Transcription of Oral History Interview with

GEORGE A. ZENTMYER

May 29, 1998

This oral history interview is being conducted on Friday, May 29, 1998, with Professor Emeritus George A. Zentmyer, who joined the University as a Plant Pathologist in 1944.

My name is Jan Erickson. I work in Raymond L. Orbach's office. He is the eighth chief administrative officer of the Riverside campus.

Erickson: Dr. Zentmyer, would you begin by telling us where you were born and a little about your mother and father and any brothers and sisters you have?

Zentmyer: Yes. I was born in North Platte, Nebraska. We left there and my father was a Union Pacific Railroad employee, a dispatcher, then chief dispatcher finally out in LA. So that was my father.

And my mother was born in Colorado, but they lived in North Platte for a number of years. So that was our home for a while.

Erickson: What took your father from Nebraska to California?

Zentmyer: For some reason, they moved him in about 1920 to Las Vegas, Nevada, of all places. It was a step up there. He was the main dispatcher there.

And about three years later, they moved him to Los Angeles where he was chief dispatcher of the Union Pacific Railroad for about thirty five years or so.

It was a very big job really, especially during WWII. He was involved in a lot of the train movements and so forth. We were in LA from about 1925 on.

I have one brother, John. He is a year and a half older than I. Strikingly enough, my dad was a train dispatcher and my brother was an airplane … what do you call it … a controller.

Erickson: Oh, really?

Zentmyer: He got into the controlling business for aircraft. He was in that for many years and went to UCLA as I did. And then he got into the air traffic control business. Unfortunately, he died just about a year ago.

Erickson: Oh, that's too bad.

Zentmyer: Just the one brother.

Erickson: You said you went to UCLA.

Zentmyer: Yes. I did my undergraduate work at UCLA, 1931-35.

Erickson: What did you study there?

Zentmyer: I majored in … I was interested even at that time sort of in Botany—plants and so forth. So my A.B. was in 1935 in Botany at UCLA. From there, I went up to Berkeley for graduate work. I got my Ph.D. in Plant Pathology, Master's in '36 and Ph.D. in '38.

I became interested in Forest Pathology. Forests have been one of my main interests, getting out in the woods and the forests and hiking around and fishing. So that sounded like a very good career, so I got into that. It was my major there at Berkeley.

Erickson: When you were going to UCLA and Berkeley, what were the sizes of the campuses at that time?

Zentmyer: Oh, I think UCLA was around three or four thousand, very small. I was there from 1931 to 1935. And Berkeley, I was there from ’36 to ’38. Gosh, I am sorry I can’t remember.

Erickson: Oh, that’s ok.

Zentmyer: I think it was around seven or eight thousand students. A nice small campus. A nice small city then at Berkeley. It was a fine experience.

Erickson: Good.
When did you meet Dorothy?

Zentmyer: That wasn’t until 1940. While I was still working on my Ph.D., I had a full time position with the Forest Pathology Office of the U.S. Department of Agriculture.

Erickson: Really.

Zentmyer: Working out in forests, just what I wanted to do. Well, three years I spent the time traveling all over the forests of Northern California and Utah and Oregon.

Erickson: What was it that you were studying?

Zentmyer: Several diseases. The main one was a disease called the “white pine blister rust.” I don’t know whether you have ever heard of that.

Erickson: No.

Zentmyer: It’s a major disease that affects white pine trees. It is caused by a fungus with spores spread in the wind. There are terrific cankers, and death of branches and whole trees. I worked on that.

In fact, at that time the white pine blister rust was just moving from … it started on the west coast up in Washington. When I was working on it in the late ‘30s, it was spreading down into California by spores spread by the wind for several hundred

Zentmyer: miles. I was scouting and looking where we could find the rust, how far south. And they would send in eradication crews. It was an interesting job.

Erickson: Is that still prevalent today, that fungus?

Zentmyer: It's still around but not nearly as much of a problem. In fact, a lot of white pines have been harvested for timber and so forth.

It's a strange disease. It has two host plants. One host of the plant it affects is currants and gooseberries named ribes, the scientific name.

The disease will spread from pines to currents and gooseberries and cause some lesions and spots on the current and gooseberry leaves. Then on those leaves it produces spores which attack the pine.

So it is a very strange interaction between the different hosts and different types of spores. That's quite a serious disease. It has caused trouble for millions of white pines all over the world. Wherever they grow white pines, the fungus is quite often present.

Erickson: So you worked with the USDA then for …

Zentmyer: Yes, for about four years. Then an interesting position turned up in Connecticut at the Experiment Station there.

Dr. Horsfall was my chief there and had the idea to develop plant chemotherapy, to find out if you can get control of plant diseases by injecting the plants with chemicals, just like you do humans.

He got this new position established, and he invited me to come back to Connecticut and work, especially on another very serious disease called "Dutch elm disease." You may have heard of that.

Erickson: Yes, that one.

Zentmyer: That has killed millions of elms all over the United States and over in Europe and Asia. So I went back in 1940 to work on that disease and was there about four years.

Erickson: Now was that with the University of Connecticut?

Zentmyer: No, it was the Connecticut Agricultural Experiment Station.

Erickson: Not affiliated with the university?

Zentmyer: No, we had some connections with Yale, by way of library use and meetings and so forth. But it is a very nice small Experiment Station, and some fine work was done there with Dr. Horsfall and his colleagues.

