

**Oral History Interview of
Llewellyn Densmore**

**Interviewed by: David Marshall
June 27, 2016
Lubbock, Texas**

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This interview features Texas Tech professor Dr. Llewellyn Densmore. Densmore discusses his career at Texas Tech in the Department of Biological Sciences, his emphasis on fieldwork, and the different personalities in his field and his department.

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David Marshal (DM):

The date is June 27, 2016, and this is David Marshall along with Bill Tydeman interviewing Lou Densmore. And I found out last time, your name is actually Llewellyn.

Llewellyn Densmore (LD):

Yep.

DM:

So let's start with the very broad topic of changes in molecular biology during your career.

LD:

Okay, so after I finished my PhD, which was essentially in biochemistry, and I was using biochemical and immunological techniques to ask questions in evolutionary biology—

DM:

And this was in '81?

LD:

That's when I finished, was in December of '81. I decided—with some really good advice from a number of very sage individuals—that I probably should try to incorporate molecular biology into my perspective. So I ended up being able to do a post doc up at the University of Michigan with Wesley Brown. And Wes was the—probably foremost person in the United States at least, and very likely the foremost person in the world in looking at, at that time, using mitochondrial DNA as a marker for evolutionary studies. And I didn't really realize how important he was at the time. You sometimes fall into things, and you don't even know how good it's going to be, so my reason for going up there was to try to learn some techniques and some theory in an area that I literally had very little knowledge about. This—you have to remember this is before, or within actually three years, of when sequencing—of Sanger-Coulson sequencing where you're actually able to consider sequences of—at the time it was considered unbelievable—but you could reasonably sequence 3,000 base-pair genes, okay, or regions of DNA, not at one time, but if part of a study, and so most of the time we were getting four to five hundred bases on our three foot tall gels. But that was my—my goal was to be able to learn those techniques and then apply them to research problems that I had found within study in the *Crocodylia* when I was a doctoral student. And so I had that in my back pocket the whole time, and it was really wonderful of Wes because he knew it. And in fact, the—once I completed my post-doc there and got here to Texas Tech—it served as the basis for my NSF grant which was funded, my first one right out of the—which was just incredible for me.

DM:

Well, I wonder if one of the reasons you were hired at Texas Tech is because they were really up on molecular—interested in developing this. And there you were.

LD:

That's exactly what it was. I happened to come around at a time—because, again, of that advice I had gotten, was able to incorporate—as sort of a first-gen molecular techniques applied to evolutionary studies. And so that was really a valuable—I came around at the right time.

DM:

This was Baker's baby, too.

LD:

It was Baker's—Baker was hot to get somebody here that had my level of expertise. So I was hired, originally, to teach a molecular techniques class. And I may have told you this, but I was the first person at Texas Tech to get fifty thousand dollars in startup, which is kind of amazing because now we routinely give \$550,000. But the primary reason that I was given that much money was that I purchased some centrifuges that I was able to use in the techniques class. I taught that for about three or four years—oh, maybe even five. But at the same time, in the spring, I was teaching molecular biology class to seniors and graduate students. And while you can maintain your being up to date with theory, it got to the point very quickly where molecular techniques were becoming so lab specialized that there was no way that even in a six hour course that I could teach everything that all the students—the graduate students—needed. So that's—and also the course started becoming prohibitively expensive. It was—when I was teaching it, it was probably costing fifteen to sixteen thousand dollars a semester to teach it, which in '85 was pretty expensive. So I ultimately gave that up, retaining the molecular biology theoretical component so that I could give people a background—the real problem with molecular biology is that the techniques have become so automated that you literally can teach a chimp to do most molecular biology. It's a matter of pushing a button here or making sure that things are mixed correctly or whatever. But what I found was that if you look at—think of molecular biology as a pyramid and the tip of the pyramid is absolutely the cutting edge, what students were trying to do is to come in mid-way in the pyramid and then grow from that, and the real truth is that understanding the fundamentals and understanding the principles for which all of these new technologies were ultimately developed from was a big partial vacuum in their academic background. And so for that reason, I have continued to teach that course for thirty years. And of course it has changed radically. It probably changes between 10 and 20 percent depending upon what major advance has been made from year to year, which does two things: it obviously makes it difficult on the instructor as well as on the students, but it also keeps your excitement up because you have to try to keep up with at least the science or nature level treatment of discoveries, or else you're not really doing justice. And that speaks to the incredible growth of

molecular biology. I had someone at one of the publishers—I don't remember which, but it was about six or eight years ago—tell me that the two fields that were growing most rapidly in science were quantum physics and molecular biology. And now molecular biology essentially is an umbrella that covers everything from cell biology to microbiology to genomics to—almost whatever you can think of in terms of biology, there is a molecular component to it that we now understand. And of course the initial generation of human genome over that eight to ten year period for, gosh, how many hundred million or billion dollars? And now we can generate a human sequence in a day for a thousand. And it's going to be less before long. But that's really what has happened. That field has just expanded in so many ways and in so many directions. So—

DM:

So for a student to learn the techniques, there's no longer the overall techniques course, they just learn it in the course of their research.

LD:

Exactly.

DM:

It's very specific.

