anything. Lots of them got nothing. One looks at the map of where the LTER sites are around the world, or North America, and there are some holes, partly because no proposals that would be accepted by the panel were received from those areas. Sometimes it's a matter of geography. You don't have enough people to do it. But Jornada can function at New Mexico State, and that's not a very big place. I've been on site visitations there and Albuquerque [Univ. of New Mexico], and they're pretty thin down there – not a lot of people. But, it's a good thing. Some of the folks got along, and they made it go anyway. There were a couple of places, one in particular that assumed all they had to do was put in a proposal and they would get funded. They didn't get funded and didn't like that. Hopefully they did, five years, maybe ten years later. (Chuckle) They thought they'd been around so long they must get the money, and those panels don't work that way.

Geier: Kind of an interesting angle to pursue. I wanted to ask, were there particular individuals who stand out in your mind at NSF who were behind the LTER areas?

Lattin: Yes there were. I can only give you some of them, because I don't know them anymore, and I've lost some of those memories. Art McKee could tell you. As a matter-of-fact, Jerry Franklin himself was back at NSF. And I think, but I'm not dead sure; he was the first program officer for ecosystems.

Geier: Yeah, we talked about that a little bit when I interviewed him.

Lattin: I think so, as he was one of the early proponents. And another guy, I can't remember his name, who was really responsible for LTER, who said, "We've got to do this." He was one of the program officers in the National Science Foundation. [Possibly John Brooks]

Geier: Oh.

Lattin: I can say that he certainly made it possible. More recently, Tom Callahan, has been critical within NSF. NSF now has permanent staff members leading LTER, and they have these rotators that come in for a year or two to help further. Callahan's been a permanent member for 15, 20 years, I guess. He's been responsible for working with interns on ecological research for a long time. He was very soft-spoken, but I had the feeling he was probably very good. Our current OSU president, Paul Risser, was Vice President for Research at the University of New Mexico, and was very instrumental in getting an LTER site there. There is a tremendous amount of support getting it established there. It's a wonderful place. They could start brand new. They didn't have anything there, except they inherited a Spanish land grant of two or three hundred thousand acres, which isn't much down there, as you've got one cow per thousand acres (Laughter). But they've got this huge piece of real estate. And he was very responsible for establishment of that LTER site. He also was chairman of the external examining committee for the whole LTER program at the end of the 10th year.

Geier: Maybe you could talk a little bit about your involvement with people at the Andrews before. You became directly involved, you said in about 1976. What was your awareness before that of what was going on?

Lattin: Well, it was at the time the IBP [International Biological Program] was initiated.

Geier: '68-'69.

Lattin: Okay. They were meeting downstairs at sort of an organizing meeting. I remember going to that. I can't tell you, even if you put a gun to my head (laughter), who did the organizing. But I remember being told, specifically or generally, that there was no room for systematic studies, and that was not what this was for, but it was for, presumably, ecosystem science. I remember at the time thinking, "Gee, that's too bad, because there's a point-of-view there that has some real relevance to it." But, it was pretty clear that there were certain people that were in it, and they just didn't want that to happen. So, there was some entomological work.

Geier: There were people on campus here?

Lattin: No. This is as it applied here, not nationally.

Geier: Yeah.

Lattin: There was one entomologist I can think of, maybe two; one was a forest entomologist, and the other one was partly into forest entomology. They did competition-dynamics kind of stuff. A lot publications came out, sort of gray literature. I don't even know how many copies he printed, hundreds, maybe a couple of hundred. [Referring to IBP-published reports] They came out with forest green covers, and they were published mostly at the University of Washington. There must be a vast amount knowledge in there, but they certainly aren't used very much. I suppose there are a few exceptions. In fact, I suppose they'll argue that maybe not even all of it is in existence. You'd be hard-pressed to find a full set. They're probably in the library. I'm not sure. And I didn't come in until '76, when, I don't even know why, but I was asked to come in and organize all this stuff that had been collected. I was in charge of the collection here.

Geier: Who asked you to come in?

Lattin: I don't know what particular person. The word was passed on to me by Norm Anderson, an aquatic entomologist, who retired recently. He was down there, too, working in stream dynamics. I think it was through him that I heard. I don't believe he was the one that invited me, but he was the one that passed it onto me, saying, "We would like to see if you're interested in handling it." I remember going to those early meetings, and it was Waring and Franklin. The two of them were responsible, basically, for all the operations [IBP-HJA], and they would collaborate on activities. I don't know as much about Dick as I do about Jerry, who was deeply involved in the IBP program. At that time there was a sort of division in the way they

worked. Franklin focused more on education and species of plants, whereas Waring was more interested in the processes. There were the people who were very interested in processes, and there are still a lot of them. But many people are really not, they don't really care too much about who's doing the processing, as long as something is doing the processing. So, there's a lot of black boxes when you're studying the processes. Well, those black boxes [processes] turn out to be insects and other arthropods. But, the people more interested in return flows and all that kind of stuff, they don't really care who's doing it as long as it keeps flowing. (Laughter) Well, I care. I didn't take long to put the collection together, because there wasn't that much. Out of it grew the "H.J. Andrews Forest Arthropod Collection" [Noted collection at OSU], which has about four thousand known species in it now. We published this in '91 when there were still about 3,600, and since then, we've added at least four hundred [species] more. So, you can take this with you.

Geier: Good.