Erickson: What time period does that take us up to?

Zentmyer: I left there in '44 when this new job came up in Riverside.

Erickson: Umm. Tell me how that happened.

Zentmyer: Professor Horne was with the Experiment Station. He was the main person working on avocado diseases and subtropical diseases. He died in 1943, I guess it was, so they solicited people around the country for somebody who might like to apply for that job. So I applied.

Erickson: How did you hear about it, George? How did they advertise then?

Zentmyer: They put the ads in some of the scientific journals, and they got the word around to the various Experiment Stations and universities. So I heard about that through Dr. Horsfall, my boss there. It sounded like an interesting job working on this new crop to me, which at that time had a very serious disease just showing up called "Phytophthora Root Rot."

Erickson: Will you say that again?

Zentmyer: Well, let's see. Where's my circular. It's a disease caused by fungi. It's called Phytophthora root rot of avocado. The name of the fungus in somewhere in there (referring to a pamphlet).

Erickson: Oh, I see it.

Zentmyer: So that just showed up in California a few years before that. It looked like there were going to be very serious problems.

Erickson: Was that an airborne problem?

Zentmyer: That was mostly waterborne and soilborne. It has been a terrific disease. It's killed millions of avocados all around the world. It attacks the roots instead of like the blister rust or the elm disease. It attacks the roots and kills the plants and make them look sad like that (referring to a picture of an avocado tree with the disease). It's really a terrific disease. That's mainly the thing I have been working on for the last fifty four years.

Erickson: Was Dr. Horne also studying that?

Zentmyer: Yes. He just began to study that because it just began to show up a couple years before. He was starting to work on that and he passed away. So I took over that position.

But when I was in New Haven, that's when I met my wife. I met Dorothy there in New Haven in 1940. So we were married there in 1941. Let's see you had a note here. We have three children, three girls. They all live up around San Francisco, interestingly enough. So that's our main family. We do have five grandchildren.

Erickson: Do you? Oh, that's nice. The grandchildren, are they boys and girls?

Zentmyer: Four girls and one boy.

Erickson: Four girls and one boy.

Zentmyer: In fact, the person who invited me here was the Chairman of the department then—Dr. Fawcett.

Erickson: Oh, yes.

Zentmyer: Of course, you have probably heard that name. (Dr. Zentmyer was showing a photo). This is him with a visitor from Brazil. But Dr. Fawcett wrote me several times in the late '30s and early '40s and finally invited me to come out and take this position here in Riverside which I finally did.

Erickson: What was Dr. Fawcett's title?

Zentmyer: He was Chairman of the Department of Plant Pathology.

Erickson: I see. So you had communicated with him for several years actually before the position was available.

Zentmyer: Yes, but not too much before the position in late 1943.

(We looked at a few photos Dr. Zentmyer had brought along).

Erickson: This photo shows an outdoor scene. Is that an avocado tree?

Zentmyer: No, that's a citrus tree. Dr. Fawcett worked mostly on citrus. He has a book on citrus diseases. He and Dr. Klotz.

Erickson: Was that fairly common that you would have a foreign visitor?

Zentmyer: Um. Yes. We had many foreign visitors.

Erickson: And would they be asking questions related to your research projects?

Zentmyer: Yes. Mostly. Riverside was really sort of the world headquarters on citrus in those early days, and still to some extent. I had many foreign visitors after I arrived here in September of 1944.

Erickson: When you came in ’44, was the Station here or was it at Mt. Rubidoux.

Zentmyer: It was here. It was moved here in about ’15 or ‘16—somewhere along in there.

You had a question of why they moved from Rubidoux. (Dr. Zentmyer was referring to a list of possible questions that I had submitted to him earlier). They only had a small area that had about thirty acres of land at the Rubidoux Station. So they decided they needed some more and that’s when they started to build the campus.

When they started here, the campus had about four hundred and twenty five acres. Compared with that little plot at Rubidoux thirty acres…

Erickson: Do you know how they selected this area?

Zentmyer: No, I am not sure. I know they looked all around in Southern California. They talked about Whittier first and various other areas. Other cities were trying to proposition the committee, of course, to have the Experiment Station at their place. We had the wonderful CUC even at that time.

Erickson: Oh, tell me about that.

Zentmyer: No, I am sorry. CUC was formed about fifty years ago. Yes, this is the fiftieth anniversary, late forties.

Erickson: But there was a group interested in the Citrus Experiment Station even before?

Zentmyer: Yes. There were some people who would come out and talk with the Experiment Station people here, especially about citrus diseases. Of course, first it was in Rubidoux and then when they moved out here, they came over here and had lots of visitors—local people and foreign visitors like Bitancourt (Brazil. Photo with Mr. Fawcett).

Erickson: He's the man from Brazil?

Zentmyer: Yes. So that was '44 when we moved west.

Erickson: So you and Dorothy had been married for a time then. What kind of consideration was that for you to move all the way from the east to as far west as you could?

Zentmyer: Well, it wasn't so bad for me, because I had grown up and went to college and high school out in this area. I liked California. I was quite attracted by the offer, and it looked interesting. A different type of position again. So in '44 I started the avocado work and other tropical diseases. In fact, I brought a copy here.

I don't know whether we have time to go over it here, but three or four years ago, I was invited to write a prefatory chapter for the *Annual Review of Phytopathology*, which is a premier review journal of pathology and an international journal.

