

James L. McConnell - Oral History, Tape No. 4

This tape was transcribed by James L. McConnell

Note - Text in parenthesis has been added for correction or clarity.

McConnell - This is tape number 4 of an oral history recording of James L. McConnell. The recording took place on May 31st, 2007 at my home in Lilburn, GA. I am doing the recording without with out being formally interviewed because it is quick that way and I'll have to transcribe it. It's just easier. (The interview is under the auspices of the Southern Forest Service Retirees Association.) That's what is going on right now.

It seems I always have to go back on each recording and catch up on something I left out. We were stationed at Macon at the Eastern Tree Seed Lab. from August 1971 till July 1975. At that time there were a lot of things going on but one of them was the US Forest Tree Seed Center where we sent seed overseas to foreign researchers. It was the time before President Nixon made his famous trip to China and opened the doors of that country. Before that time we had no relations with China and we just could not deal with them. We received several requests(for seed) through the mail and we just could not honor them. I checked and double checked (with the Regional and Washington Office) on that. One interesting story, China is so much like the United States in it's land mass, it's huge, as is the United States. A lot of the vegetation over there is very, very similar to the vegetation we have here. Especially in some of the trees such as slash pine (*Pinus elliottii*), especially the pine trees. Apparently they made arrangements with one of the seed collectors in the South. He came to me and I said, "I'll do what ever I can to help you but remember, officially I can't have any contact with the Chinese." He said he would deal with it but asked of we would test the seed using the normal procedures before he shipped the seed. I said, "Certainly, we can do that. I don't really have to know where that seed is going." We normally, or never, did not ask what they were doing to do with it when they send it to the lab for testing. We just assumed they were going to plant it and grow trees in the South. But in this case it wasn't. He did, he collected something like 5000 pounds of seed. We tested it and didn't hear anymore until one day he called me from the (Atlanta) airport. He said, "I'm at the airport and I've got a big shipment going away." I said, "OK,

I'm glad to hear it." I think he got really a lot of good money for that seed but that 5000 pounds of slash pine seed went to China. Later on, of course, relations got better but I had left the seed lab by then. (In fact, in 1992 before I retired, January 1993, I recommended our seed manager at Ashe Nursery, go to an international conference on seed cleaning and management in China. He was so pleased to get to go.)

During my time in the Forest Service, 36 years almost, on three different occasions I applied for a job somewhere. All the other times I was just sent somewhere they thought it would be a job I could handle and things that they wanted me to do. On three occasions I did apply for a job: of those three, I got one of them. The first one, I guess, was when we were stationed at Moncks Corner at the seed orchard there, working with that (tree improvement). There was a form that came through, a notice came through that said that the regional geneticist job in Region 6, which is Washington and Oregon was open and they were looking for applicants. Well, I called the Supervisor's Office and told them that I wanted to apply for this job and they said, OK. They sent out there, my resume', my official record and things like that. We didn't hear anything, and didn't hear anything for a long time. After several months I called Vick Fink in the Supervisor's Office and ask him what happened, or had anything happened. He said he did not know but that he would call out there and ask. He called me back, I think it was the next day and said, "Well, you know Jim, they canceled that." I asked what had happened but he had no idea. Later on I got to thinking about it and I think they had a person out there, in fact I know they did by talking to some people in Region 6, they had someone out there that they wanted in that job and I was probably more qualified for it than was that person because of my experience at the seed orchard in Region 8, in starting the seed orchard and working with Tom Swofford. I had a good bit of experience when I applied for the job and these were all new type jobs that very few people, at that time, could qualify for. If you didn't have the education, been to school for a masters degree in genetics and very few people in the forest service had done that. Then you just had to rely on experience and I think I was the most qualified person they had that applied but they didn't want me. I said, "OK" and went on from there.

Later on when we lived in Leland, MS there was a job out in New Mexico, Region 3 I think that is, New Mexico and Arizona. Same type of a job, regional geneticist out there and they were

getting ready to put in a great big nursery there in Albuquerque, I think it was. I applied for that job. Well, in this case I didn't get it because Jack Pitcher, who had his PhD in genetics also applied and got that job and went out there. Like in all good things, or everything, some things turn out for the best. That was a nasty job because those people out there didn't know what they wanted or how to get there and Jack stayed a couple of years, I think he put in the nursery where it didn't belong but that was where they wanted it. They were not used to the growing of trees and wanted convenience rather than reality. You have got to pick a good site where the soil is proper and water cheap. They wanted it where it was convenient and I know this, for a fact, because later on when I was in Atlanta as regional geneticist, someone from Arizona called and said they were going to put in a big seed orchard and they had given him a whole section of land to put in on. When we got to taking about it the section had little good soil. It was just a section they couldn't do anything else with so it wasn't going to grow good trees. They just didn't have the right outlook, in a lot of cases. (Actually, I knew Jack Pitcher very well and we had several conversations over the years about Region 3 and a lot of other things. I considered him a good friend but our contact was limited)

Then in 1975, in the spring, the job in Region 8 opened up. Tom Swofford retired, Tom had been the regional geneticist. He was the original one that built the program. He retired and they had sent out a regular announcement, which is what they are supposed to do. I jumped on that like a honey bee on honey and, this time I did get the job. Bill Tuttle was the regional silviculturist and I think he was just tickled to death because he knew me. I had been up there several times working with State & Private Forestry and I had a pretty good background on the regional program. Although I didn't have the education that a lot of people, at that time, were getting in forest genetics, I knew the forest service and I knew how it worked and I think it turned out to be a good choice for both the forest service and myself.