Lattin: I just want to point out a couple interesting things. One, is that it is the collaborators. You can't do this by yourself, there's no way. I ran into a fellow fanatic from Minnesota, who's been working up there for 20 years, pretty much by himself, doing the LTER site up there. So, we're doing a book on the bugs of Cedar Creek LTER site, because he found more than I found at the Andrews. I couldn't get the numbers, he's got the variety, but when you get down to getting people to identify all the stuff [species], then is when you get a lot of people involved, just because there are so darn many of them.

Geier: So, manpower is kind of a limiting factor?

Lattin: Well, yeah. In the old days it used be easier than it is now, partly because there are fewer taxonomists around to do it. That's become a real serious problem in this country and outside the country. There are groups of insects that, if we knew more about them, would be very good [environmental] indicators, but we don't know enough about them to be able to use them. We just know that they're there and they're doing some things, but we can't tell them apart. That's why I sort of meld my work for applied systematics, I guess you could call it. Taking systematics and applying it to the solution of real problems. And it's a real problem.

Geier: We're talking about the importance of the university [OSU]. Is a lot of that kind of work done by the university with university funding?

Lattin: No, very little. I had very little direct funding from the university. For a while here, I had two research assistants. Part of my salary was paid, and I had an annual budget of anywhere from eight hundred to a thousand bucks a year. Well, these cameras cost twelve hundred dollars each. So, we needed that to go a long ways. You can sit around and wring your hands, "Woe is me," or you can go do something about it. So, I decided to do something about it. In early days I got modest support, but after a while we started producing stuff and got solid support for many years. I used it to create that collection. We bought stuff, we did field work, I'd find somebody that had close interests to me, I'd bring 'em in for really a nominal amount, and they would often end up collecting on the Andrews, besides identifying species themselves.

So, a lot of these people have been here, but a lot of them would just come anyway. A lot of people liked to help out on something that actually was going to accomplish something. This is what the manuscript looked like before we finally published it. And, as I say exhausting, so somebody else can do the next four thousand [species]. (Laughter) But, I was just looking to see, there's OSU, there's the guy that's at Berkeley, there's an entomologist from Hawaii, there's a guy in Mississippi, a guy in Idaho, and a Canadian guy. A lot of systematists tend to be at universities or a handful of state or federal facilities. And there is a systematic entomology lab at in the U.S. Department of Agriculture. It's based downtown [Washington D.C.] at the Smithsonian, and they work right beside the ones that are with the Smithsonian, and they really know how to identify stuff. In December we brought some out. Some were OSU students. The Smithsonian has always done stuff for us, even though some people won't do it and nowadays you have to pay. It's sort of an obligation, because there are so few taxonomists around. In Florida there's one, Illinois has one, and California as well, and that's really all of them. But then, there are very few of them who are interested in doing field work, and so they contribute lots and lots and lots of specimens.

Geier: Concerning field work at the Andrews, were there people that you worked with more frequently on a day-to-day basis?

Lattin: Well, you sort of touched on some of that here. It had to do with granting and funding. It had to do with encouraging independent work as well as co-operative work. And it's true, because if you went on and got outside funds, as most of us did, and still do, if some agency gives you money to do things, you obviously have an obligation to that agency to do what you said you were going to do. You can't just take it and do what you darn well please. The trick is to get it so that it overlaps with some of the things you're trying to do down there, and that's not difficult, so that you're really doing two things at once, and that's very good. Because, there are so few people, other than non-students and a few others that are doing this kind of stuff. We may be a little more independent. What we often did was to support other people's work. But a lot of people were really just interested in the processes involved. So, until more recently, not a lot of those folks ever had much to do with systematic entomology. They just didn't see the value in it. I can't help but think that part of that comes from your point-of-view. It turns out, and this is my bias, that the point-of-view of the broad field of systematics, is a pretty big part of the approach to ecological problems. The failure to know who's doing the processing, could come back to bite you. Whole systems can suddenly collapse, and you don't even know why. So, one should know the roles of invertebrates. If you can do that, then you can certainly do better about explaining how ecosystems work. But there are those who are more interested in the process. That's all they really care about, and that's their prerogative. But that's not good enough for me.

Of course, we've worked with so many different agencies, basically every agency there is. As you can see on the list [C.V.], I just sent off a big manuscript about North Cascades National Park. I helped them write a grant. There are grants that they get to write to the [National] Park Service to do the base work that's then transferred to the other parks. I helped them write a grant and we got eighteen hundred [\$] a year, for a long time. Only four received that, and I

was one of the four. Paid for I think by the DuPont Company. I guess they did it to salve their conscience or something. So one of my students did the tramping. He did the beetles, I did the bugs. And I worked with Acadia National Park, tried to get them going with only modest success, because they have a wonderful database – an old one – on which to go. And down at Sequoia National Park. A whole bunch of people organized by Jerry Franklin [group method called a “pulse”], went down for a couple of weeks, laid out plots, and did all kinds of things. So, the Park Service is getting more interested in research. They didn’t have very many people do it for years and years and years; they’ve been mainly managing people [park visitors]. Now, they’re in a slightly different role, and they’re turning to universities for help. And I looked at Rocky Mountain National Park, which is an incredible place if you’ve ever been there.

Geier: No, I haven’t.