Each year they have one pathologist from somewhere in the world to write a so-called prefatory chapter. This was mine in 1994 called "Plant Pathology: A 55-Year Retrospective." So that gives a summary, and you may have that if you would like.

Erickson: I would like that. Thank you.

Zentmyer: It gives a rundown of my miscellaneous career, my travels all around the world.

Erickson: Oh good. I'd love that.

Zentmyer: Especially on the avocado and the Phytophthora fungus. You are very welcome. (We looked at some photos.) These are some pictures of the fungus just to give you an idea of what a fungus looks like. These are taken under the microscope.

These are different kinds of spores that the fungus forms—the resistant spore and the spores which forms swimming spores inside them. That's why it's spread by water. It forms these

Zentmyer: little swimming spores which are spread by water and spread long distances and live in soil for a long time.

Those are three different kinds of spores. That's the vegetative stage of the mold. You see mold on oranges or other fruits or vegetables—that's the so-called vegetative stage of the fungus. It's really a fascinating fungus. I've done a lot of work on it, some fifty years.

Erickson: How did you make the transition … if you were interested in trees, in forests, was that an easy transition for you to narrow down to the avocado tree?

Zentmyer: Yes, it really was. It's a different kind of disease, but it's still a tree and there are all sorts of different problems with trees than with vegetables or flowers and so forth. So I made the transition very well, I think, from the blister rust to the Dutch elm disease and then on to the avocados and other plants.

This is a strange fungus. It has almost a thousand different plants it affects, not just avocado, but all sorts of things that are mentioned.

If you take one of these circulars … you can take that along with you. It gives a little idea of the other type of hosts it attacks: eucalyptus trees, papayas and other types of trees, flowers, vegetables. It is a very diverse type of fungus. It is especially severe in woody plants or trees. So that's where it causes the big damage.

Erickson: Having studied this for a number of years, what's the best approach then for conquering it?

Zentmyer: Well, with a disease like this, especially with a tree crop, the best approach is to try to find some resistant plants or resistant trees like they were doing with the Dutch elm disease and with the blister rust.

So I started that in the early '50s. This avocado belongs to the genus of plants called the Persea. That's in a family where

Zentmyer: other trees like sassafras and Cinchona, quite a large family of trees, some of them tropical.

And the avocado itself—we finally found out by studying it for a few years—that there are many native trees in Central America.

In fact, avocados grow wild from Mexico clear south to northern South America. Some of them are small trees, some are huge and reach 80 to 100 feet tall.

Erickson: Oh, really?

Zentmyer: Some of the avocados in the wild get pretty big size, 60 or 70 feet.

Erickson: Now, would the fruit be edible from the wild trees?

Zentmyer: There are about eighty different species of that genus, and there are only about four or five of them that are edible. The avocado itself and then there is another close relative that is edible. It's a smaller fruit.

I spent a lot of time looking for this resistant type of plant. Most botanical gardens have Herbaria, collections of dried plants that have been collected over the past hundred years, some of them.

So I visited many botanic gardens like the New York Botanical Gardens and St. Louis and Chicago Natural History Museum and the botanic gardens all over the world—Kew Gardens in London, etc. looking at their collections of these wild Persea. I would find where some of those might be collected and take notes, and then I would go out in the field.

So for forty years, I have spent a lot of time collecting these wild avocados around in various parts of Guatemala, Honduras, Costa Rica, Mexico, all through Central America and down to South America, Columbia, Venezuela and down into Chile and Argentina and in the Caribbean. That's sort of outlined, too, in

Zentmyer: that prefatory chapter. It tells about my miscellaneous collections.

So that's been a large part of my work, and we do have some resistance now based on those wild trees.

We have some other resistance we have selected here in California for some resistant rootstocks, so the nurserymen are beginning to use some of our collections now. They are out and available commercially.

We are getting some resistance. We don't have the ideal resistance. A very high resistance unfortunately is in another group of those wild perseas which have a little fruit about the size of a pea. They are not edible and they're not graft compatible with the avocados, so we can't use that resistance very much, but we do have some fair resistance now. That's one of the aspects that's looking pretty good.

That is being combined with several different approaches, like biological control and chemical control and sort of physical control and developing barriers that are outlined in that circular.

Dr. John Mengie, who took my place here in the department as a Phytophthora Avocado person, is doing a lot of that now with mulches and biological control and some with chemical control, systemic chemical control. So it's hitting the thing from four or five different aspects but gradually getting it worn down.

The avocados are really doing much better now than in the '40s and '50s when they were just dying like mad—the trees all over San Diego County, Santa Barbara. So it's been a terrific disease all over the world.

Of course, they grow avocados in fifty or sixty countries now. The avocado began from a tree that was used, originally collected down in Mexico, which became … you've probably heard of the Fuerte, a greenish pear-shaped fruit. It was collected by a collector from a botanical garden, nursery, over in Altadena. This man collected this for a Dr. Popenoe. One of

Zentmyer: his relations is a famous avocado explorer now, Wilson Popenoe. So that avocado was collected in 1911.

After the first few years, it was propagated extensively in California. Gradually, it spread around the world until it was a major avocado all around the world from picking budwood from this one tree in Mexico, south of Mexico City.

That's how the avocados got spread around. So many other countries are growing them now, especially Australia, South Africa, Spain and Mexico. In fact, Mexico is now the No. 1 avocado producer in the world. But they are produced very widely.

