

Dan Lefever, narrator

Anneliese Abbott, interviewer

February 9, 2023

DL = Dan Lefever

AA = Anneliese Abbott

AA: This is February 9, 2023, and this is Anneliese Abbott doing an oral history interview with

DL: Dan Lefever.

AA: So Dan, thank you so much for taking the time to do this interview today! So why don't we start with you telling us a little about when and where you were born.

DL: Well, I was born in April of 1956 in south central Pennsylvania, York County, about ten miles west of the city of York, in a small rural community by the name of Stoverstown. The mailing address was the little bit larger town of Spring Grove, which was about five miles away.

AA: So can you tell me a little more about your family and your father?

DL: My family consisted of three older siblings and one younger sister. My three older siblings were from my father's first wife, who had passed away from pneumonia, I think in about 1954. I had a brother that was ten years older, one eight years older, and a sister five years older. My father had started homesteading right after World War II. He had gotten to that belief, he was trained as an electrical engineer, first as an electrician in a high school, in a work-study program. Then he put himself through college at Penn State as an electrical engineer, and he went to MIT and got a master's in electrical engineering. And he was working at Westinghouse Labs in Pittsburg after that. He was working on war research and riding on a deferment from the draft at that time. He was working on developing radar, is what he told me. There are other people, including my sister, but I never heard this, that he was also selected to be part of the team from Westinghouse to help to develop the detonator for the atomic bomb in the Manhattan Project. I've never been able to verify that, and it's only been recently that I learned about that.

But he grew up in the Church of the Brethren, which was one of three historic peace churches. That was the Church of the Brethren, Mennonite, and Quakers. And they all had pacifist beliefs. So doing war research was not, he wasn't able to stomach it as a pacifist. So he quit his work at Westinghouse and became eligible for the draft at that point and ended up, he wouldn't cooperate with the draft board, I guess, and ended up going before a judge who sentenced him to a camp in Colorado for incorrigibles. And he said he wasn't going there. Now at that time, there was already an alternative service program set up for the three historic peace church members, and so you could potentially get civilian public service and Civilian Conservation Corps work, work in hospitals, things like that. But because of going before this judge, he wasn't eligible for this.

And the judge had no other recourse but to sentence him to a federal penitentiary where other conscientious objectors were going that came about it by moral and ethical beliefs but

didn't have the religious conviction to get alternative service. And they wouldn't cooperate with the military, so they ended up going in the federal penitentiaries. There were three of those in the United States. One in Lewisberry, Pennsylvania; one in Danielson, Connecticut; and the third one was Ashland, Kentucky. That was a penitentiary that was built for moonshiners, basically, but that was where my father got sentenced. There were approximately one hundred conscientious objectors in there and about a thousand Jehovah's Witnesses. My father said he got put in with the Jehovah's Witnesses when he first arrived, and he was in there for a week or two weeks. And he says they were so arrogant it was intolerable, but once he got in with the other conscientious objectors there, it was much better. They had big philosophical discussions. And that changed his whole outlook. In fact, he says, he was in there, in the federal penitentiary, for nine months, and he said it was the best nine months of his life. It really changed his outlook.

Part of the time that they were in there, somebody had—and it probably was Robert Swan, another inmate, that had learned about this Small Communities correspondence course from Arthur Morgan in Yellow Springs, Ohio. And they took this correspondence course, and there was a lot about developing small decentralized communities and probably cottage industry and other things like that. So that got my father thinking about trying to do something different than just being caught in the rat race, so to speak. And he decided to get a piece of property and try to homestead, be more self-sufficient. He actually bought a piece of property outside of the city of York where he was raised. That was while he was on parole. He had gotten paroled from the penitentiary to a municipal hospital in Washington, DC. So he was able to travel home to his parents' place, and they had moved out of the city also, nearby where he ended up buying a piece of property.

And then he started, once he got finished with his parole, he started with that property. There were no improvements on it, the farmer was older and was ready to sell it. The buildings were in the little town of Stoverstown, just nearby, but it wasn't on the exact property. And so he started with that and built everything from scratch there. He had gotten married just, I think, a day before he left or was taken to the federal penitentiary. His first wife, he met her, she was active with antiwar activities and civil rights and that sort of thing. And there was a group, it may have been the War Resisters League, had a local gathering there, or it could have been the Fellowship of Reconciliation, both of which were pacifist organizations that had a nationwide presence but would have local groups gathering. And that was where he met her.