Lattin: There’s very little public money to support basic systematic ecology, or private money. Almost none. There is some because I got funds from other sources. But I found nothing from any industrial forest operation. It always was a puzzle to me why this was so. I don’t know whether it was deliberate, as that’s not a question I can answer, because I don’t know the answer. You’d have to talk to Fred, you’d have to talk to Jerry. I suspect, but it is only a suspicion, that maybe it was an effort to avoid being beholden to anyone. If it’s a competitive thing with the NSF, that’s one thing. But if you’ve got “x” number of dollars from some large timber company, maybe there was. Not that these folks didn’t have that kind of money, but they didn’t use it on the Andrews. It’s never happened. How come? Because, the other thing is, in fact, what you’ve mentioned in there about the application of the knowledge. And after all the stuff that has come out of there has incredible influence on how forests are managed, in spite of some glitches. We had one situation I think, where I was in the room, I haven’t heard of it now in years, but I wasn’t the only one who heard of it. We had a meeting on the Andrews, where we were meeting with the former Dean of the [OSU] College of Forestry, and the dean from the college of forestry up in Seattle [Univ. of Wash.], came down. There was a round table and the question was raised about how work there influenced other forestry work. Fortunately, we had a leader of the Forest Service present, a young man who was very closely tied with the Forest Service on the Andrews.

Geier: Was it Steve Eubanks?

Lattin: Yes. He was there. The old dean said, “Well, we can’t afford to have an LTER like the Andrews for every forest in the country.” Steve jumped in and said, they needed as much science as they can get. We’ve never got a lot of support from that direction as I know it. It always seemed strange to me there wasn’t more help. Now with Steve, it’s a whole different ball game. When the dean made that statement, Steve said, “That’s not even true. We can hardly finish work on the Andrews before it gets used on the ground. That happens way before it’s ever even published. People are using it all over the country. Not just here, not just in Oregon, all over, wall-to-wall, state-to-state, coast-to- coast.” So, a lot of it was funneled through him, and he said he didn’t know of any other place that provided more knowledge,

more information, than this place does. Bless his heart, and the dean from Washington said pretty much the same thing.

Geier: Interesting there was so little support from the OSU dean.

Lattin: I don't know why that was. I really don't. He's still alive, I guess. He's not a scientist by any means. I guess he's an economist. I never could quite figure out what the deal was, but there was something there. The players have changed a little, some of them have retired, some have gone onto other things. But there's a remarkable number of people still there, still doing these things. As I mentioned to you on the phone, it's almost like a religion. It's not scary exactly, but the people who work there really think a great deal of that place. I'm not kidding. They love to work there. They're all over everywhere, they're just all over the place, but they overlap on the Andrews. If you're going to work on the Andrews, you've got plenty of latitude to do your own thing, and if you need help, if somebody needs help and they call for it, they give it to them. That's what you're supposed to do. I've seen this happen many times, where people who put the good of the cause above self. They think it's really important. When push comes to shove, they'll go this way first, they always do this. This goes on year after year after year.

Geier: Yeah. I'm curious, the way you've been talking it sounds like a lot of the entomological work at the Andrews gets done by graduate students who work for you, is that right?

Lattin: Some of it, but not all the people who are involved in that have been grad students. One was a guy by the name of Bill Nagel, very early days, and he was running the IBP entomology work, and I don't believe, in fact I'm pretty sure he was gone by the time I arrived. I'm sure he was. I think he probably worked on the Andrews a little bit, although we had a lot of students doing many things. Also, Norm Anderson and his group. He's an aquatic entomologist in the department, recently retired, and he had a group of students work on the Andrews for a long time on aquatic insects. You really ought to talk to him, because he was in the Stream Team. I never could quite figure out where his role was in that, because he did all this stuff. Eventually, he stopped going down there. I don't really know why. But he went there a good many years, in the early times, the forerunner of the LTER. I don't know when he stopped being directly involved. He had his students do an awful lot of stuff. I did involve a lot of my students, but also, friends of mine. I'd assist them with science papers and call them in. We used to sponsor short courses for taxonomists. They brought in various people, people would come to take those courses, and I would take the people down to the Andrews. A lot of them, some did that work there, as I say, as long as you're there, you might as well do something creative. They just liked to do it. People like to contribute where something is happening. You can get barrels of stuff for people that way. I have about every entomology data-set there is in the United States. Certainly this is one of the best-known areas around the country, because some idiot thinks it's important and keeps working away at it, to get that knowledge. And most of it ends up in printed, quasi-printed form. So, there are just a handful of sites with comparable information.

Geier: Is the site so well-known because of the kinds of insects that are there, or because of the kind of work that's been done there?

Lattin: You mean from an entomological point of view?

Geier: Yeah.

Lattin: That's a tough question. I mean, so many species with so few people to know them and do the work there, and I would say the broad situation is more based on what people know. If somebody has a list of species, I can run my eye down the groups I know, I can get a pretty good idea of what's going on there. Even though I know there will be other things that they didn't get, because you just can't get them all. I mean, we have four thousand down there at Andrews and probably another four thousand awaiting discovery, but these are mostly these little dinky things nobody is working on. So, you might sit around for a long time before there's somebody crazy enough to want to do it. There are ways to do it, and I've done that, too. Where you pretty much get somebody that doesn't know what they want to do, and I say what about this, and they do that. But, the diversity is definitely here. We did a calculation on the number of species of vertebrates, which we figured out there's more to find, but the current number is like 186, something like that. About 500 species of vascular plants and almost 43,600 species of arthropods. Well, that comes out to 85 percent of the diversity is in the insects. And some of these other things. We talk about it. In fact, there's a book advertised, *The Preservation of Biodiversity in Forests*. I thought that'd be great; there's not a single arthropod mentioned. All they were really talking about was wildlife. But they took the wildlife out of the title. But, all the chapters are almost all wildlife. That's a dishonest move. (Chuckle)

Geier: A big part of it is there's a substantial amount of diversity there compared to other places.