Erickson: Where does the United States stand in there, George?

Zentmyer: We are second in production to Mexico in California. It's a pretty good-sized crop, nothing like wheat or citrus or some of the big grains or rice, but it's a pretty substantial crop. We get several hundred million dollars crop per year, and for a specialty tree, that's pretty substantial production. It's been an interesting career.

Erickson: It sounds as though you are still doing some research. Is that true?

Zentmyer: Yes, in a way. I am still planning some of the collecting areas down in Central America. People are going out and trying to make additional collections from those that I made.

I had a very fine assistant in Guatemala who worked with me for about twenty five years, Dr. Eugenio Schieber. Unfortunately, he died of a terrific intestinal infection that developed in a hospital in Guatemala City. He died about four years ago, so we have lost a wonderful friend as well as a good collector, a man who knows avocados very well.

Erickson: Do you have contacts all over the world?

Zentmyer: Yes. Quite a few in various countries and a lot of people I can correspond with or see at various meetings and so forth. My collections have been in about twenty different countries, mainly in Latin America. I made some collections in Australia. We have gotten in with some of the botanists over there. It's a pretty widespread project.

Erickson: I'll say.
Let's get back to the early days if that's alright.

Zentmyer: Yes.

Erickson: Tell me what the city of Riverside looked like when you and Dorothy moved here.

Zentmyer: In '44. Yes, it was a nice small city of about 25 or 30,000 people. Of course, it is quite different in the last few years, but it was a very nice town, very little traffic and no smog and so forth.

Erickson: No smog?

Zentmyer: No. Smog didn't show up until about the late '40s or early '50s. Then it showed up gradually and then more extensively. Dr. Middleton—you may know his name—he was the main person in our department who worked on smog and finally developed the Air Pollution Research Center here in Fawcett Laboratory. But the air was beautiful and clear. It was quite a peaceful little town at that time.

Erickson: Where did you live, do you remember, when you first moved here.

Zentmyer: Yes. We rented a house first on Victoria Avenue closer to town, not out in the very scenic part. It was just a place we rented for a couple of years.

Then we built a house over on Lynwood Place, and then that got a little small with our family expanding, so we bought a

Zentmyer: nice two-story house on Chapman Place, which is over east of Magnolia Center.

Erickson: That's a beautiful area.

Zentmyer: We lived there for about thirty five years, and finally a few years ago, we moved out to the Canyon Crest area. It was very difficult to give up the good old house. It was getting a little too much, a huge yard with big Sycamore trees and Redwood trees. So it's quite a nice place out here, and it's much closer to the university, too.

Erickson: And you still come into the university, don't you?

Zentmyer: Yes, for three or four days a week anyway. I have an office over in Boyce Hall, second floor. The Plant Pathology Department fortunately has some room there, also in Webber Hall and Fawcett Lab.

Erickson: I am sure they'll always have room for you.

(laughter)

Zentmyer: That's a very nice relationship. It was really a small campus then, too, when we first moved here, because the new campus hadn't developed until ten years later.

There were just those three main buildings: the main administration, horticulture building, the big one across the top of the complex and then two wings.

Plant Pathology was in one and Entomology and some of the Plant Physiology people were in the other wing. Soils and Entomology. So it was a nice little Experiment Station we had then.

Erickson: And was the Faculty Club in existence when you came?

Zentmyer: No. It started after we came. We got a building out in the March Field area from Camp Hahn and moved the main

Zentmyer: building there from one of the government buildings. So that became our Faculty Club and eventually University Club.

Dan Aldrich was quite involved with that, too. He and Jim Kendrick and several of us were quite involved in the planning of that and working on the remodeling.

Erickson: Planning the permanent building?

Zentmyer: The building, um hmm. The building that was moved, adjusting it and changing the building that was moved from Camp Hahn.

Erickson: How did you know that the building was available?

Zentmyer: I am not sure. We had a committee looking for the possibilities of a club house or something. I didn't happen to be on that committee, but I know they looked all around the vicinity and found they had several buildings out there that they were willing to part with at what was formerly Camp Hahn. So that made a very nice center for the Faculty Club with some expansion since that time.

Erickson: But it's on the same site?

Zentmyer: Yes, um hmm. That's where it first was moved.

Erickson: Was the Barn here in those early days?

Zentmyer: Yes. That was down there and was part of the agricultural connection.

Erickson: Was it in the same location it is today?

Zentmyer: Um hmm. It was in the same area. That is sort of a holdover from the early days.

Erickson: What was the original building used for? The Barn.

Zentmyer: I am not sure if it actually for maintaining and keeping horses that they used for working on the fields in those early days.

Erickson: For the agriculture, how many acres did the university use?

Zentmyer: Oh, they had this 425 acres. I haven't really kept up on that, whether it's all the same or whether it has expanded. But their main area is what they are still using, like the fields down what used to be Pennsylvania Avenue and all the citrus and all the plantings down there on over towards Canyon Crest. So it was a nice experimental area for all sorts of citrus, avocados and many different plant crops.

It was quite a nice little place at that time. A group of us used to have lunch on the patio at the original horticulture administration building, which is now a business administration building, of course. We'd have lunch out there every noon, real informal.

The main activity at that time was horseshoes. There were horseshoe pits up above there towards the hill from the administration building. Quite a few fellows used to go up. In fact, I used to play—not an energetic game—but it was an interesting game. That was one of the noon activities at the University Experiment Station.