LD:

Exactly. And unfortunately no instructor, or no student, could possibly learn it all. And so what you—what I think is most important, is that once they get that good solid foundation, which for the graduate students includes things like oral exams, which they dread but learn—the real value of an oral exam is that you learn why you're taking the exam. You put together neurons—neural impulses—that you didn't previously do, and when you do put that together, you all of a sudden know so much more than you thought you did when you came in. Now obviously you have to be well prepared, and you can't get that deer-in-the-headlight eyes, but that's not what this kind of exam is about. It's about preparation for the comprehensive exam for PhD students, which is probably the next time you'll be put on the stage to be—and asked to be thinking on your feet.

DM:

So there's an oral exam and then the comprehensive exam.

LD:

No, the comprehensive exam is for doctoral student toward whenever they're going to qualify for being a candidate.

DM:

A written aspect, you're talking about.

LD:

Well, it's both a written and oral—

DM:

Then it's oral.

LD:

—in our department. And so what the students did was come to me and say, would you mind giving us oral exams to graduate students so that we have some practice.

BT:

I see.

DM:

That's really smart.

LD:

Because thinking on their feet is something that most people don't really learn as an undergraduate. They learn how to memorize, they learn—some of them have great study habits, some of them, they're terrible.

DM:

I think you can conceivably go through public schools, and undergraduate, and graduate and never have an oral exam until that doctoral exam.

LD:

It's very possible. It's very possible. And if that happens, what I tell them basically, "Look. Most people on the oral exam will make within plus or minus five percent of what their final average is going to be." And that's nothing. Okay, in the big picture, that's nothing in terms of what your overall—what you're going to learn or whatever—but it does make you, at least one time, think about things in a slightly different way because you're getting asked, not by yourself—we all self-test each other. When you're studying you'd say, well I know this because—when someone else asks it—and then ultimately what the comprehensive exam is—at least in my opinion—is to understand that you can have people ask you a question on something that you know a lot about, and unless you really can sort of open your mind, then you may not be able to answer it because you may not even know what they're asking. And what that really bears upon is scientific communication at meetings. Okay, when you go to a meeting and give a talk—now every once

in a while there's going to be some jerk that's on the other side of the philosophical fence from you, but most of the time, people are just asking questions to ask questions. And they want the answer, but they may not come from the same background that you have, and therefore they're asking it in a way that you have to filter what the question is, and then once you're able to do that—the people that are able to do that best, and they can think on their feet, clearly are the ones that you remember. And of course the other part is that you remember the ones that trip over their tongues and those things get people jobs or get people rejected from jobs down the road.

DM:

Yeah. It really does sound critical when you put it that way, and it's good that the time is taken to allow them to take these oral exams. Because it's not really a written requirement—

LD:

It's not. It's forty-five minutes one-on-one with me. Everybody gets the same oral exam, and then I also have a matching component that the students affectionately call matching from hell, which they take. But the vast majority of people—the vast majority of people take it the second time as well. So the second exam for graduate students is mandatory, and it's optional for undergrads. The third exam is optional for everyone, but those students that are really serious will almost always take the third exam optionally—orally—because they get a tremendous amount out of it, and I don't know if I can use an expletive in here but—

BT:

Go right ahead.

LD:

But one of the very best students that I ever had take an oral exam is now a physician, but he was an undergrad at the time, and we went through the questions, and he did it in like thirty-two minutes, which is really impressive. And he was giving answers to my questions that I would have given to my own questions. And he just stopped, and he said, "Can we continue talking?" and I said, "Well, we only have about ten minutes left." And his response was, "Shit, Lou, I have learned more in the thirty-five minutes that we've been here about the information and how I understood it, than I learned in over forty hours of studying for it."

BT:

Wow

DM:

That's amazing

LD:

And what it is, it's making those connections that we don't always make ourselves. So that's been the value of that perspective.

DM:

Another thing I wanted to get you to talk about is a little bit more about croc research, especially—well, not just in the United States, anywhere, and some of the leaders in the field. I ask this because we were toughing on it here and there in the course in the conversation. So if you could just mention some names.

LD:

Well, what's really interesting is that now I'm one of the old guys. Back in the early eighties, I was this young pup on the—that was trying to rattle some chains, but—so yeah, I've worked with and argued with some of the foremost biologists of—evolutionary biologists—one of my initial—I won't say adversaries, but academic adversaries—is a gentleman named Chris Brochu, and—

DM:

Would you spell that—?

LD:

B-r-o-c-h-u. And Chris is a professor up at the University of Iowa—one of the leading Archosaur paleontologists. And the Archosaurs include dinosaurs, birds, and crocodilians. And so he is a remarkable instructor and an excellent teacher. And to give you some idea about where he's considered in his field, this summer he was in Africa, and he sent me a picture of him holding Lucy's skull. So they allowed him to examine Lucy's skull. And he said it's behind—the lock of the key to the lock of the inner safe is in another safe. So they don't want just everybody touching it. But we started off as adversaries, and then we shared an NSF grant, and he's—I consider him one of my dearest friends and also one of those people that forces me to think outside the box in my own way. And so we have contributed to each other over the years. I'll remember one phone call that was in about 1997 or 1998—and he called up and he said, "Lou, I have to tell you. You were right." And I said, "Well you better tell me about what, because I'm not right that often, and I want to remember this moment." So it turns out that we were disagreeing about the relative age of true crocodiles. And so much of the fossil evidence had pointed to a very ancient, relatively cretaceous type divergence. And—

DM:

Like Phytosaur, or farther back—or not that far back?