Lattin: Well, I would say, there is a substantial amount of diversity there, yes. My feeling is that in this area much of the biological diversity as represented by arthropods. We're looking at arthropods found in the foothills now, but there are fewer because the floor of the valley has been so highly modified. And they include lots of introduced species. If you're goal is just to have a lot of things around, that's one thing. But, if you're trying to maintain natural diversity, then you've got to have some undisturbed areas, but that's just unrealistic. But there is quite a bit of diversity, even here in this little stream that goes right by the campus, comes out at McDonald Forest. When I first got here I inherited an incomplete list of species, I don't know, with 15-18 species. Two years ago, students of Norm Anderson were taking a course from me and said, "What can we do?" I said, well, see what you can find in that stream. I knew there wasn't much around. They were all present, but way up in the foothills at the headwaters of the stream, not down here on the valley floor anymore, but up above. So, if you start losing those, they're gone.

End of Side A, Tape 1 (of 1)

Begin Side B, Tape 1 (of 1)

Lattin: You have to rely on re-introductions. And there's some of that happening. It's sort of a heroic effort. There's a lot of things one can do to help maintain and enhance diversity, that isn't quite as heroic as bringing in fifteen people watching one species, like the black ferret, I think in Wyoming. They had more biologists in there than they've got ferrets. [Studying them] So, you can do other things. I think that's important. That's why we've gotten into conservation so much.

Geier: Would you say the Andrews is relatively a typical site, maybe not representative, but a typical site?

Lattin: No. I would say that's turned out to be assumed. I suppose it's a problem that everyone wants us to take our body of knowledge from there, and apply it all over the place. Typically, people are reluctant to go do the work. They'd much rather get it from somebody else. So, we've written a rather big report for the bureau of forestry or whatever they call it in British Columbia. I said, "Why don't you go out and look at your own forest, and tell us what you think we'll find there." We've done a lot of that. It would be awfully nice if more papers were looked at, and we've done some of that with Bureau of Land Management for some old growth and young stands off the Andrews. Jeff Miller in particular, has done a lot of that work. So, we're getting a better understanding of it. But the President's [Northwest Forest Plan] plan, just look at the big mound of stuff over there, finally came out with what they call a "Record of Decision" about that, what may be done to the landscape in order to enhance it [ecosystem management and restoration]. It contains a section on insects, and we were involved in it because there wasn't anyone else to do it. We made our recommendations, and out comes a statement, "thou shalt do these things, and not do those things." And moneys appropriated for that are being used, apparently for other purposes. I don't see it getting done yet, and it really bothers me. The spotted owl goes all the way down to the Bay Area and Northern California. I know that area pretty well. Talk about diversity, you took an Andrews and plunked it on down in Northern California, and man, we'd be terrible. There's so much more diversity down there.

But, we are slowly, but surely, building up a body of knowledge that has it value and utility. To address that diversity, the idea is to select out of it, those bits, for which there are adequate taxonomic skills in the community of entomologists. If you can't find someone who can do them, then you're not gonna do anything, because you don't know what you've got. So, you have to sort of first find out what are the groups that would be useful to know about, and then find out which ones you can actually work with. Those numbers come down pretty quick. There are certain groups that are important enough, that if I had my life to live over again, I'd see to it that there were more people out there working on them. It's just a little late in the game for me now. (Chuckle) But, it's really important to do that. When I started the group that I worked on with the "true bugs," the old fellow I used to work with focused on the swamp bugs. His idea was, as was common in those days, "This is my group, and don't you come into my pasture." There were three or four people like that. The guy knew very well I was one of his last students. Then he went to Connecticut to work on another group because he couldn't work on that group once he left there, as this other guy had all his stuff. When he died, he left his collection to the national museum, and that institution turned out six students in that

group. They're all doing wonderful jobs all over the place. It's such a big group, there's no way one person could do it all anyway.

Geier: It sounds like your philosophy is, the more people involved the better?

Lattin: Sure, if you want to make progress. If you don't do it that way, you're never going to get anywhere.

Geier: I understand what you've been saying, is that the Andrews is the best-known site for this kind of work, because of the combination of the region's diversity, the site, the people who work there, and the funding to work there.

Lattin: Well, more than that, too. It's because of the work that was done there, and it wasn't done for that purpose, but we had a database for the owls when that came along. Nobody else had it. There wasn't a single person who did all of that. So, Andy Moldenke and I were left, and sat in on those expert panels [formulation of Northwest Forest Plan]. We were the only ones that knew anything about it [regional invertebrate biodiversity], and we had a database nobody else had. So, it was one that became useful for that reason. You never can be quite sure how this information will be used. Sometimes, you can aim it for a certain thing, and then find it useful in a different way. For example, we did this for the Nature Conservancy, and it had to do with threatened and endangered species. We reviewed all insects that had been described, and I got rid of a bunch of them, just because there were so many information gaps. We added some more, and we now are in the process of reviewing all species of insects of Oregon for them to select out potentially-threatened species. Now, for a lot of them, we can only say we haven't got enough knowledge to even say that. But there are some where we do know enough to be able to make some positive statements. It's just the sheer numbers. The plants; we've got about 3,000, maybe 3,500 hundred species of plants. I've got 25,000 species of insects. Nobody knows them all. But there are certain insects we know that live in certain situations, and those situations are heavily-endangered, therefore anything that is dependent on them is going to have problems.