Erickson: Agriculture was a very dominant force in this whole area, was it not?

Zentmyer: Yes, especially citrus here in Riverside. But it eventually got into … I am not sure how many, but a wide variety of crops, perhaps forty or fifty different crops: avocados; all sorts of vegetables; grass, different types of grasses for golf courses and so forth. So it has expanded. Of course, the two major crops are still citrus and avocado. We work on all sorts of problems.

You asked a question about how a person makes contact with the university. Now, that was a good thing about the university. It developed this extension service fairly early in the life of the university and had farm advisors …

Erickson: Now, is this when it was still the Experiment Station?

Zentmyer: Well, now they still have this network of extension people, farm advisors around the state. That was how people who had problems made contact through the farm advisors in their county or through grower groups.

Each crop has its own special group, like the avocado committee and the citrus board, and they would contact those people and then get in touch with us to see what problems they had and what needed working on.

So that was a very good cooperation, the extension people and the university. It's going to some extent, less than it was, of course, in the early days. They don't do as much field work as they used to.

There is a lot more emphasis on the basic research, all sorts of problems. You may want to get into that a little later. The problem was basic research and the Experiment Station still doing some so-called applied research, field work and so forth.

But there is a lot of emphasis now on molecular biology and all sorts of fancy new nomenclatures. We are making a lot of progress scientifically, both in what they call the applied and the basic, very complicated more esoteric-type of research. You get into all sorts of things.

You see all these buzzwords in the literature on biodiversity and molecular biology and conservation biology. I don't know whether you want to get into that now or a little later, probably not too much. But there are some tremendous advances being made.

For instance, Dr. Mike Clegg is a typical example of that with his knowledge of DNA and genetic relationships to various plants and how it affects the breeding and selection. Of course, he was elected to the National Academy of Sciences … what was it, four or five years ago, based on his terrific work on

Zentmyer: genetic applications of biodiversity and molecular biology and so forth.

Erickson: So plants have DNA just as human beings do?

Zentmyer: Yes, a very similar type of substance. But there are a lot of key buzzwords now in relation to the different aspects of research.

Erickson: That's amazing.
How is that information that you gather in your research, how is that disseminated to individual farmers? Is that back through the Coop Extension?

Zentmyer: Yes, they have meetings and so forth and take that out to the field. Or the farmers come in here too for meetings quite often. There was a big group of avocado growers that met a couple of months ago down here in the special meetings rooms off the Commons.

Erickson: Terrace Rooms.

Zentmyer: Yes. There were about two hundred avocado growers who came in for that meeting. There was a very great interest.

Erickson: Did you attend?

Zentmyer: Yes. Uh hmm. So there is still a lot of contact with the farmer and the grower and the grower groups.

Erickson: George, when did you hear about the possibility of a liberal arts college being added to Riverside?

Zentmyer: Oh, yes. We should get back to that. Somewhere in the late '40s, Gordon Watkins was appointed as the Provost for the campus, and he developed and selected the heads for the various departments in the university.

So we heard a lot about that in the late '40s and early '50s. Of course, finally the campus opened here in '54. There were several new buildings.

Erickson: How was that viewed by the Experiment Station people? Were they anxious?

Zentmyer: I think some of them sort of resented it, the so-called invasion. But generally, at least, many of us thought it was really a nice addition to have different types of people, different contacts, some of them in the same areas of biological science, physical science or entomology. In fact, I think it is a really fine addition.

As I said, some people that had the sole use of the campus before all the "invaders" were a little alarmed. That was true to some extent, but I don't think that was really a very serious problem.

Of course, the people in the new college had quite a euphoria. They hoped this would be developed into a liberal arts college, a small liberal arts college.

Erickson: Do you know who actually came up with that concept, the four year liberal arts college?

Zentmyer: Gee, I am not sure just who. I know there were several people who voted to push that, but I can't remember just which ones. Of course, that gradually had to phase out as the university grew.

Erickson: Is that how you would term that? The reason for it transitioning from the liberal arts to the general campus was what?

Zentmyer: Just the expansion of more students coming in, more departments, more personnel, more faculty, just a gradual increase from the original. I have forgotten just how many were in that original campus.

It's certainly a wonderful campus now with the huge expansion in students, faculty and programs and courses. It's been a very interesting development.

Erickson: Well, how did things change when the new campus was established here? You talked about the sciences. How was that for you as a scientist? You were hired as a scientist, and when the campus was established, how did that transition occur for you to become a professor?

Zentmyer: Well, just sort of gradually as we developed our own graduate courses, too, and attracted graduate students.

Erickson: But initially, it was a four year liberal arts college. So did you as a scientist teach classes in the new liberal arts college?

Zentmyer: No, not really until they got into the … what do they call it?

Erickson: General campus.

Zentmyer: General campus.

Erickson: So about 1960 or so?

Zentmyer: Yes, about ’60.

Erickson: And then we established the graduate program. When did you become a professor?

Zentmyer: That was in the early to mid ‘60s. We had professorial rank and of course assistant and associate and on up to full professor. I had been there quite a long time by that time. I was a so-called Plant Pathologist for a while and then I became Professor of Plant Pathology in the early to mid ‘60s. The same with the other people in other departments, Soils and Entomology, Horticulture and so forth.

Erickson: Did your entire department then become professors or assistant professors? Did they get the academic title after the graduate programs had been established?