LD:

Oh not that far back. Phytosaurs are not really crocodylians. They're crocodylian like, but we're talking about the true crocodiles. And the true crocodiles, thirty years ago, were thought to have diverged in the cretaceous. Well it now looks like we've actually had a series of adaptive radiations, where you shut down to a very small number of species probably, and then those species radiate, and so—for example, we think that the radiation that gave rise to the four species of new world crocodile is probably between four and five million years now. Chris will tell you that the entire radiation of living forms that we have now was probably fifteen to twenty, and not sixty-five. So he's been phenomenal. Graham Webb from Australia—who leads and has led the Crocodylian Specialist Group of the IUCN—has been another remarkable individual.

DM:

IUCN is—

LD:

International Union for the Conservation of Nature. I believe that's what it is. But it's—he has just been one of those people that has been so easy to talk to over the years and to get advice from—and has taken an administrative role. And he's now recently become an author of a book that I reviewed for *The Quarterly Review of Biology*, which is just—as far as I'm concerned—it is the benchmark and will be for the next fifty years in crocodylian biology. It's just phenomenal.

DM:

Are there other names that stick out in your mind?

LD:

Actually, there's a number of names that stick out in my mind, but fortunately they're—

BT:

For the wrong reasons?

LD:

No. No, they're academically related to me, my students. Scott White—Scott White who now—I think I mentioned the last time, he works at Los Alamos—and now is in—he's been lent to homeland security for a bioterrorism—he holds an administrative job in looking at potential bioterrorism threats. Miriam Venegas, who is from Panama, and who is family, and was the first woman that was associate chair for—or associate director—for the Crocodylian Specialist Group in Central America. And who, like I said, when I go to Panama, I stay with her. When she comes to Lubbock, she stays with us. It's family. And I couldn't care more or value someone's opinion more. Other folks, Frank Mazzotti from Florida—

DM:

Do you have a spelling on that?

LD:

M-a-z-z-o-t-t-i I believe.

DM:

Okay. Where is he in Florida?

LD:

He's probably still at the University of— or Miami. I'm not sure which one. But he's done a lot of work on the physiology aspects of crocodylians, and has given me great insights over the years. Roberto Soberón, S-o-b-e-r-o-n, from Cuba, is a colleague that has been absolutely essential and critical in allowing me to get to Cuba—the three times I've been there—to actually work, either with crocodylians—and another one of his colleagues, Manuel Alonso-Tabet, but I'll get the spelling for you, can send for you—Tabet. That's it, T-a-b-e-t, who goes by Toby. And I mean, these people are just—they—with nothing, with literally nothing in terms of material, have done remarkable work.

DM:

You mentioned that you and Brochu have kind of come to a meeting of minds on certain levels?

LD:

Oh, we—I think what has happened is that we have such respect for each other's approaches that both of us understand that neither one of us has an axe to grind regarding our own reputation. What we want to find out is what's the truth.

DM:

Right.

LD:

Okay. And I tell my students this. Science is always—the answers you get in science are always relative. It's relative truth. It's truth based upon what you know—

DM:

Right. Just like history.

LD:

—and what technologies you have. But that doesn't mean that you can't—the fact that you may be wrong in ten years—in two years—doesn't matter. If you do the work to the best of your

ability, then you are contributing to science. And that is in fact—I mean, the people that make the huge reputations and the huge contributions will tell you—if they're honest—that most of the time they just got lucky. They were doing good work, and everybody knows they were doing good work. But there's a lot of people doing good work. And that's what the key for advancing science is: to do good work. And not every contribution is going to be a paradigm shift, but if you do good work, someone may use your work to create a paradigm shift because it's foundational. But yeah, Brochu and I have come to a real—he's been to Tech two or three times and stays at my house. And I mean, he's just a great friend now. And actually, he named a fossil form for me.

DM:

That is a friend. Unless he was calling you a fossil, I don't—

LD:

No, he—you know when you rename something, you have to give a reason, and his reasoning in the paper was that Lou changed our perspective on understanding long snouted crocodilians and their evolution.

DM:

What better compliment than that? Have you seen that before with other people or other circumstances for you, where early on in your career maybe there was differences, but you've kind of come together or at least respect each other's—learned to respect each other's opinions?

LD:

Most of the time, you know, I am not a scientist that throws things out there that are going to be provocative. I like to have the best story we can have before I do. And for that reason, I've rarely been castigated by—now early on when the sort of functional morphologist and traditional paleontologists were looking at my trees—I think I may have told you that I went to the American Museum of Natural History, and one of the grand ole men there, Max Hecht, was a paleontologist and he—I gave my seminar and there were great questions. And he said, "That's really interesting, Lou. It's just too bad it's wrong." And it turned out, the particular aspect he was talking about, I wasn't wrong on. So not that that matters either. I mean there's not much you can say when someone tells you that. I like what you do—and then he went on to explain that, for the reasons that molecular techniques were not going to be so valuable. But this was in about 1982, so he clearly was a bit of a dinosaur himself.