The wet grasslands habitat is one type of concern, in the valleys. There is almost nothing left of it. Most grass you see is introduced, drained, and ditched; all kinds of modifications. That's another reason. But the people in D.C. wanted to know what we should be concerned with. People always want to know how many insects are dependent on old-growth forests. That depends on who's asking the question. That's a tough. That's a very difficult question, for the simple reason, if you look at the history of the development of these old-growth forests, they're not very old. Old-growth Douglas-fir forests have been common in this region only seven, eight thousand years, maybe not that much. These insect species have been around way longer than that, millions of years back. So, some species require deep shade, some of them don't care too much who's making the shade as long as there's moss and some moisture there. But, you can't say with certainty that this particular species has evolved in those old-growth forests, because they haven't been there that long. Most species of insects have a much longer developmental life-history than what you get in old growth forests. I can't help but think it's true for the spotted owl, as that owl didn't evolve since old-growth forests were there. If they did, it would

be very, very unusual. It's a highly-adaptable bird that goes [range] from Canada to Mexico. You can't do that if you don't know what you're doing. (Laughs) They're very adaptable.

So, the diversity of insects and different functional roles they have in ecosystems, make them ideal organisms for study, especially nutrient-cycling in the soil. I'll tell you but, don't write it down. Only because, I have no explanation so I don't want to tell you. But, we had a meeting, about a year-and-a-half, two years ago, with a soil conservation group. This one guy was very excited, and said, "Did you realize there are living things in the soil?" I said, "Well, I've known this for a long time." We've had the Soil Conservation Service with us for a very, very, very, long time; seventy-five years. Its basic emphasis has been on biochemistry, biophysics, water, and fertilizer. All of a sudden, they discover there are living things down there. I'm delighted they finally recognized it. We must have ten or fifteen people on campus working on these parts of soil activity. They were going to put their base references underneath seed test fields, and I said, "Why don't you try a natural a grassland and let that be your base?" "Because," they said, "they've been burned and sprayed with pesticides and fertilizers." So I said, "I doubt there's very much under there anyway, and to use that as your baseline would give you a really bad picture." So, they said, "That sounds like a good idea." They've taken a few samples in the seed test fields, and there's nothing. So, they're beginning to see the importance I see.

That will be a wonderful step forward, to recognize what I and other people have recognized for a long time; that those organisms are critical to the nutrient-cycle. There are lots and lots of tiny little things about which we know remarkably little. But they're there in great numbers, and they're there at maybe three or four hundred species per square meter, which is a lot. There has been a lot of work done in the last year on organisms that live in the soil, and more recently on their functional roles. And more importantly, in the forest system, the nutrient-cycle. That's very important because in grass fields, as people still go out and spray a lot. And you can't do much manipulation in a forest, well, a few people and places do, but by-and-large, you've got to rely on natural processes. We've got to understand what's going on.

So, they've changed forestry practices. We used to take all coarse woody debris off the Andrews, and now they leave it. In some places, they have to put it back in. But most importantly, these are long-term resources for nutrients. That's changed the practices of forestry. The problems have shifted to young stands. That's what you've got. Most of the forests that have been cut, certainly on private land, we've got a 40-year or 50-year life-cycle [cutting rotation], you aren't going to get any old stuff. What are you giving up to do that? How long can you take the nutrients out on a 40-year cutting rotation? It grows in about 250, 300-year cycles, in the natural fire regime. It probably takes a while for organic material to accumulate in the soil. So, if you harvest it sooner than that, you may run out of nutrients. But, I'm way too busy doing forestry. Some people are worried about that. I would say that a major contribution to the understanding how forests function, is a recognition of the presence and the roles of these microorganisms, including micro-arthropods and bacteria, and other micro-organisms, and what they contribute.

Geier: I was wondering if you could talk about how you perceive your research interests at the Andrews to have changed over the time that you've been involved there since IBP.

Lattin: Yeah. That was why I was asked to come over. They had all this stuff they didn't know what to do with it. So they said, "How about this guy Lattin? He does that kind of stuff." So we did that. But I must confess, when I first went to the Andrews in '76, I thought it was dull (Chuckle). It didn't look like there was much going on there, entomologically-speaking. Well, obviously, there was a lot going on. And as I say, exhaustion set in after three, four, five hundred species. So, other people had to do more. It made me realize first-hand, how much that was out there. As long as you're interested in a significant group, and the group I'm interested in is a modest-sized species, I suppose there're forty, fifty thousand in the world. For North America, there are seven, eight thousand species – maybe. And there are so darn many of all these other groups. That's what makes them such good things to work with. They're small in size, they're large in number, and many of them have very specific roles. So, you can pack a whole bunch of them into a place, whereas maybe there's only one elk because they're so darn big. You can have four thousand species of insects in the same place where there is one elk. So, it helps to make it more apparent that we're not making this all up. And though I hear some of these number estimates of how many species there are, no one had any idea that there would be that many in a forest like the Andrews. That's the kind of stuff, you go to the tropical forest, there's a lot more to be sure, but, you know, they planned on a few species. I must have been among them as well, but there's evidence that that's not true.

Geier: So as recently as '76, that was kind of your perception of what you would find there?

Lattin: As I say, my first personal perception of being there was, "This is a pretty dull place. There doesn't seem to be much going on here." A curious thing is, if you compare the diversity of the arthropods versus any other group found there, the others don't even come close. If you take a look at tree species, and I haven't counted them, but there's just a handful. There are probably eight thousand species of arthropods. If you take the trees to represent the diversity, it's pretty darn low. You go farther south into the California forests then you get many, many more tree species, as they've got a real mixed bag of species. And the farther north you go, of course, the more homogeneous it becomes. With the Andrews, they're trying to go, into regionalization. Are we going to stay in one spot, or does the information apply to a broader area? We've looked at the insects all over Western Oregon and Washington, British Columbia, and California. So, we can begin to get a picture of the region. I guess one of my goals, if I'll live long enough to do it, is to analyze where every species occurs. I'd probably have to do it just with the bugs that would overlap on the Andrews. There are, for example, a lot of them on the west side. And there are east side desert species that come over the ridge tops. And there are some from California that come up, especially when it's hot. If you're out and busy in the summer, it's hot and dry down there, and they don't know that it's raining the other nine months of the year. There's some from the north coming down. So, there are these various components that all come together, and they all live on the Andrews in different places. That, I think would help to explain how these things are deployed in that environment. That to me would be really interesting, and we're beginning to get a picture of that. And then, you can see

these inconsistencies; there are lots of these and very few of those. What is it about that habitat that results in more of these than those?