So, I started in the RO at Atlanta (It was July 1975). The first month was kind of hectic like it always is. We couldn't sell the house in Macon right away. The market wasn't as depressed as happens a lot of times but it just wasn't a quick sale. I commuted, it was 100 miles door to door so it was at least a two hour commute each way every day. Coming into Atlanta was no fun, that was for sure. At that time we were put on what they called flex time where you could work anywhere from 6 o'clock in the morning to 6 o'clock in the evening. You could adjust your hours just so long

as it took to get the job done. Most people could do that, there were a few people exempt from it but most of us were included. I would get up real early to get down there as close to 6 o'clock as I could and then I would leave a little bit earlier after an 8 hour day and miss some of the traffic. Oh boy, 200 miles a day was no fun.

It was a whole new life in a way. Elaine came down and started looking for a house and she had her eyes and her experience was within the perimeter of Atlanta. The perimeter, I-285, makes a big circle with Atlanta being the bulls eye in the middle, the city of Atlanta just about where we were. Our office was located at Peachtree Rd and 25th street (1720 Peachtree Rd). Which is right there where I-75 and I-85 come together or part depending on which way you are going. If you are going north they part, if you are going south they join to form what they call the "connector". From our office you can see both of them. Elaine started looking within the perimeter and we soon found out that area had grown too much and we could not afford that so we bounced out a little bit. Finally decided one or two places were just a bit too far out but found a house fairly close to the interstate and all in the town of Lilburn, which is where we live now. We have lived our whole time here (in Lilburn). We have had two different houses but within a mile of each other. Interesting enough there were about 6 or 7 other forest service people that lived out this way and we had a humongous car pool. There was myself, and Dave Jay, Winston Smith, Dave Jolly, Monty Seehorn, John Farley, and Gil Massey. And do you know, there was only once or twice during that whole time everybody was in town and doing down to the office. Of course, when you work in the regional office you do a fair amount of traveling. I would estimate that I was away from Atlanta about a third of the time working out in the field. Sometimes it was more frequent, sometimes less frequent. Never-the-less you're on the move a lot. Yea, that car pool was interesting. We would have a lot of stuff going on and we worked in a lot of different departments and shared a lot of information back and forth.

Later on Elaine went to work for the IRS which was only about half way down town. It was out on I-85 North. So she didn't have quite so far to go but it was still pretty hectic.

Like I said, Bill Tuttle was the head of silviculture and Dick Fitzgerald replaced him, later on Bobby Kitchens replaced Dick Fitzgerald. Jim Sabin, at that time, was the Director of Timber and in Silviculture was Olen Aycock, Walt Fox, Lois Willis, and Georgia Mitchell. Later on in the

winter of 1975 Ralph Lewis was hired. That was one of the first things I had to do when I got to Atlanta. Bill Tuttle walked in with a great big pile of paper and said, "We have a Zone Geneticist job approved. He is going to be working for you and here are the people that have applied. Pick one of them." Well, as it was, they were all coming out of school. Some them had a PhD, some of them didn't. Nobody in the forest service had applied so I didn't know them personally. They had all been to school. Bill Tuttle said, "Now remember, you are the regional geneticist because you have been around and you know how things run and you are going to have to do a lot of training with anyone you pick no matter what their education is." I said, "OK, we can do that." I picked Ralph Lewis and he came to work in December of 1975. By the way, Bob Karrfalt took my place at the seed lab and has been there ever since.

I got into the swing of things pretty quick. One of the jobs, of course, if you are the head of anything, programs in the forest service, I guess and everywhere else too, you find out there are a lot of meetings to go to and at that time we were a member of the Southern Forest Tree Improvement Committee (SFTIC) which was a loose organization of companies, forest service, states and other people in forestry in the south. It was all set-up and running. They had symposiums every two years. That was really their main function but also, later on we covered and talked about problems that would come up. The forest service was big participant in this. The research foresters, entomologists, in our program also participated. I hadn't been there very long before I was elected vice-chairman of it, that was in 1977. Ron Dinus was the chairman. As it goes, the vice chairman usually takes over and just follows the chairman in that role. You are elected for two years in each job. Well, Ron served one year and then he changed jobs and all of a sudden Ron called and said, "Jim, you have got to take over because I'm going somewhere and I won't be available to serve the final year." I thought, "Oh boy, what now." Really, I was kind of new to the whole job but it worked out very nicely. In fact, as it turned out, I served that year, one of his years and then, of course went on to be chairman. I served 1978 as chairman, I didn't have a vice-chairman and then 1979 & 1980 as chairman. And apparently, in looking back, I'm the only one to have done that, served three years. Most people do their two years and that's that. Noone else has left in the middle of their term. We had a conference in Starkville, MS and then another one in College Station, TX. The universities do most of the work but the chairman has to make sure everything is

in place and get the proceedings published and listen to the grumbling of those that had a problem.