BT:

The crystal ball was a little cloudy.

LD:
Yeah.

DM:
When you came to Tech in, what, '85, right? And Baker was into molecular biology. You were. Who else was?

LD:
Well, we were probably the two that were most interested, and—

DM:
Which is why you taught the course.

LD:
Right. Exactly. And why, that—why really I was hired. Wes and Baker were good friends. Wes gave me a very strong recommendation, and Robert was always of critical part of our department. And if he had a strong feeling about something, it was probably correct. I'm not so sure that it was correct about me, but anyway, I've stayed here, and it's, you know, I love Texas Tech. There's just no way around it. I have known so many of the people that have come through, and have watched our department just mature and grow and hire better and better young people, and watch them develop, that—it's the fun part when you get a little older, as you think back and—you know, universities probably don't stay at plateaus. They either are increasing or they're going down in terms of their relative importance. And I don't think there's any question that Tech has enhanced its position, especially over the last twenty years.

DM:
Can you talk a little bit about departmental changes in biological sciences from 1985 to the present, just the highs and lows or the general direction, changes?

LD:
Well, Joe Gooden hired me. And by the time that Joe—that I came in, Joe was over in the dean's office, and so Jerry Berlin was my first chair. Jerry and I got along famously. He was very supportive of young assistant professors. Some of the really outstanding people that have worked in the department of administration were of course John Burns. John taught me an awful lot about leadership and also about making sure that you as an administrator took the fall when there was a disagreement between two faculty, or that it was your fault that you should have seen this. And it totally takes the air out of most people's anger when you say, "Look, I'm sorry that I missed this."

DM:

You play the scapegoat.

LD:

That's right. If you let yourself be the scapegoat, you have to have very little ego about that, but Burns was very good at that. Also very good people person, and I loved the fact how he would bring humor into it. Another person that was a real, I think, mentor for me was Francis Rose. And Francis was a senior professor when I was here. He went down—after about—I had been here about twelve years, I think, and ended up going to Texas State and was the chair of Biology down there for probably fifteen years.

DM:

What was he like, by the way?

LD:

Francis is another individual that is just—there are some people that are just absolute individuals, and that was Francis. I remember the first time that I ever was teaching in LH 100, and I came in one day and I said, “My God.” I'm short and I'm standing at the bottom of LH 100, and I'm looking up there at 300 people, teaching 1402—our non-majors biology class—and I said, “My God, it's intimidating.” He said, “Lou, What you have to do is think of those 300 people as 300 heads of cabbage.” (laughter) And he said, “And then think about how much information a head of cabbage can absorb in fifty minutes.” And I just absolutely loved it. I loved it

DM:

That sounds like such an important point to me. This idea of humor as a part of a good administrative—

LD:

It has to be.

DM:

—technique.

LD:

You have got to be—

DM:

I think of Donald Haragan.

LD:

Yes. Absolutely. Don never started anything without a joke. And Don was an administrator that I met on my interview here. We became career lifelong friends, not to the closeness that he and Burns were, but certainly great respect and admiration. And Don, I just think the world of him. I understand that Willie is having some real issues now, and it's just, I'm crushed about that because she was such a wonderful person as well.

DM:

Can you talk about some of the other personalities that were here when you arrived, especially in biology.

LD:

Michael San Francisco has always been an interesting guy that I just don't know how he doesn't age, okay. He's essentially the same age I am—maybe two years younger—but he looks like exactly the same way he did when he was thirty-five. And he is also a very good people person, and then John Zak. Zak was a—asked me to be associate chair after Clyde Jones retired and left the department. And that was an eye opening experience. And John is another one that—John understands the inner workings of the university about as well as anybody. We used to say that he could—legally of course—but he could trade money because the color of money is always what's so important—when you're a chair—about what color money you can use. But he could trade money so that you could get something done. And if you weren't sure whether it was legal or not, you could first of all ask John, and he would give you the straight up. And if it was, then he could figure out a way to do it.

DM:

You know it seems like in that position you would need to be able to tiptoe through personalities, also. It seems like you'd have to be a psychologist to be an associate chair or a chair of the department—

LD:

Especially a big one. Now the truth is I guess if you were the chair or associate chair of a smaller department it would be just as big because the relative variance in personalities is probably going to be greater than when you have forty plus people. You realize pretty early that there are groups of people that, first of all, are willing to work with you as a chair or associate chair no matter what, and then there are a very small minority that seem to always not want to work with you. And then there's people that are concerned about administrative leadership, that somehow the department is going to be impacted negatively by some sort of decision or whatever. And what I found personally was for those people like that, you actually relied on them for advice because if they felt that they were included—or at least their opinion was included in the decision making

whether or not they completely agreed with you a hundred percent—they at least understood what your perspective was.

DM:

They're acting—they see themselves as kind of a watch group.

LD:

Exactly.

DM:

What's going to happen here.

LD:

That's exactly right. Gadfly. And we have several in biology, but in fact, probably—I don't think he'll mind me saying this—but the person that is most like that in our department is Lewis Held.

DM:

And that's campus wide.