Zentmyer: That was more sort of gradual. I guess there were a few actually involved in courses who were Senate members at first,

Zentmyer: and then they got into the other type people even though they weren't teaching a course. And they got the title, like Assistant Professor or Associate Professor or full Professor, depending on their experience.

Erickson: At that point then, is that when you became a member of the Academic Senate?

Zentmyer: Yes. That was the early '60s. Of course, some of us were quite involved in the Senate. In fact, to just mention my personal case, I was Chairman of the Campus Graduate Affairs Committee.

Erickson: When would that have been, George?

Zentmyer: That was in the mid '60s to early '70s. I was Chairman of the CCGA, which is the campuswide Graduate Affairs Committee for all the campuses in about 1975, I believe it was.

Several other people in the original Experiment Station—like … Randy Wedding was a very important figures in the Senate and chairman of several statewide committees, and Mack Dugger and so forth. We had great input from that time on in the statewide, systemwide Academic Senate, Academic Council and so forth.

A very interesting time. In fact, one year I think the campus had about five or six chairman of major statewide committees. This was the year Mack Dugger was Chairman of the Committee on Committees statewide. He did some very fine politicking, so we got a lot of recognition then.

Erickson: He made some key appointments then?

Zentmyer: Yes. It was an interesting time. We started out with Gordon, as you certainly know. Gordon Watkins was Provost, and then Herman Spieth (Spieth Hall), and then Ivan Hinderaker. Fortunately, I knew most of those people quite well through campus relationships.

Zentmyer: And of course, Tomás Rivera was a very interesting Chancellor. He did very well, an open approach. Gordon is my favorite. Did you ever know Watkins?

Erickson: No, that is before we came.

Zentmyer: Oh, that's right. He was a very human Welshman, a wonderful warm person, a very good organizer.

Erickson: I understand … people have told me that he was the perfect choice as the first Provost.

Zentmyer: Yes, he was wonderful with the town relationships and everything. A very good group of chancellors, I think. Even my friend Dan Aldrich was the Chancellor here for a year.

Erickson: You were good friends, weren't you?

Zentmyer: Yes. We had a lot of relationships, our families grew up fairly closely here in Riverside in the early years, mid to late '40s and early '50s.

Erickson: He was hired as what, George? Initially.

Zentmyer: He was in Soils. He was a Soils Chemist, Assistant Soil Chemist. And of course, he moved on up after he left here. He went to Davis and headed the Soils Department and then to Berkeley as Vice President for Agriculture and so forth. To Irvine as the founding chancellor of the campus down there. He was a wonderful man. A very good athlete. We used to play a lot of tennis together. He was a very fine person.

Erickson: And then he came here to Riverside.

Zentmyer: Yes, for about a year, I think, in the '80s.

Erickson: It had to be in the '80s, because he came when Tomás Rivera died, did he not.?

Zentmyer: Oh, yes, that's right.

Erickson: So that would have been about ’84 probably. I am not exactly sure.

Zentmyer: Yes, I think so. It’s been a wonderful group. Our current chancellor is doing a great job with town relationships, as you know. And faculty relationships are wonderful. He is a good planner and organizer, things are really moving.

The curve is going upward in the numbers of students and buildings on the campus. I think the campus has really done tremendously.

Erickson: Well, you have known all the chancellors, haven’t you?

Zentmyer: Yes, pretty well.

Erickson: The one before Dr. Orbach was Rosemary Schraer.

Zentmyer: Rosemary and Dan Aldrich and Tomás.

Erickson: And Ted Hullar.

Zentmyer: Oh, Ted. I’m sorry. Yes, Ted was really an active person and had lots of ideas and moved things around pretty well. I liked him, too. He was a very wonderful person. We have had a very excellent group of chancellors.

Erickson: Yes, we have.

Zentmyer: Now, in addition to the avocado, which is one of my main crops, in connection with tropical explorations, I have gotten to work on cocoa, the chocolate tree and some other tropical crops. That has a similar disease to the avocado, a similar fungus.

Erickson: Is that what got you interested in that?

Zentmyer: Yes, because it was the same sort of disease problem. So I had a grant from the Cocoa Research Institute for twenty five years

Zentmyer: to work on their Phytophthora problem. This is a terrific problem all around the world. Quite often, they will lose half of the cocoa crop from this one fungus that attacks the cocoa pods.

I have gotten into some of that and some work on citrus. Not too much, but other tropical crops like macadamias and papayas.

But my main focus, of course, has been on the avocado. And we have covered quite a bit of that. I have done a lot of work on different aspects of control.

Erickson: You talked about this grant for the cocoa tree from the … company.

Zentmyer: American Cocoa Research Institute.

Erickson: Thank you. You said it was for twenty five years. When you apply for a grant, do you try to put a time limit on it? How would twenty five years come about?

Zentmyer: You start with a few years, and then they renew it.

Erickson: I see.

Zentmyer: As I made progress with it, they continued the grant for working on the fungus and travelling around to West Africa working on their cocoa problems and Brazil, Central America, Malaysia. It's an interesting crop and such a wonderful product. Of course, you know chocolate is one of my favorite foods.

Erickson: Mine too.

Zentmyer: So it's great to work on that.

Erickson: Yes. We are grateful for your doing that!

(laughter)

Erickson: But you established an on-going relationship it sounds like.

Zentmyer: Uh huh, with the Cocoa Research Institute.