Our tree improvement program was pretty big and it did end up with me doing a lot of traveling. We had seed orchards all over, we had, of course, the Francis Marion Seed Orchard in Moncks Corner, SC which is where I had worked before. We started a sand pine (*Pinus clausa*) seed orchard down in Ocala, FL and I'll talk about that in a few minutes. We had what we called our mountain seed orchard in Murphy, NC where the mountain species grew, mostly white pine (*P. strobus*), Virginia pine (*P. virginiana*) and stuff like that. Then we had one down in Brooklyn, MS where Ashe Nursery was. It was close to Ashe Nursery. It was not adjacent to it but they worked out of the nursery for many years. And had one out in Pollock, LA. We had Jim Gates, who was also a zone geneticist out there. (His official station was Alexandria, LA) He also covered the one on the Ozark and the Ouachita in Mt. Ida, Arkansas. Just to get around took a lot of time and I tried to visit those places at least once a year and sometimes more often depending on what was going on. Then later on and I'll talk about it a little later, we started another one that was strictly Northern Red Oak (*Quercus rubra*) on the Watauga RD in TN. That is another interesting story and I'll tell that later.

Our big push at the seed orchards at that time was doing the controlled crosses from the plan. We had a big plan, it was all in a forest service handbook and it said that this tree will be bred with that one, this one will be father and this one will be the mother. It was set-up and arranged in breeding blocks. When we would get a breeding block completed (seed from all the controlled crosses) then we would take that seed and grow the seedlings and plant them in the field in progeny tests. From the progeny tests decisions could be made on which trees to carry forward in the program and keep in the seed orchards. This was a pretty big job. (Note-it was, in reality, a huge job and had to be taken one little seed at a time. It was a remarkable undertaking but everyone on the team did a marvelous job and no major problems occurred)

There was always something going on and it was quite demanding because most of the work had to be done at a certain time of the year and it also involved some new equipment. We had to get up in the tops of these trees safely. You really couldn't climb them to do the job because conelets and the flowers were out on the tips of the branches. So, we were buying bucket trucks,

the same ones power companies use. They were quite expensive and this opened up the idea that those things would go in the WCF fund (Working Capital Fund) which was what most vehicles were in. The thing about it was, we didn't drive them three miles, or one mile or two miles a day. You would drive it to a tree, park it and it would run most of the day. The power was used to go up and down in the bucket. Then you would move a hundred feet and go up and down and things like that. Within that WCF fund the cost of it was extravagant very extravagant (Note-because it was placed on the miles driven which was very little in the seed orchards) I went to our Timber Director and our Regional Silviculturist and I said "Now look, this is not the way to go we don't want to put those things in this WCF because we'll be soaked when we use them. We don't want them too expensive to use because we need them badly to get the work done in a timely manner. We must be able to afford them to do and to keep them safe. To do that we need to keep control of these things. We don't want somebody sitting in an office telling us what we can or cannot do with these trucks because people are up there hanging in the sky, so to speak, and we want to keep them safe and reasonable. If we can't afford them we shouldn't have them in the first place. But we have to have them because of the work." Then for years, it was interesting but other regional geneticists would want to know how we did it because they were having the same problem. I told them they had to get their people behind them and just tell the fiscal people you were not going to put the bucket truck trucks in WCF. You can do it and we did. We kept those things in good working order and, of course, they would last for many years. We only had a problem with one or two of them. The one in Mississippi got a hair line fracture in the lift arm and we got the inspector up from the company that built them and he said it was alright to use. But the people that were using it were always afraid of that thing and we finally just got rid of it and bought another lift arm, which was pretty expensive but they had to have confidence in the equipment to use and they didn't have it the original bucket truck. I don't think it over broke or even got larger (the fracture). The safety inspector knew what he was talking about but some people are funny and they just want to their way, like some union workers I guess. We worked around it and got another truck there.

The breeding program was the big thing then. All the different seed orchards were doing it except the sand pine seed orchard. But loblolly (*P. taeda*) and slash (*P. elliottii*) and longleaf (*P. palustris*), Virginia pine, white pine, all those. Were crossing clones, doing it and coming up with

seed. Then, of course, you had to store that seed (until the crossing group was complete), keep it all straight. If you lost a label, then that seed went out because we had to have 100% confidence in what we had and what went into progeny tests because a lot depended upon it in the future.

OK, I said I was going to talk a little bit about the Ocala sand pine seed orchard. It was actually a seedling seed orchard (as opposed to a clonal seed orchard where the trees are grafted ramets). They had originally selected superior trees like we had done with the other pine species. But the Ocala sand pine is a little bit different. The cones are what we call serotinous which means it's a fire species. The cones stay on the tree until they are opened by the heat of fire. They don't open on the tree until fire comes through and forces them open. Then, the seed fall out and the area is regenerated. And that's the way it has happened for eons. Well we couldn't do that. The forest had been clearcutting areas and knocking the cones, just leaving the cones there to open on the ground. Usually when they got down on the ground they got hot enough to open. However, they wanted a better way and wanted some better looking trees because sand pine is so variable, it leans, it twists, it turns and grows in dense stands. We decided we would put in a seedling seed orchard and we did this by going out and finding a 131 what we called select trees. They were scattered all over the forest and we just cut the tree down and collected the seed. A select tree had to have a lot of cones, hopefully with good seed. We sent the seed out to Mariana, FL where the Southern Station had a small research project that did some sand pine research. They also had a small nursery there and we contracted with them to grow seedlings for one year from those 131 trees. Then, down on the Ocala (NF) at Ocala, FL near Silver Springs they selected an area on the forest, got it cut, cleared, got the stumps removed and got it all worked up real nice. We took those 131 trees, it ended up being about 30,000 seedlings and making small blocks of them and planting them about 2 feet apart. All 131 trees were in each block. (Actually, some blocks lacked the full complement of 131 trees) A seedling from each tree together with the other 130 trees. There were just a whole bunch of blocks out there. I don't remember how many but there were several hundred. One of the ladies down there, Ida Mae Sieg, laid all of them out on the ground. Each block had a different colored flag (wire flag). The ranger came out there to see what was going on and just fell out, he said it looked like a field of poppies. That was a pretty big job. In the winter of, January actually, 1978 we got up a huge project, ask the people from the other seed orchards if they would come down