LD:

And that's campus wide. (laughter) But I found that I could rely on Lewis for sage advice, many times. And there are very few decisions that a chair makes that are unique to a single person making a yes or no. And therefore what I liked to do was to be as transparent as possible for ninety or ninety-two or three percent of everything, and then the associate chairs essentially knew everything up to ninety-eight percent. And then there was two percent as chair that you just really are not privy to share, and that is information that either came from the dean or the provost or sometimes even the president and that you were asked to understand this but not to share it at this time. But I think the higher the level of transparency, the more comfort you have in your faculty.

BT:

I think it was—I don't if it's directly relevant, but it pops in to my head as I listen to you talk—I think it was Nelson Mandela who said, "The key thing is to learn to lead from behind." That transparency gets you a long way down the road.

DM:

And kind of touches on the Burns approach too.

LD:

Well, and I also was fortunate enough to have Lawrence Schovanec as dean. He was the one that set me up as chair, and I was—Lawrence and I have shared a lot over the years. I presume it's probably more than some other chairs would have, but it was because biology was going through a change. We were hiring new people. There was a great emphasis on increasing the amount of funding that biology was getting, so we conversed a lot. I feel, be honest, that Texas Tech is in incredibly good hands with the President Schovanec now—simply because of his institutional memory and because of his dedication to Texas Tech.

DM:

What's it like personally? You have a personal connection.

LD:

He's a runner, okay—and not everyone knows that, but he is a runner—and he's a straight shooter. That's what I appreciate most—a straight shooter. And he also introduced me sort of indirectly to Tejas 2150 which is one of my favorite restaurants now, and it's out in Slaton. It's in the middle of nowhere and he said, "These guys took me out," and he said, "I begin to think this was a hit. That I was the hit—a contract out on me. And they were taking me out in the middle of a cotton field, and I didn't know if I was going to come back." (laughter) But the steaks there are remarkable. He turned me on to that and it's our favorite restaurant now.

BT:

2150? That's—

LD:

Yes, it's Tejas 2150. If you look it up—essentially your GPS will take you right there.

DM:

And it's in your backyard.

LD:

It's four miles away.

BM:

Well, y'all have connected on a lot of levels then. You like the same restaurant.

LD:

We have. Also, we've connected on our interpretations about some of the mistakes that have been made over the years. This is my personal feeling. I think that you develop greatness from within. There are very few times when you can go out and hire someone that is going to come in

and change everything for the better. And I'm talking about professors now. I'm talking about academics. And at least for the first fifteen years—and maybe the first twenty years I was here—there has been this idea that if we get people that are national academy or we get people that are this or that or something else that somehow we are going to change overnight, and that's not how you change a university. You change a university by supporting the people that are here that are outstanding. And there are many outstanding people in many departments in this university. And I personally like the fact that more and more of them are being supported now, and that doesn't mean—that doesn't mean that you can't recruit stars from outside, but the last thing that I personally feel that Texas Tech needs to do is to bring people in here that are going to retire—especially at the types of startup costs and everything else. And I think that Lawrence understands that. I think he has seen, as I have seen—I mean, we've had one in biology that, in my opinion, turned out to be a mistake, and the person—you would never have believed it—never have believed it based on talking to this person and everything else. And it wasn't that this was a bad person at all. It was that they were tied up in their own research, and their own research wasn't done here. And so they weren't here, and what they were hired for was to be essentially a leader of one of our major research groups and—

DM:

You can't do that from—

LD:

You can't do that from a thousand miles away. And so I think that we've all learned something.

DM:

Have you seen some really stellar people on campus who've become disgruntled because they're kind of neglected but another person is brought in?

LD:

I think early on in my career that happened. I know people like Henry Nguyen that were in plant and soil science went off to—and of course sometimes you just get the offer of a lifetime, and you can't turn it down, but I think that there are a few people that have done that. But one of the things that I think biology has done exceptionally well under the vast majority of chairs that have been here is to make our department a collegial one. One in which, yes we can go in and discuss—and we may even argue—but the fact is when we leave the faculty meeting, we should leave as friends and colleagues. And that has been emphasized by a number of chairs, and I think that's one of the reason that—or reasons—that we haven't lost so many of our good people. I mean, we're quite honestly top heavy now. We've got that many senior people that are still productive that haven't left. It's because of a lot of things, but it's also because of the relationships that they have here. Many of my best friends in the world are in my department.

DM:

Well, that says a lot for the chair.

BT:

Oh it does.

LD:

I think it does. I think it does.

DM:

Can you name some of the other names that were around when you first came in, like Packard? Did you know Packard? Was he still around?

LD:

I never knew Packard. I actually got to Michigan and I found out that he had gone from being the director of the TTU museum to the director of the Michigan Museum, and he actually died when he was up in Ann Arbor. But Jack Meacham was here, and Meacham was a herpetologist. So we shared a lot of common interests.

DM:

How many herpetologists were there—?

LD:

Oh. There were—the only two that—when I got here—were Francis and Jack.

DM:

So what was Jack like?

LD:

Very friendly but also very formal. He was a formal scientist, and not too easy to get to know, not as easy as you get to know as Francis was.

DM:

What were their areas by the way, specifically?

LD:

Well, Francis was—he worked on turtles and he also worked on salamanders.

BT:

He worked in the playas around here.