Geier: Are you suggesting that the answer to that question lies in the Andrews?

Lattin: If you look back in history about eight thousand years ago, in a warm dry period, a lot of the expansion of the ranges of some species that came up from the south, occurred then, so that along the river, down even south of Corvallis, you can see these great big ponderosa pines, too. Not many, but some. There were a lot more in the past. That group is genetically-related to the ponderosa pine in Northern California, but not to those on the other side of the mountains. So, when it got dry and warm, they came up this way. So did oak, manzanita, and a whole bunch of other things. Some of these species are still hanging out here, and if their period of activity is during the warm, dry summer, they don't know the difference, and they could still do it. We have those on the Andrews, where it certainly rains a lot. But we have a very distinct xeric component, a dry component. Two different kinds; one is hot-dry, and the other one is cold-dry. Up on those rocky ridges you get the cold-dry component. So, you could begin to break down that fauna and get a better understanding. But there are still some awfully tough questions that I can't answer, and it's going to be awhile before anybody can, I think. Why are there more of one species or one group than another? We won't get into that, especially when you're dealing with, larger geographical areas. One group of predators in that same area, has maybe fifteen species, the whole family, fifteen, eighteen species, in the whole of western North America. How can this one genus have so many? And these others ones have so few? I sure don't know the answer. The basic question is: why do some groups have more species than other groups?

Geier: What's kind of your vision for that?

Lattin: What I'm trying to do is just bring together knowledge, some knowledge that may be useful to build on. I will do as much as I can until I can't do it anymore. There are some wonderful, interesting questions. And we tried. Our site has certainly taken the lead in biodiversity, an interest in biodiversity, to the LTER program. We've always been way out ahead of everybody else. Many of the sites have very little, partly because the people there just wouldn't do it. They just don't have anybody that will do it, or that could do it. There are a few now that are starting. Tilman commissioned a book on the bugs of the Cedar Creek LTER site, and that's going to be great. Tilman is very much interested in the people down at University of New Mexico. They started off doing that kind of thing, and that's great. But the people down in South Carolina and Georgia, wanted to, but didn't have anybody willing to do it. Obviously, this work has to do with ecosystem function. The other thing I noticed, and I don't understand it either, is that the water people I know are systematists. They can't seem to make the connection between the groups of critters they work with, and their functional roles in ecosystems.

Geier: Is that the site experience that you were talking about earlier?

Lattin: Yeah, but I know a lot of other people have had it. For some reason, California has never been involved in LTER. I find in the big programs, California always acts differently, and for some reason, they've never put in a site. My long-time colleague Paul Oleman, did what was probably one of the finest applied entomology studies. He was with the U.S. Department of Agriculture for 30 years. When I got back into administration, he took my place. So, he came here and we got to know each other very well. And he was an applied systematist, too. It was just nice to have a kindred spirit. He thought nothing of doing something like this that has no economic importance, although it now suddenly has more importance, for other reasons. But he also worked on some of the toughest darn questions that we thought were about diseases. Some people sort of back away from difficult problems, but he got right in the middle of them until it was solved. He was a bull dog (chuckle) who wouldn't stop. He's one of the only people that has done Mount St. Helens, before and after [1980 eruption]. This is where he went, over this area. He'd been through the area four, five, six years, before the thing blew, and he worked seven some years after that. He was, among other things, head of the systematic entomology laboratory for the USDA for many years. He was deputy director of the Entomology Research Service, which was like the ARS, just for entomology. These folks solved problems; this was their job. It made sense to apply your knowledge to solving a real problem. Some people that I know in this field are more interested in just the classification of these groups. They are less interested in the biology and ecology. But there are people who are, there's no doubt about that. I've tried letting all the students that I've had, tried to get them interested to see the relevance. And many of them have. Not all, but the guy that went to London, was the first Yank that they ever hired at England's International Institute of Entomology. They handle all the entomological problems that fall in the British Empire. He's running both their Ph.D. programs. He's used to putting his head down until you solve the damn problem and get onto the next problem (Laughs).

Geier: Well, the shifting of gears here, to the logistics of working at the Andrews. When you went down there to do field work, did you typically spend nights there, or commute?

Lattin: Well, I've done both. We got used to just driving down there, leaving at 4:00 or 5:30 in the morning, and coming back. What I'd usually do, is I'd work, and I'd work my way up to a certain point, 'till dark. Then I had to get home, had to go back down and come back home. So, it's 11:00 at night. They were sort of long days, and sometimes we'd stay there. But, in the early days, the facilities were limited, to say the least. The shower floor caved in under an owl crew member [in trailer] – that kind of stuff. Oh gosh, you can't believe what's down there now.