Erickson: Uh huh. Did you do that with other institutes also?

Zentmyer: No, that was the only other one I got into besides the avocado and general Phytophthora study. It's been a very interesting career, I must say.

Erickson: Well, you were rewarded in a wonderful way. You were named to the National Academy of Sciences.

Zentmyer: Oh, yes.

Erickson: When was that?

Zentmyer: In '79. So it's been almost twenty years.

Erickson: How did you learn about that?

Zentmyer: That's an interesting arrangement that the National Academy has. At their annual meeting, which is always the latter part of April, they have one meeting they devote to voting on new members. Of course, we'd received a lot of material on potential new members.

The meeting is always on Tuesday of that membership week. People have an opportunity to vote on all the people they think should be elected. Of course, we've seen all the material by that time, so minds are pretty well made up.

On Tuesday morning at 8:30 to 9:00 o'clock … I bring that up because I heard about this … I received a phone call at 6:00 a.m. on April 21, 1979, from my former boss, Dr. Horsfall, whom I mentioned was at Connecticut.

He was elected to the Academy while I was still in Connecticut. He was a very stalwart and excellent Academy member. He

Zentmyer: called me at 6:00 a.m., but I was barely awake and told me about this wonderful thing that had just happened at the meeting—that I was elected a new member. That's my first word that I got of it. It was a very wonderful occasion.

Erickson: Was it the area of the avocado research, do you think, that prompted this?

Zentmyer: I think it was more sort of a combination of my work on the basic aspects as well as the more practical aspects of plant pathology—as on the avocado problems of control, resistance, etc.

I worked on how the olive fungus is attracted to plants and found out that the avocado roots, for instance, exude chemicals in the soil which attract these little swimming spores.

So I worked that out as a mechanism of infection called chemotaxis, tactic movement of these spores. I think that was one of the main things.

And I did chemotherapy. I did work on injection of trees and plants with chemicals and some other basic studies of how the fungus operates and how we can best control it.

I think it was a combination of those … and then by that time, I had done a lot of work collecting these native plants and sorting these out for a basis for resistance, just like the combination of some of the basic and some more applied work.

Erickson: Well, that was a happy day!

Zentmyer: Oh, yes, certainly.

Erickson: How did you celebrate it?

Zentmyer: They had a reception in the department. Don Erwin was Chairman then, and they had a reception that afternoon and evening announcing it and celebrating the event. It was a wonderful day.

Erickson: I'll say. And wonderful for the university.

Zentmyer: Yes. What are there? Four or five of us now that are members of the academy—John Moore, an early member.

Erickson: Austin Riesen.

Zentmyer: Austin, yes. Unfortunately, he passed away. He didn't live long enough to enjoy his election.

Erickson: Noel Keen was just named, was he not?

Zentmyer: Yes. He is another member of our department and elected this year. He was inducted into the academy last month, in April at the last meeting. And, of course, Mike Clegg was elected several years before that. So that's quite a wonderful organization.

Erickson: A distinguished group.

Zentmyer: Um hmm.

Erickson: Let's talk about some of the deans you have worked with.

Zentmyer: Ah, yes.

Erickson: Who was the first one?

Zentmyer: The first one was a director, Dr. Batchelor. You probably know the name, of course, Batchelor Hall.

Erickson: Um hmm.

Zentmyer: He was the first one I had connection with as an administrator. He was a very excellent administrator. He was a little hard to get to know. Of course, I was fairly young when I first came here, but I was very impressed with his acumen and his development of the overall program here. He was followed, of

Zentmyer: course, by Al Boyce, a wonderful active and vigorous and good administrator and organizer of the Entomology Department first. He did a lot of wonderful work and did a great deal of field work even when he was Dean and Director.

And let's see, I think Mack Dugger followed Al Boyce. Of course, I had known Al Boyce. In fact, I had taken my first agricultural science course from Dr. Boyce in 1933 at UCLA when I was doing undergraduate work. When I was an undergraduate student, he came over and taught a course in Entomology from his base here in Riverside. The course was three days a week. That was my first exposure to agricultural science. I have known him for quite a few years.

And Mack Dugger was a very good scientist, a good politician in organizing things on the campus. Incidentally, he was a good handball player.

(laughter)

I played handball with Mack for quite a few years. He was an excellent dean, I thought. He had some original ideas, and he wasn't one to just follow along a routine line.

He was followed by Irwin Sherman. Sherman was also a good scientist, a different aspect than Boyce, but he was very well organized. He had some novel ideas.

Let's see. I guess Van Gundy followed him. Of course, I had known Van. Originally, he was a Plant Pathologist and got into Nematology as sort of a subset of Plant Pathology. So I have known him for a long time from his graduate work back in Wisconsin. He did a wonderful job, too, keeping a lot of the field work zeroed in and in very good organization. He still did some of his own research when he was a dean.

Then Mike Clegg followed Van. He is an excellent scientist, probably the best scientist of the group. He is maintaining a wonderful program in spite of his administration working on these DNA relationships. In fact, he has been testing some of

Zentmyer: my wild avocado collections, he and his staff there in the lab, trying to find the relationships of those different wild species to the current avocados.

I have been bringing him material from the herbarium back in Washington, the Smithsonian Herbarium, and he is working with some of the leaves of those plants collected way back forty or fifty years ago.

Mike has done a very good job with the grower groups. It is remarkable how much he gets done.