LD:

Yeah. Exactly. And Jack had done most of his work with frogs, I believe.

DM:

Well, did you feel like a minority as a herpetologist in this—I assume it was probably overwhelmingly mammologists at that time?

LD:

You know—

DM:

Was a big distinction made, or—?

LD:

I didn't feel like a minority. The people that were here that were asking the questions that they were working on were the same kinds of questions that I was interested in. And under those circumstances, it doesn't matter if you're working with herps or mammals or birds or whatever. So we shared a lot of common ground.

DM:

That would be a fresh exchange, it seems like—

LD:

Oh, yeah.

DM:

Across the—from different areas.

LD:

The people that—besides Robert Baker—I mean, Robert Bradley is an internationally known mammologist—has a tremendous reputation—has turned out wonderful, wonderful students and is a great colleague, someone that I relate to, ask advice of, we talk about lots of things, and that's—he was actually one of Baker's PhD students, and worked in my lab on summer—just because he was just about to graduate, and I had some money that I could use, and he was tremendous.

DM:

Another example of not a big ego but a nice sense of humor.

LD:

Yeah, Bradley does have—he's somewhat self-deprecating—and you know, Baker can be self-deprecating too, and often was. I think he was underappreciated to some level here, but even nationally, but when you look at the impact that his students are going to have for the next hundred years at least, it's just—when you turn out fifty PhD students—

DM:

Well placed.

LD:

Yeah. Oh, incredibly well placed—everything from endowed chairs to major players in companies, besides the academics. Yeah, it's just—

DM:

You were friends with Clyde Jones.

LD:

Oh. Very close.

DM:

Can you talk about him a little bit?

LD:

Clyde was unique. Clyde was unique, a person that was a little bit difficult to get to know—at least to get to his inner circle—but once you were there, you were there. I think of Clyde Jones and I think of jeans, Birkenstock's, and a Columbia shirt. And he wore that virtually all the time, whether it was a formal occasion or not. No socks. One of my initial encounters with Clyde was my fiancée, now my wife of over twenty years, borrowed my car and parked it in Clyde's spot. I unfortunately spent ten minutes getting dressed down for this in front of the mailboxes in the biology building by Clyde. And I told him, "Look. I am very, very sorry. It will not happen again. There was someone in my spot. She only was here for five minutes," and it just turned—well, Clyde let me know in some rather colorful language that that really didn't matter, and he didn't care about all that. But you know what, we just became famous friends, especially once he retired and we could spend more time, we would go to the—I had season tickets for many years, to the football games, and so did he—and then finally he just decided that—once the Frazier Alumni Center started to be used on football weekends as a site where you would go to—they, he and Mary Ann got a table right there in the middle that was cordoned off. And Chris Snead was involved and got them set up. So we would go and sit with them and have adult beverages and watch the games. Those were some of my happiest times. I'm not sure that the truth was told

more than 600 different ways, and some of those—but the truth as we saw it was told. We just had such a good time. I miss him a great deal.

DM:

Was Dildford—Dildford Carter was here.

LD:

I was—I never knew Dildford. I did not know him. He may have left essentially the summer that I did. Ray Jackson—I knew Ray very well. We affectionately called him X-Ray because he hated x-rays. He thought they would give you cancer. He was convinced they would give you cancer and that we probably got too many x-rays. And probably when the technology was around when he was of that age, he may have been absolutely right. Les Drew. Les had one of the most dry but absolutely cutting senses of humor I have ever—I mean, you literally would be walking ten feet off the elevator and realize that you had just been eviscerated, and then you stated laughing about it because you knew it was so clever. (laughter)

DM:

Knox Jones—did you know him?

LD:

I knew Knox a little bit. Not—Knox is another absolute individual. I mean, when you really look at it, the fact is—if you think about the three, and now four, great mammologists that Texas Tech has had—because I never know Packard, but Packard was obviously fantastic—but it was Baker, it was Knox, it was Clyde, and now it's Bradley. And Bradley overlapped with all of them a little bit. Knox, he became ill when I was still a relatively—I don't think I had quite had tenure, or if I had I had just gotten it when he passed away—I remember going over to his house when he was very sick and seeing him. I think that surprised him because we had never been particularly close, but I had such incredible respect for what he had done as a mammologist that I felt it was my responsibility to go and see him. I didn't know him as well as I would like to. And Clyde I didn't know so much until really after he retired.

DM:

Did the exchange of herps for mammals with UT, did that happen after you were here or before?

LD:

Just after I came here, and Robert Baker came and said, “Do you mind if we do this?”

DM:

Oh okay really?

LD:

And I said, "Look, I am not a museum curator. That is not my training. You know that. If you can get more samples of mammals for this museum, and we're trading our herps, do it." The only thing that we kept, we kept a small teaching collection that I use for my herpetology class down in Junction. But yes, I was well aware of that, and I was completely onboard with it.

DM:

You know, we've had conversations with other people from that department, and other departments as well, especially about fieldwork. And some people—Clyde is a good example—of a person who has lamented the movement away from fieldwork—more into the lab, less in the field. You do a lot of field work. Do you have a perspective on that?