there and help supervise and help plant and put that seedling seed orchard together. We wanted to do it in two weeks. It turned out to be almost three. It was in January after New Years. We took off only one, actually half the day when the Super Bowl was played. We worked 12 hour days, 7 days a week. I requested and got permission to work overtime (something unusual in the forest service). We asked the other seed orchard people to come and work for one week but most decided to stay longer. (I guess it was so much fun.) We worked it out, some people from the Ocala that did the actual planting with one supervisor standing over about two or three planters, it had to be done right the first time. We got one chance at it and it had to be right that time. Each seedling from the 131 trees were planted in each block, they were all tagged and then mapped. We had two of the seed orchard ladies down there doing nothing else. Their job was to make maps of the blocks. Each one was different and to check and make sure it was correct. Those ladies, oh dear, it was a big job because they would make one mistake and that would throw the whole thing off. "Check, check and double check I would say whenever I walked by." Each seedling had a tag on it with a number of the parent tree. We got those things planted. Jim Gates from Louisiana, the Kisatchie (NF) went to Mariana and was in charge of getting the seedlings lifted and packed up. Then, we contracted with a small aircraft to take the seedlings, every other day, and bring them from Mariana to the Silver Springs airport. He would just shove those bags of seedlings into the cockpit of that little Piper Cub. The pilot hardly had room to sit and fly but they were not heavy. They were packed in paper bags and could be packed pretty close together for a short while, at least. They would lift all day, then it would take him a couple of hours to fly over there from Mariana. The pilot could cut across the gulf and just fly the long leg of a triangle into Ocala and Silver Springs. We would meet him and get the seedlings and then, the next day they would be planted. About every other day we had a plane flying over there and it worked out very nicely.

We got all that done and later on we would go over there and measure all those trees, survival (which turned out to be very important). It turned out there was big family differences in survival. Which was good. The forest had been, before, clearcutting those areas, letting the seed lay or direct seeding. They wanted to be able to plant some of those things so this was going to give them a place where they could collect seed, grow seedling and plant them back on the forest. That was the only way to handle that. Ocala National Forest with the sand pine is one, if you are a forester, is one of

the most beautiful things there ever is because they make small clearcuts, they scollop the edges. The edges are irregular. You see one year old trees next to 5 year old trees next to 15 year old trees and is just a beautiful sight to show that we can manage those forests in a very meaningful way. (Note-the natural life of sand pine is only about 50 years) That sand pine seedling seed orchard was a big deal, at the time and we really worked hard on it. (Note-The sand pine seedling seed orchard establishment and early results are reported in detail in: A Seven-year-old Ocala Sand Pine Seedling Seed Orchard, Ralph A. Lewis, Timothy LaFarge and James L. McConnell, Proceedings of the 18th Southern Forest Tree Improvement Conference, May 1985, Long Beach, MS, pages 204-207)

About that time too, we got a call from the research station down at Macon, GA. They had a genetics program there. It consisted of John Kraus, Earl Sluder, and Tim LaFarge. Well, the station was cutting back for some reason and I don't know all the politics that went on at that time. Anyway, they wanted to get rid of Tim LaFarge. Either let him go to another unit somewhere or they asked if we could use him in our program. Bill Tuttle came to me, they had called and talked to him. He said, "Can you use Tim LaFarge?" I said, "Yea, we can use him." Tim was one of the brightest people, most intelligent people in the area of forest genetics that you have ever seen. Tim had a very peculiar personality, everybody liked Tim but he was very quiet. You would think he was slow but, really, his mind was ever so keen. His personality was a little bit different. He was the ideal, forgetful professor. Boy, did he get ragged when people found out about him because they liked him. He was a soft target and they would pull tricks on him things like that. Tim would take it all in very good humor. You just had to like Tim and he was a very valuable asset to our program. Tim's problem was he had been in the forest service, I don't know, fifteen years or so but he had been in research and he knew nothing, absolutely nothing about how the national forests worked. That is what I had to do, give Tim a lot of guidance. But once you got him on the way of doing something and later on he designed a very detailed computer program to analyze the progeny test results. It took him, like a year, to do that. It was huge, masterful, and had never been done before on that scale to get some of the answers we wanted. He explained it to me four or five times and I could never quite understand it completely. But Tim came on board and then I had to retrain Tim in lots of things. He was keen on it and did a good job.