One of my former students, Jerry Holloway, stayed down there all summer two or three summers, working on little spiders and forestry systems, and he lived there basically all summer long. I remember some of the students complaining, "Doesn't that guy ever go to bed?" (Laughter) He had quite a work ethic. He went in there and worked his tail off. By helping other people in their work, we would get some of that material to augment the collection. The fellow who is the lead author on this publication [*Invertebrates of the Andrews Forest*], Gary Parsons, did that because he was a real guru on computers. He did a study and took 5,600

samples on the Andrews, four times a year for two years. He worked for a long time, but never finished it. He collected all this stuff, and my only insistence has always been, "If you're going to use his stuff, you're going to put his name on it. After all, if it weren't for his work, you wouldn't have anything to do." So, he did this and saw it through, and I think he deserves to be senior author. The second author was one of my other students, and he did an awful lot of the work, too. Jerry, that's the guy from Australia. Then there are these others, Norm [Anderson] and those folks, and Andy [Moldenke] gets a lot of species included from his work in the litter and soil sides of things. He took these samples in the lower foothills of the Andrews, and it's the best database on these kinds of critters. Andy especially, has gone in and subsampled a lot of that, and found the diversity and identifications, and has done all kinds of analysis. But he had so much repetition, and just a lot of knowledge, so it's slowly, but surely seeing the light of day. It's made a big difference. He did all this species identification work and put all this stuff on computers. It's now on-line, and there's a web page. I can't imagine anybody wanting to download 168 pages, but there it is. It also contains a comparison between three places: the Andrews, the Pawnee National Grasslands outside Fort Collins, which is now an LTER site, and Acadia National Park in Maine, which has this wonderful database on arthropods. I can never get them to use it right. People back there finally located a lot of the collection, and now they're trying to decide what to do with it. They don't have anybody there. So, I just don't know what will happen. Most big museums that could fit it in, would just amalgamate it [into corpus of their collections], but it loses integrity by doing that. So, I said we would handle it if they want it, but it makes more sense if it was back there.

Geier: Now, how long was Parsons out there taking these samples?

Lattin: He was out there for two years; four times a year, for two years. So, you probably better ask him. He's here. Yeah, he's working with Jeff Miller right now, and he worked for the [OSU] Extension Service for quite a while, gained a lot of practical experience. He loves beetles, so he loves it when a beetle becomes work.

Geier: He must have been down at the Andrews for a long time, yeah?

Lattin: Oh, he was there a lot. And he had funnels down there all over the place. These things would come back, and all these little things floating around in there. (Chuckle) And other people have done the same thing. I have a student that worked on insects, a group of insects, living on noble firs at higher elevations, mainly because I knew this tree had more of these bugs than any other kind of fir. And I don't know why, I still don't know why, but they did. He did that for his thesis, and was down there all the time. Then he went throughout the range of the species, including up to Mt. Rainier. The guys drove all the way up there to collect them, and they said, "Well, we just decided to go two days before, but we had to apply for a permit two weeks in advance." Meanwhile they're up there and are told, "Go back and apply, and then come back." They said, "Forget it," and stuck to the Andrews. He did a very nice job, so we had some idea of the diversity there. Most of the students included some work on the Andrews, a few worked almost entirely on the Andrews. I had one that worked on ten transects that cross

the river near the concrete bridge. And he's probably my last Ph.D. student. His project is about how to define the riparian zones by means of the insects found there.

Geier: Who is this?

Lattin: His name is Greg Brenner, and he's now with the national parks in Hawaii. And he's finishing up; he'll be back after the first of the year, to finish this up. Mercifully, nature gave us an opportunity for a before and after, to study, because of the big flood [1996]. So, the year after the flood, I had a guy go down and put in transects as close as you could get to Greg's. The whole place was reorganized. And now he's looking over that material, so he can compare that against what Greg had in a relatively undisturbed situation.

Geier: So, it's a work-in-process now?

Lattin: Yeah, and it's not surprising, with not only the same players, but the same general area. It's not the first time that's flooded, maybe not as vigorously in past events.

Geier: Yeah. It's curious to me a number of people have talked about how, with the LTER, they tended to rely more on post-docs instead of graduate students. But most of your work it sounds like it was graduate students?

Lattin: Yes, that's true. I did overlook one more person that I shouldn't forget. Gerry Kranz is a microbiologist. He retired many years ago, but during the IBP time, he did a paper with several other people on some organisms. He never worked on the Andrews after that, that I'm aware of. He's really one of the distinguished microbiologists in the world. But, there were very few people here willing to work there, so it isn't a matter of having a large bunch of folks on the faculty working down there. We had a forest entomologist who did some and then he left, Tim Schowalter, who works down there on forest entomology, and he's also an ecosystem scientist. He's very much interested, it would help to talk to him to get his perspective, because it would be unfair of me to put words in his mouth. He's more interested in the role of insects in forested systems, particularly those involved with canopies found in different stages of young stands. He's been interested in that kind of stuff, and he works on decomposition, too. He had a big project on the decomposition of coarse woody debris. He's had these decomposition plots at a lot of LTER sites. He's gone off the Andrews for a lot for his work. He's probably closer to someone really interested principally in forest insects and their ecological roles in forests.

We have others now like Jeff Miller, who's starting to do his work down there. He and his students are doing some sampling. [High resolution data on *lepidoptera* in the Andrews] That's one of the reasons I thought, "Well, let's get the flora well-known down there," because he was coming up with this wonderful knowledge of where the biodiversity occurs among plants down there – it's in the meadows. He's finding many *lepidoptera* species, and has reared an awful lot of them. I don't know, three, or four, or five hundred species now. He takes good color pictures of the larvae, the way you must do to get solid knowledge on those organisms. So, we're getting a whole lot, a mixed-level of investigation. One of his students is working on the

first study on the micro-distribution patterns of butterflies. That's one of the reasons we had Scott [Schindler] go up and botanize both those habitats; to see what host plants are there. So, we're beginning to get a better, a broader picture.