LD:

Well, what I like—my perspective is that I want my students to appreciate the work that field biologists do in order to allow them to have the samples that they may use in their research. What I have emphasized—not quite to the same degree probably that Bradley or Baker does—but I have emphasized that I was all of my students to understand the animals that they work with and to have a real field perspective. And so every few years, we go down to Grand Chenier, to the Rockefeller Wildlife Refuge. When the lab sort of turns over and I have—just the way I learned, from a canoe with a noose attached to a solid wood pole, we catch gators.

DM:

So field techniques haven't changed much in croc studies.

LD:

Well, not getting them like that. There's a few—for really big things, there's cages and everything else that have been developed for catching some that would be literally impossible to catch. But I think the largest alligator that I have been in on catching was probably about eleven five and probably the largest crocodile was about twelve feet, so that's getting to the edge where it becomes dangerous. And the one thing we don't want is to put out students in danger, but I want them to have that experience because it's an incredible adrenaline rush. It is an incredible adrenaline rush.

DM:

And you have all your limbs, right?

LD:

And I have all my limbs.

DM:

There you go. Pretty good.

LD:

And we—in order to do some of the studies that we do, like looking at population genetics or conservation genetics, ecological genetics, you have to get out and get dirty. And so virtually every one of my students, to a greater or lesser degree, have had field components to their research. And one of the things that I like to say is that the reason that—besides the fact that they're good students—but the reason that Baker's and Bradley's and my students have done so well is that we like to get at that corner. We like our students to overlap a corner of evolutionary biology and molecular biology. And some of them are more molecular, and some of them are more evolutionary or ecological, but whatever it is, they can speak both languages. And what that does, it gives you a sense of not only breadth but of understanding of what the other guys are saying. And I think it makes you much more valuable in terms of getting hired because it increases what you can actually teach.

DM:

Last time we talked you were talking about some of these field techniques, and one of the striking differences in yours and those many people around here who study small mammals, is you're basically collecting blood samples, right?

LD:

Yep.

DM:

And theirs is more wholesale, trapping of lots, lots of bats and rodents to just—

LD:

Yep. They collect—

DM:

—put up.

LD:

—They collect skins, they collect all organs. And we used to. I've done that in the past. And when I say used to, I don't mean that it's not still appropriate, but most of the animals that we work with are endangered or threatened. And that's basically why we had to learn how to get what we could get from blood. You can't go out and sacrifice a Chinese alligator. That's just not allowed.

DM:

Well, yeah, you were talking last time about a technique that one of your students is developing, I believe, of looking at old carcasses or bones to determine—

LD:

Yeah. One of my master's students right now is actually trying to figure out the best way to have—first of all, to maintain the DNA as intact in bones, but the best way to allow the tissues—soft tissues—to be removed both in terms of maintaining the DNA and still maintaining the integrity of the skeleton so that you can get both kinds of information. Getting DNA from bone is not a trivial matter, but there are a number of techniques and some really, really important contributions by people like Svante Pääbo over in Europe that really did some of the very initial stuff with museum specimens. I mean, it's—for certain groups it's done regularly now. We've gotten away more from the systematics per se to the ecological genetics. And I think that just isn't an—it's an evolution of the lab because of the students that have come in—Miriam being one of them. She's, you know, leads our program in Panama. And we've been funded by the Panamanian government for about the last six years.

DM:

I know that you have an association with South Plains Wildlife Rehab. At some level—

LD:

Yeah, I was actually—

DM:

Do you do any biological work for them, is it—?

LD:

Many years ago I was the president of the board, and I served as a board member. And ultimately when I became associate chair, it was just not practical. And of course when I was chair it was not—however I still have—we have an internship program where biology students can take three hours credit and go out and work with Gail Barnes, and earlier with Carol Lee. And yes, we have had a long term relationship. And now that I'm no longer chair, I've told Gail that if she needed someone to serve on the board again, that I would be willing to do that. I just didn't—if I'm going to sign up to do something like that, I want to be able to do it. I don't want to have to tell them, "Well I can't," because I've got to go this place or that place as chair.

DM:

Are there other biology professors that are associated with South Plains Wildlife Rehab that closely?

LD:

I don't know if anybody else has an internship program like we do, but there are certainly—I know that Nancy McIntyre works—has worked—with them many times. And I believe that maybe even Tigga Kingston has as well. But I don't know for sure.

DM:

I think you mentioned last time you've done a release or two out at your place.

LD:

Oh yeah.

DM:

The ringtail—

LD:

We—they gave us a ringtail cat to release out there, and ringtails are special. I can remember in Junction, Dr. Bradley—his class—catching a ringtail, and they were in the next lab over. The decision was, how are we going to get it? They had it in a bucket, somehow. And how were we going to get it from the bucket so that we could subdue it. I remember hearing screaming and the climbing of a ringtail up the blinds of one of the windows in there. Yeah, they're—ringtails are something special. I cannot imagine an animal that—it's like a small badger. (laughter)

DM:

How long have you lived out in Yellow House Canyon now?

LD:

We've been out there since '99.

DM:

Can you tell us a little bit about wildlife sightings? Especially if they have changed because of the drought and then the wet years.

LD:

Well, I'll tell you, we've only seen one porcupine, and we saw it within the first six months we lived out there. But we've seen many more deer, where we are, fewer turkeys.