Ralph Lewis I mentioned earlier came to Atlanta about the same time I did. Well, Ralph

wanted ever so bad to be the regional geneticist and that wasn't going to happen because Ralph had never been in the forest service. He was bright too but he was very ambitious and a little abrasive. He wanted to go up in the forest service. So he got a part time job in the planning unit doing environmental analysis. He kinda liked that and he was good at it too. Ralph is the one that set up most of the design for the sand pine seedling seed orchard but he was also working on the environmental side over there writing impact statements and stuff like that. Tim filled in and we made Tim the actual zone geneticist and Ralph just hung around doing a lot of different things in the regional office. Like I said he was ambitious, he wanted get himself in position to get a better job than he had. Unfortunately Ralph died of cancer about 4 or 5 years later. He was sick a long time before he died and he just never got a chance to reach his full potential in the forest service which was a tragedy too.

Tim filled in very nicely. One funny story about Tim which at the time was hilarious. Tim was on his way to the Kisatchie to meet with Jim Gates to do something and I don't remember the reason. Tim came into the office that morning and hung around doing something, his plane didn't leave until around noon or sometime. Then he went out to the airport. Now this is the old Atlanta airport, it not the one you have now. I guess there have been as least three different terminal buildings out there. This is the one that had all the round buildings at the end of the concourses out there. So Tim left and went to the airport and I was sitting there and the phone rang. It was Fran, Tim's wife and she said, "Is Tim there?" And I said, "No, he's gone to the airport." Oh dear, Fran was worried that Tim had closed the cat, she couldn't find the cat. They had a beautiful cat. Had Tim closed the cat up in his suitcase? And I said, "Well I don't know what to tell you but I can give you the number that you can call the airport and have Tim paged." She did that and Tim said he didn't know what he could do but the plane was getting ready to leave and he better get on it. About that time Jim Gates called and we were taking about what they were going to do and I told him what had happened. Anyway, when Tim got over there to the Kisatchie Jim said, "Come on we've got to open your suitcase and see if you have a cat in it. By the way, the cat was not in the suitcase. Fran called back later in the day and said the cat came wandering out from under the bed or someplace. Then, everywhere Tim went they asked if he had the cat with him. It didn't take long for that story to cover the region. That was just the way it went with Tim, he was always getting

ragged about something.

We spent a lot of time, Tim and I did and Jim Gates just going out and approving and laying out progeny test sites because at this time, by that time, we were getting seed and seedlings from our controlled crosses which were being grown in the nurseries in different places. They were producing seed and we would have to, we would not let anyone but we professionals in the genetics program put the final approval on a progeny test site. We would have to look at it. Some of them were pretty rough. We would have to make sure they were cleaned up. Some were just not suitable and we would have to tell them to get another one. Some were not big enough with a uniform site or different things like that. Then we would proceed to lay out the different rows with wire flags and it was really a lot of work but later on turned that job over to some of the forest silviculturists after they got the idea of what we were doing and we felt we could trust some of them to, at least, do that. But we would, first, approve the site they were going to use because there on the forest sometimes there is a ranger that wants to cover up something or put something somewhere it doesn't belong for whatever the reason. They had their agenda, they have their job but we were having none of that with the progeny tests. So we kept a pretty close thumb on those progeny test sites. And it's probably a good thing we did because some of them turned out to be very valuable. Later on we could use them to collect seed and things like that. In the early years we had to watch it pretty close and so that kept us on the move, especially at certain times of the year doing all that along with all the other things we had to do. It's a good thing that we got Tim, in a way, and Jim Gates because we just needed people on the ground that could do all of that and do it very well, and everybody could.

About this time, too, we were wanting to do something with hardwoods. Our original program had been conceived for the different pine species. We had that pretty well under control. It was just a matter of dotting some of the "I's" and just doing it in an orderly manner but it was going very well and the people, on the ground, said we were not doing enough with hardwoods. Hardwoods are different from pine, you couldn't graft them the same way. They didn't grow the same way and we didn't understand how to plant hardwoods as well as we did pine trees. But one of the things we did, we tried to tissue culture the hardwoods. Tissue culture was getting to be a big thing (with numerous plants of a kinds). I don't think, however, it played out like they thought. But

the universities were doing a lot of research with it. So, we made a contract with the University of Tennessee. With Dr. Otto Swartz there to tissue culture some northern red oaks (*Quercus rubra*) because that was one of our more valuable species. You know, if you can learn how to do it with that you could go onto some of the other oaks, some white oaks (*Q. alba*) and things like also. He did, he tried for about 4 or 5 years to tissue culture those things and never got very far with it. We would go up there once a year to look at his work and he would talk about being, oh, so close. We were putting 4 or 5 thousand dollars each year to his project just to do that and he was trying. He wasn't just taking our money for nothing. He would have several grow chambers -----(filled with containers of)

End of side A

Start of side B

little buds but nothing really growing (into a seedling). We finally just pulled out and went other directions.