You just don't have an army of folks ready to pack themselves up and do that. You could be working down there and not come back for a long time. Now Jeff's up there for five years I think I could hire a technician, but I'd like to hire a graduate student to do it, because they get the practice from doing it. That to me was pretty natural, because I had a GRE for a long time. We've got two people working on spiders, including a really good post-doc. We do not have very many people that are there working in permanent positions, and that's always been a problem. Almost all the people have courtesy appointments. Most of them are either employees of the Forest Service or on grants, like Mark's [Harmon] situation. He's there on grants for years.

Geier: Yeah.

Lattin: I think he started working in the IBP days. I'm not sure how far back he goes, but quite a ways.

Geier: Could be, I'll be talking to him next week.

Lattin: I think that he got a promotion recently.

Geier: That's been kind of a central theme in this study here, you might have noticed. When you think about your work, how much involvement did you have with people at the district level or the forest management level?

Lattin: Well, some of the people had a lot, much more than I did. Their problems were in silviculture stand physiology problems. So people like Dave [Perry] and Fred [Swanson], of course, were relevant. Fred was in the Forest Service, you can't even tell the difference. Some of these folks, it's pretty tough to tell who's with which institution. But, anybody that needed insect help, we just did it, that's all. They just didn't have a lot of need for help. We were able to help them sometimes. But, over the years, what I've noticed is that slowly, but surely, whenever they were talking some major project, they would start including arthropods, which they never did before. So, now it is pretty much standard practice for a new investigation, large-scale investigation, there will be usually be an insect component.

Geier: About when did that start becoming designed in? You said LTER 3 was the beginning?

Lattin: I was involved in LTER 1 and LTER 2. I got funded from all of those. I think we were in LTER 3 and LTER 4 also. They only picked out three or four of us to join, as they had a lot of people. Before, they didn't have so many. Well, I don't know about the first one, can't remember, it's been a long time. They were always pretty encouraging to us. We tried to always be productive, and we tried to always be helpful to the people on the various projects.

And out of that we gained specimens, and they gained more knowledge. So, it was a mutual thing.

Geier: I gather your work with the district depended pretty much on whether they ask for help on a specific project?

Lattin: Well, yeah. After all, we have people like Steve Eubanks, who was an extraordinary individual and came up with a way of cutting [timber] to take a long-term view instead of just getting the timber cut out. We also have lots of conversations on insects. For example, he talked about having them bring the gypsy moth and put it in the Andrews, to stir things up a bit. I tried to learn more about management issues. I had an incredible amount to learn about forestry – still do. So I could participate in the discussions. But I can't help but think, again this is my bias, that the viewpoint of the systematists isn't all that bad. I mean, you'd look at some of these things very differently than the people who are only interested in the processes. And you maybe make people think of them differently, and I know I did. I thought a long time, "What would it be like if I never had done that?" All I can say is that life is a heck of a lot more fun than I think it would have been the other way. I mean that's probably not fair, because you only have one life, so you don't know (Chuckle). But, I've learned so much. Many of these people are deeply involved in the development of all these ideas. You'd have to be a clod not to pick up some of that. It makes you reexamine your own stuff, in different ways that you never would do otherwise. Having had some experience in applied entomology didn't hurt, simply because it helped make the connection between basic research and applied research. But there are people that absolutely refuse to do any applied work at all. I know a couple of people at the Smithsonian that brag about the fact they've never ever done one thing of that kind in their life. Now, I'm getting old and don't care, but I'd say, "I'd sure not brag about that if I were you" (Laughter). Sometimes you're in a situation where you're not able to do it, sometimes it comes accidentally. But to decide to not do it, doesn't make any sense at all.

Geier: If I understood you right earlier, you were saying that in entomology, at least, it's relatively rare not to do any applied work?

Lattin: Times have changed so much, and departments have changed so much. There are fewer of them now. I have to preface this by not blaming or saying that anybody else is doing it wrong. For one thing, most departments of entomology are at land-grant schools, almost without exception. As I said, University of Kansas, is about the only other one, and Cornell has one, but that's a combination of a land-grant school and a liberal arts university. Over the years, some of the smaller places have gradually reduced their departments of entomology. Utah State created a single department that includes entomology, zoology, botany, and biology, and entomology is having a very hard time. They got a new chairman who doesn't like entomology. Smaller schools, New Hampshire is in there. I don't know how they can keep it. They have like one graduate student, and it can't possibly last. I did a survey with the Department of Agriculture on where systematic resources were. And there were about ten institutions, and this was twelve years ago. Ten institutions that produced about 80-90% of the

Ph.D.'s among entomologists, of which Oregon State is one. Then, if you look further, about 25 people were in entomology and most of the students were grad students.

Geier: About 20?

Lattin: About 25. And many of those were in retirement years. So, by now, the numbers must be very much lower. There are lots of entomological problems out there that need to be solved and resolved. And they're getting tougher, they're not getting easier. With the disappearance of systematists, it's a big problem. I was on a panel for two years with the Office of Technology Assessment [U.S. Congress] on introduced organisms. That was very interesting, I'll tell you. Got together a group of us, and we produced this volume. OTA is an investigative branch of Congress. The most recent Congress said we don't need to have an investigative branch, after 25 years, we don't want to know anything anymore. (Laughter) I couldn't believe it. I absolutely couldn't believe it. This work has been highly regarded. The decision to stop funding this work had nothing to do with the people who do it. They just decided that they don't need to know.

End of Side B, Tape 1 (of 1)

Interview Stopped - Problems with Tape Recorder