DM:

This is all mule deer?

LD:

Yeah. They're all mulies now. Fewer turkeys. Lots and lots of roadrunners, and therefore fewer and fewer horned lizards, which become prey for roadrunners. Lots of reptiles. We—my wife or probably move—probably ten—at least ten snakes a year.

DM:

What kind of snakes?

LD:

Most of the time the ones you'll see going across the road would be rattlers, or bull snakes.

DM:

Those are always western diamondbacks?

LD:

Where we are, yes. We haven't ever seen anything but a western diamondback, and typically what we do—unless it's some place where it really doesn't look like there's going to be potential for humans to be impacted by the snake. If I think that's true, I'll collect it, bag it, and we take it off ten miles away and release it.

DM:

That's why they're showing up at my house. (laughter)

LD:

Yeah. That's right. Exactly. We keep going toward Lorenzo. No, where we are we can't even see a house where we like to let them go. But, yeah, it's just been phenomenal. We see wonderful birds and noticed that the bob-whites— after we had that tremendous rainy year, followed by droughts, the bob-whites essentially disappeared. They're back now, and they brought with them the scaled quail. And so now we have an entire clutch of babies. I saw them the other day as I was going home with the mom and dad clucking around with the scaled quails. Like I said, lots of coachwhips. The occasional Texas longnose snake, *Rhinocheilus* is the genus, and then also an occasional hognose, but—

DM:

Desert kingsnake?

LD:

One.

DM:
Really.

LD:
One I found on the road out there, and we kept it for like eight years until it died.

DM:
Do you still have your great horned owl family?

LD:
They're around. I don't know for sure where they nest right now, but yeah, they're around. We hear them. And in fact I have small dogs, so I'm very, very conscious of allowing a chiweenie to go out at night when I'm hearing [imitates great horned owl]. (laughter)

DM:
Do you have coyotes or foxes in the neighborhood?

LD:
Oh yeah. We've got—and one of the people up top actually used to feed the foxes. And so they would just put dog food out there, and the foxes would come. And we'd see them all the time.

DM:
Grey foxes—

LD:
Yeah. Coyotes. I remember one time in the middle of the night, I couldn't sleep and—I love going outside at that time and just sitting. It happened to be about a three-quarter moon, and a coyote just walked out about, oh, fifteen yards from me. And we just looked at each other. And when I moved, finally, that animal left, but it was an interesting moment. In the moonlight, you know, quiet, just—I mean that's one of the things that we love about there. It's so quiet. In fact it's so quiet that we have to use, well we do use, white noise to help us go to sleep because it's just too quiet. There's no background.

DM:
What a great place for a biologist to live.

LD:
Oh, and we have *Neotoma*, the wood rats. What we'll do is—out our back window we have a place where we feed birds. And invariably, out come the *Neotoma*, and they're eating the

birdseed as well—and loving it—and then we'll see a coachwhip or a bull snake show up, and you don't see so many of those *Neotoma* anymore. (laughter)

DM:

Have you had any bobcats in that area?

LD:

Yes, in fact I came home one afternoon and about four-thirty, I had something that I needed to do in Slaton that closed at five. So I—this was probably fifteen years, or ten years ago anyway—so I came home and splayed out, laid out on my driveway was a young male bobcat. Well, I came up the driveway, which is at about a twenty-five degree angle or whatever, and he took off immediately right beside where—we have stalls, and then there's a small hill that goes up to where the house is—and so I drove up to the house and I was just so impressed. I had dropped something off and picked it up, and then I was going to go into town. I think it was probably picking up mail, is what it really was, and it was—you know, how the mail thing closes but they had had a package for us so I had to go get it—so I'm coming down, and lo and behold that animal was back out there and sitting there looking at me. (laughter) So I pulled back in to the garage and I called Erica and said, "Where's your camera?" And she told me exactly where it was. And I just started walking down, taking pictures of this guy.

DM:

Oh, you have it?

LD:

Yeah. And it's actually on—that's what she uses as her page. Either on her computer or on her Facebook or something like that. This animal just walked away from me, looking around every once in a while, and I got to probably within fifty feet of it. And now, my neighbor tells me that there's a young one, so this guy's probably full grown now for sure, but this may be his progeny. I haven't seen the female, but there's a young one out there. So yeah, we've seen bobcats.

DM:

How about mountain lion sightings?

LD:

We've seen tracks in the area. One of the really great things about living out there is that the Damron's own about three sections. So their property is directly across from ours. They have people that lease it and run cattle. Well, one of my students that was working on—Donna Hamilton—that was working on tarantulas, which is kind of a strange thing for somebody, but she was both mine and Nancy's. She found a paw print out there that almost had to be a

mountain lion, and mountain lion ranges are so huge that to run into one out there would be remarkable.

DM:

I've exhausted my questions. Bill, do you have any others to ask?

BT:

We're covering a lot of territory.

DM:

Or, Lou? Do you know of something we need to talk about that we've missed?

BT:

No, I think—

DM:

Well, we can always do this again sometime. Hopefully, if we do come up with more questions, if we can corral you—

LD:

Oh, no. It's—

DM:

It'd have to be before the fall semester though, wouldn't it? (laughter) I'll go ahead and turn this off.

End of Recording

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