Erickson: That is amazing that he can continue that research with all the administrative duties that he has.

Zentmyer: Yes, it is amazing. He has a special grant, too, from the avocado people to support some of his work with the Persea genus, the avocado genus. It is amazing he can keep that up. He has a vigorous, active laboratory going.

Erickson: When you were here … well, you are still here doing your research, but when you were a more active scientist, what was your lab situation like? Did you have graduate students working for you?

Zentmyer: Yes, usually.

Erickson: How many?

Zentmyer: Usually one, two or three at the most. Of course, I had technicians, too, at the same time. The lab was a very busy place there for quite a few years.

Erickson: You've also been a consultant internationally, is that correct?

Zentmyer: Oh, yes. Gosh, I meant to look up some of my records on consulting. I do remember that I was a consultant in Western Australia working on a similar fungus to the avocado fungus that attacks eucalyptus trees. Also South Africa. I consulted down there. And Spain, another avocado area.

Erickson: Now how does that happen? How do they contact you?

Zentmyer: Just by correspondence. They happen to hear about me, or we meet at meetings, or they visit. We have had a lot of visitors from avocado countries, Phytophthora countries. It's just when they happen to visit or hear of my interest. Hopefully, I have been able to contribute something to their problems in their country.

Let's see, I was a consultant in Malaysia for a while on cocoa and the tropical crop problems. Sorry, I can't quite remember them all. Brazil. We were in Brazil on the cocoa problems.

We have done quite a lot of miscellaneous consulting and attending meetings, too, in most of those countries for some of the agricultural problems I was involved in. Yes, it's been a very interesting relationship with contacts and meetings. There are quite a few different countries where the relation was to the avocado or cocoa or Phytophthora …

Erickson: Did Dorothy travel with you to some of those countries?

Zentmyer: Yes, some. Of course, I had a sabbatical leave in Australia in '64 and '65. She and two of our daughters were there for about nine months in Australia. We had time to travel all over Australia.

When we were finished, we came back through Europe. We got a car and spent about four months in Europe visiting universities and research contacts in major countries like Germany, Switzerland, Italy, France, Denmark and England.

So that was very good exposure. Also in Asia, India, Thailand, Sri Lanka. We spent some time in the Philippines. So it was a very interesting time.

Dorothy has been with me to Guatemala and Mexico a time or two, mostly in relationship to meetings.

Erickson: You and Dorothy have been so involved in the city of Riverside in community activities.

Zentmyer: Yes, we really have met some wonderfully interesting people in relation to those various projects.

Of course, not just the university, but the Mission Inn, the Botanic Garden, Hospice, the YMCA, the Museum of Photography, the Philharmonic and some other civic organizations around town.

We have been involved in many different organizations and as an officer in quite a few of those.

We have interesting contacts through our church also.

Erickson: Another thing I wanted to ask you, too. I know that you like to sing. You told me you were a member of the Choral Society here on the campus.

Zentmyer: Yes, just for a while. But I haven't done much since.

Erickson: Do you remember when that was established?

Zentmyer: I think it was '55 or '56, somewhere along in there. Bill Reynolds started it up pretty soon after the main campus opened.

Erickson: You stayed in that for a few years?

Zentmyer: Yes, just the first few years. Others like Bob Wild may be still singing with the group.

Erickson: Really?

Zentmyer: Larry Atkins and several faculty members. Yes, that was an interesting aspect, too.

Erickson: I'd like to ask you another question about the pride that the early faculty had in the campus. It's just very special and unique, I believe. Can you capture that feeling?

Zentmyer: Gee, I am not so sure just how to do that. Well, certainly this new faculty group had a lot of very interesting, active and stimulating people. They had all this research and excellent teaching they did when they were starting out to develop the main teaching part of the college.

There are just wonderful individuals who were pushing their aspect and doing the best they could to make it a top rate department or section. I have gotten to know a lot of those people very well.

They have had a lot of interesting ideas and new people pushing the campus and pushing their own discipline. They did very well also in their research, pretty much maintaining a lot of their early interests pursuing various aspects of their particular discipline. There were some very wonderful people.

Erickson: Is there anything else that you'd like to bring up that maybe we didn't cover?

Zentmyer: I think we covered just about … Oh, one thing I might mention in relation to science research in general. I was reading an interesting science magazine called Bio Science, Biological Science produced by the American Institute of Biological Sciences. There is an article in the last issue which was very favorable to science.

I might just mention that President Clinton is developing what he calls a research plan. He has proposed a new $38 billion fund for research in science, and much of this to …you've heard of the National Science Foundation, the National Institutes of Health. There would be big increases in grants to those two major organizations. It was a very favorable article in the May, 1998 issue.

Zentmyer: It is an interesting aspect of further science development. Of course, I hope for further humanities development, not just science. But this is quite a plus for the science aspects.

Erickson: So there would be more money available through grants.

Zentmyer: Yes, through NSF and NIH. So that's a welcome thing. I just happened to see that a couple of days ago.

Erickson: Thank you very much, Dr. Zentmyer. This was a privilege to have you participate in this interview.

Zentmyer: I am very glad to do it. I hope it's been helpful and understandable. It's certainly been a wonderful fifty five years here on this campus.

Erickson: Isn't that something. This is home!

Zentmyer: Yes, it certainly is.

Erickson: Well, thank you.

Zentmyer: Thank you, Jan.

END OF INTERVIEW