Soon after that I was looking for progeny test sites on the Watauga RD in Tennessee. We were having trouble finding them in the mountains where it is hard to get a good progeny test site. You don't want too much variation in the site which means you want something relatively flat, or uniformly sloped. We were looking on the Watauga District and Duke Barr, the Ranger, was showing us around looking at several places. We were looking for a white pine (*P. strobus*) progeny test site and Duke said, "I know just the place." He took us over to this field and he said, "You know, this was used 8 or 10 years ago by TVA to plant northern red oak but they never did anything. Look out there." What had happened, TVA had come in there and planted, Paul Barnett who worked for TVA had taken a big provenance, or put out a big provenance test in northern red oak. This was one of several planting sites. This one was on an old pasture that the forest service had acquired. It overlooked the lake and was a beautiful piece of property but it took forever to get here because you had come in the back door, so to speak. The field was full of fescue grass (*Festuca pratensis*) and they had planted these northern red oak seedlings out there and then they came back, the seedlings were not doing much, so they fertilized them. But what they did at the same time was, they fertilized the grass. The poor trees didn't have a chance. Now this was before the days of Roundup herbicide(Glyphosate, isopropylamine salt). Those trees were just sitting there struggling

in big clumps of grass. I took one look at it and I said, "Oh, no. we're not going to turn this into a progeny test site for white pine. Let me do some checking." Duke said, "You know, TVA hasn't been back here in years. I think they have given up the program." Again I said, "Let me do some checking. We may want to acquire this and turn it into a seedling seed orchard for northern red oak." Duke didn't even know what I was talking about but anyway, I came back to Atlanta and called the forestry people at TVA and said they really hated to but they had to give up a lot of their tests. Paul Barnett had gone on to do something else. TVA had pretty much closed down the forest research that they were doing and they had done a bunch of different things over the years. I guess in the economy and things, gee, I can't remember what year that was now but it was in the late 1980's, anyway. They had pretty much folded up and said, "You can have it and do what you want with it." We put our heads together. I got Ralph Lewis, Tim LaFarge and Jim Gates and we sat down and we talked about it. What could we do since it had already been planted? Then we went out there and we looked at it. We decided to go into this cautiously. So, we went in and the first thing we did, we checked to see if we could identify the trees. And yes, the tags were still there. They had put good tags on the seedlings and they were still there. So identifying the trees was no problem and they had good maps (of the planting) too. But they only had 65/70 % survival on everything and they were still dying because of the grass competition. We gave the district some money and we told them to go in there and very carefully spray the grass for three feet around those trees with Roundup. And they did. That killed the grass. Then we went back the next year and, oh boy, was there a difference! The trees were looking better already just recovering from the grass competition. With that, we went in and re-tagged and re-mapped and did it all over. Then Tim did an analysis of what was left there. There was plenty left there. And so, we turned it over the years into seedling seed orchard of northern red oak. It is one of the very few in the world (of that species) especially that old. It's doing just grand now. We have gone in and thinned out a lot of the families that were not doing much, never had a chance, and it is producing acorns.

Northern red oak, like pine seed take two years to mature. We got the bug boys in there, Larry Barber, the S&PF entomologist and they did some surveys and found, yea, we were feeding bugs. We did a little bit of spraying, especially on select trees and found out we could control the insects. The population went up and down naturally so we didn't have to control the insects every

year some years they just were not there. If the acorns got past the first year they were in pretty good shape and the insects had less impact. We started collecting acorns and the forest was just tickled to be able to grow northern red oak seedlings and plant them on the forest. Having a place to collect seed, in the first place because that's all there was there northern red oak. All they had to do was mow the grass and you could get the acorns collected real easy. They even kept them separate by family. And that turned out to be a real jewel in our program and is really unique.

Going back to the pine program, I spent a lot of time working with the Equipment Development Center out in Missoula, Montana. And working with Jerry Edwards who was our regional engineer in charge of equipment development. Doing lots of things we had never done before again. We got into using tree shakers to shake the seed or the cones down, whichever the case may be. We tried developing a big vacuum cleaner to that would run over the orchard floor and pick up the seed. It worked pretty good but the trouble was, it was so slow, so expensive and it picked up everything else out there too, bugs, grass, dirt, it just didn't work fast enough. But we spent a couple of years working on the thing because it had some promise (and seemed like a good idea) There are all kinds of stories that can come from that but let it pass. We finally just let it go because it just wasn't going to work well enough (to be practical).

We also got into, and they had a fellow out there—we went out and met with the people from Missoula and laid out our problem to them. It was right up their ally and between Dick Hallman and Eli Milodragovich. The Milodragovich's are a big forest service family out in Montana but Eli was one of the engineers out there and he came up with the concept of a net retrieval system. You would lay down net and this net was readily available. The Georgia Forestry Commission or someone was using small amounts of it to collect some seed. What it is, Georgia is a big producer, or was at that time, of carpets for the floor in your house and this plastic netting was what they would weave the carpets onto. So it was readily available, you could get it made in any width or length or whatever you wanted. Eli came up with the idea that you would lay this stuff down and then roll it up. You have this machine that rolls it up and the seed falls off and there is a conveyor that goes back to where the seed is deposited in a big hopper. When the hopper is full you empty it and put the seed in a drums or something and then you fill it up again. And it worked!! We build one machine, had it shipped down here and we tried it. We bought enough carpet net (made to our

specifications) to do ten acres or something like that (later we had enough net to cover several hundred acres of seed orchard). It was pretty expensive but the stuff would last for many years if you took care of it. We got in the business, we could collect seed in a big way. Some of the seed orchards liked it better than did others. They collected seed by the ton off that net. We had to make a cleaner because you also collected pine needles with it and things like that. (Note there was a good market for good, clean pine needles at that time and that was sold as a forest product) It was real easy to separate the seed from the pine needles, only took two minutes to do it. No big deal there. That thing worked like a charm. And in seed orchards clone ramets were so far apart and we kept it mowed, it was almost like a golf course with trees on it. The net would lay flat and you could staple it together with office staplers. And the staple would come out with a good pull.

I did some figuring one year. We had to send in a report each year for the National Silvicultural Report and tree improvement was a part of that. Records of the things you did and they put in the report region by region. Two things was the different kinds of seed you collected and how much you collected, seed orchard seed and wild collected seed. I took that report one year and I figured that for all the regions, especially from the seed orchards they had seed collected in the wild which is what most of the regions were doing but we, in the mid 1980's but we were collecting almost all of our seed from our seed orchards. There are few species that we did not have seed orchards for or we had some bad years or things like that. We had some tragedies or things like that, hurricanes hitting the seed orchard. Which I may mention later. I figured we were collecting 90% of the, within the forest service our region was collecting 90% of the seed orchard seed. The other regions, all put together, were collecting the other 10%. And then I went and got the budget figures, which are not in the silvicultural report but they were available, I could find that real easy. The money that we spent on our tree improvement program was 11% of the national budget for tree improvement. So, on 11% of the money, we were collecting 90% of the seed. And that just blew our Regional Forester away. He just could not imagine that the difference was that big. He made me go back and check all the figures but I was right. I told him, no, that's right. Yea, we were doing a good job with the money we had and we were doing it for a reasonable price too. It always got my air up when meeting with all those people out there, they would ask for all that money and get it for their tree improvement program and I often wondered what they did with it, because they

were spending money left and right and producing so little with it. It was more like research, in a way than it was an action program. We were doing big things in our program and getting results and getting in into the field and onto the ground. I was real proud of that because it took our whole team to do it.

I need to mention, real quick, that disasters happen to some of the seed orchards. The Francis Marion got hit by hurricane Hugo. In 1989 hurricane Hugo hit Charleston (SC) and the storm almost went over the seed orchard down there. Really, it just about destroyed it. It happened, I think, on either a Thursday or a Friday. Sunday they called me and ask if I could go down there, which I did. I spent about ten days down at the seed orchard just getting things started, it happened in September, I think. There were cones on the ground or cones that could be collected from the tops of trees, which were on the ground. We jumped right in and got some and also got some wild cones too because nobody knew the total impact and what would be needed. We didn't know how badly hurt we were. At the time I made some plans with them to get the seed orchard cleaned up and I had a first hand knowledge of it and by being down there that long. They did get it all cleaned up but it really hurt us.

The longleaf, especially, just blew right over. The loblolly, a lot of them got broke, things like that. Fortunately, in a way, by then they had done such a good job in collecting seed that they had a pretty good amount of seed in storage. So, they could go back and replant a lot of the area that was affected by the hurricane. The Francis Marion is rather unique in that it comes back naturally to pines trees when an area is cut, burned or destroyed. They did not need a lot for the Francis Marion but they also had seed there for the Piedmont forests in South Carolina which they needed very badly later on. Fortunately, we had it in storage. The hurricane did, it just about wiped that seed orchard out. We were on the way to what we called a second generation seed orchard there also (but the trees in the second generation section were so small the wind did not damage them very much), and that is what they have now plus a bunch of hardwoods because based upon what we learned about the northern red oak seedling seed orchard they put in several species there of hardwoods of which they want seed to replant. That is just the way things go. There are disasters that you can't do anything about and that was one of them.

Talking about seed and seedlings, one of the things that I was responsible for was keeping

up with the seed stores for the whole region. And I did that, most of it was stored down at Ashe Nursery in a huge cold storage facility. They would take an inventory and I know how much was down there each year after it was collected, cleaned and processed. The seed was in our WCF program too. In other words, we put it in there and then we put a price on it and then that helps pay the cost of storage and things like that. Then when it was used they would get the necessary seed out and the forest using it would pay the cost. So, it went around like that each year. One of the things that I had to do each year along with Ed Cook who was one of our fiscal people, was set the price of seed. How do you do that? It was a nebulous cost, some of it was. You never knew what some of the forests were spending. And the cost of the seed orchard, do you put the whole cost of the seed orchard in it or what do you do? Ed and I would have to get together and set that price (usually a different price for each species). I had several lengthily conversations with Ed about how much we should price that seed in the WCF fund for the forest to use. I was wanting to keep it on a reasonable level and we did that. It turned out I would look at the cost of seed from what other people we getting, seed dealers and things like that. Although it would not be exactly the same because our seed would always cost a little bit more. That was one of the things we just had to do and hope you were right and then, not worry about it and hoped nobody asked too many questions about how you got there. It was a hard thing to do and keep it reasonable because the fiscal people wanted to set the cost high thinking that would, that was the way to do it but it really wasn't because that just made everything else cost more and they wouldn't use the seed. They would just go and buy seedlings from the state or company nurseries. So we had some pretty good discussions on that. It was just one of the jobs I had to deal with.

Then too, along with that I was responsible for the cone kilns and things like at Ashe Nursery which were build at the end of World War II. I don't really know now when they were built but they were big old huge things. They were build to do thousands and thousands of pounds cones and seed each year. Those old kilns did a good job but they were outdated and so, one of the things I did not too long before I retired was get a new kiln for Ashe where the seed could be processed in smaller batches and it was more mechanical (and economical)than the old kiln. One or two people could do the whole job and use fork lifts to move things around and put the seed in trays and get it cleaned up and ready to go. Cleaning seed, like a lot of agricultural things is fascinating when you

get right down to it. We use all kinds of equipment that we can use to clean the seed get it ready to, get it dewinged, to get it all sacked up and into the storage. We had great big walk in coolers to kept the seed very, very cold. It was a big responsibility because some of that seed had been stored for 20 or 30 years and still in good shape. We had to make sure it stayed that way and that they had good equipment and did a good job with the seed because that is what we used to reforest a lot of the cutover areas or the burned areas or the hurricane hit areas. And it was very important.

I want to talk briefly about two foreign trips I made when I worked in Atlanta. Tree improvement was a big thing all over the world and was getting a whole lot of attention. In March of 1977 I, and Elaine also, went to New Zealand and Australia to a big forest genetics conference in Australia.. Dick Miller who was the national geneticist in the Washington Office got together with a travel company out in San Francisco and put together a package tour for everybody from the US that were going over there because that was a long way. We met in San Francisco and flew together, not a whole plane load but at least 30 or 40 from the US that were going. We flew to New Zealand and then we had a tour of New Zealand both north and south islands. We stayed 3 or 4 days and then went on to Australia to the meeting and then out there and come home later. That was a pretty neat trip.

Then, again, there was a meeting in France and it had to do with the genetics of oak. At that time we were working pretty heavily on our northern red oak seedling seed orchard. I wrote a paper to present at that meeting and got permission to go. This was in September of 1991. So we went to France. Went to Paris and took the train on down to Montargis where the meeting was. (It was actually held on the site of the Arboretum National des Barrs Nogent sur Vernisson). We stayed down there at one of their agricultural experiment stations. Then we went back to Paris and then went over to Holland, Amsterdam took Elaine down to Middelburg (Zeeland) where her ancestors came from. That was a very nice trip too. She went with me that time too, she is not going to get left behind if I can help it if we could make arrangements to do it and we did on all three of my foreign trips. People, usually in the forest service, would want to know how I got so many foreign trips and I would tell them "Well, one time I was sent and other times I ask to go and got approved. You just have to ask. You have to step up and tell them you want to go and why it would benefit both me and the forest service." Both times I had the trips, but of course paid Elaine's way. I had

one to England when I was at the seed lab and the two when I worked in Atlanta, New Zealand and Australia and then France and Holland. That was very nice, gee whiz, we enjoyed that ever so much.

I going to wind up now, I've gone through most of my notes. I have covered every major topic in there. I retired from the forest service on January 3rd, 1993 after 36 years and, of course, included the two years that I spent in the army and believe it or not I had to go back and pay my retirement for those years to get them counted. It wasn't that much, really, but that's just the way it is when you work for the government.

I enjoyed working for the forest service so much. Made numerous friends, I have several awards here on my wall, one of which I should mention. The certificate is not dated but one year I received one from the National Conservation Committee that gave me the award for the Daughters of the American Revolution (DAR). Of course, this had to do with Elaine's chapter of the DAR. They were looking for people to give awards to it came up that Jim may qualify so she got the forms out and I got some recommendations from Dick Miller, who was the national geneticist and also from Dr. Scott Schlarbaum at the University of Tennessee who I worked with on several things including the northern red oak seedling seed orchard on the Watauga RD. That was a nice award.

I will never regret working in the forest service. It is a wonderful outfit. It was hard work. We would, often, work from daylight till dark and I only got paid overtime once or twice the whole time. We just went out and did it and that's the way it ought to be. I loved it!!

End of interview.

(Note-more about the Vacuum Seed Harvester can be found in USDA, FS Development Center, Missoula, MT Report-Machanically Harvesting Seeds in Southern Orchards, Feb. 1976 (No 7624-2206) and Evaluating The Bowie Industries Vac-U-Seed harvester, August 1976 (No. 7724-2201) and the Net Retrieval System-Seed Collection Systems, October 1977 (No 7724-2815)

James L. McConnell - Oral History

Addendum (08-06-07)

I seems I started each tape, except the first of course, with something I had forgotten to mention. I was pleased to finish Tape #4 because I thought most of what I remember had been recorded. However, about two weeks later I woke up one night with a start and realized I really had said very little about one of our valuable staff members in the regions' tree improvement program. I just could not let it go by without trying to set it right. I guess I am more senile than I thought.

Tom Tibbs came into our program sometime in the mid 80's as best I can remember. I had met Tom several years before on a trip to Region 6 where he was working. He wanted very badly to get back to the East as his home was in Virginia. He was a bit younger than the rest of us and was energetic, smart and a valuable asset to the program. He had a lot of experience with seed handling, nurseries, growing seedlings and tree breeding in general. Tom was also knowledgeable about personal computers but learned quickly not to hit the format key. He accidentally wiped out everything he had saved one day and spent a week setting it straight.

As a small side note, the tree improvement section was able to get PCs way before other units in the RO. The FS was set on the DG, Data General, as a computer system but that system was not set up to do a lot of the things we wanted and needed to do.

Unlike Tim and Ralph, Tom came into the program knowing how the forest service worked and how to go about getting the job done without a lot of direction. I did have to spend a little time telling him the particular eccentricities of some of the people and places we had to work with to get things accomplished. Tom was a quick learner and quite willing to jump right in.

When I retired Tom was able to become the regional geneticist and as far as I could tell, did a creditable job. As time went on silviculture activities got harder and harder to practice as the emphasis on timber management faded in the FS.