They had three children. The first one, my oldest brother, was born in 1946. And she passed away from pneumonia, as I said before, about 1954 when my older sister was only two years old. In the meantime, he had started to farm this property and was growing wheat. And that, from what I understood, and maybe other grains. He had some animals. I know at one point they had a cow or two. And he actually was separating cream and selling that. I remember seeing old handwritten sign that he had made that was probably put out along the road. It said, "Cream – 40 cents," I think it was probably for a quart.

But after his first wife died, at that point he was pretty much thrown for a loop with three kids to take care of. The younger sister went and lived with my father's older brother and wife in Long Island, New York for a while. And then he met and married my mother, and that was in 1955. But meanwhile, he had started growing and farming using organic methods. How and where he first learned about that, I'm not exactly sure. I never asked him, and he never really volunteered about it. But I thought maybe it was from the Arthur Morgan Small Communities correspondence course, that it might have been in there. And I checked into that just recently, that correspondence course, the content is still available. But did not seem to see much of any

evidence in there. I did go through ten years of the *Small Community* newsletter, which was a bimonthly thing, at the Small Community organization archives, it's still near Yellow Springs, Ohio. There was agricultural information in there, but not anything about organics. The only close reference I found—and that was like in 1952—was a biodynamic work somebody was doing a report on from Minnesota. So he didn't pick it up there.

But this Small Communities group of interested people put out a list of many of these people that were willing to accept business from like-minded people in the group, and there was a list of maybe 100 people all over the United States. And I've looked on that list. My father was listed there with his first wife, and his first son was on the list. But his second son had not been born yet. But there was another person on the list. His name was Paul Keene. And this person I knew from later organizational meetings for natural farming. And he somehow had gotten connected with the Small Communities thing. So I think he may have connected with that person because he was from Pennsylvania, and then started corresponding, and that person, Paul Keene, was doing farming and started a farm called Walnut Acres. And he was the one that ended up buying wheat from my father's farming operation, and other grains. So that may have been where he got the organic gardening idea, which was just in its infancy at that time. (17:26)

AA: So what was your father's connection with Ralph Borsodi and the School of Living?

DL: Well, he got very connected with that. And that may have been where some of the organic gardening and farming information came from as well. I think some of that connection could have been in the Small Communities course, possibly, because there was activity in Dayton, Ohio with homesteading, and Ralph Borsodi had this idea of self-sufficiency and decentralism, and left New York City and started homesteading in the early twenties. He got connected with the homesteading thing that was going on as a way to get out of depression. And there was a big connection with that in the Dayton, Ohio area. And he went and worked with that, and that's very near Yellow Springs, so it's very likely that Arthur Morgan knew about that and maybe connected with Borsodi there, and then publicized some of that stuff in his Small Communities course.

But in any case, my father picked up on it very soon. Also, Paul Keene of Walnut Acres had gone to Borsodi's homestead in New York and actually, I think, worked with him there for a while. He had come back from, Paul Keene had come back from India and his wife was the daughter of missionaries in India. He had worked with Gandhi, and he came back from India and got connected with Borsodi's homesteading stuff and worked with him for a while. If it wasn't from the Small Communities, then it was probably from Paul Keene that my father probably first learned about Ralph Borsodi and the School of Living. And then by the middle fifties he was probably connected with Mildred Loomis, who was from the Dayton, Ohio area also and worked with this whole homesteading, it was like an urban homesteading program that the city of Dayton had instituted. And there was a lot of interaction with the federal government and Roosevelt, and the history of that is pretty well documented. And they had to decide whether they were going to keep operating the program as a private thing or accept federal money. And Borsodi was working with them at the time, and then they decided to accept federal money, and Borsodi thought that was a mistake, so he left that work and went back to his homestead in New York.

But meanwhile, Mildred Loomis was involved with that and became a protégé of Borsodi's and then did a lot of work with homesteading, decentralism, cottage industries, self-sufficiency. Started doing some publications. And my father subscribed to those and got

involved with the School of Living and was able to connect with gatherings that they would have. And eventually they became what were known as “Homestead Festivals.” Usually they would gather for one week in August, and just likeminded people, they would have lots of discussions about various things. Some topics that Borsodi would have presented, and other things about gardening and farming, organics, self-sufficiency for food production, and that sort of thing. And he maintained connection with School of Living for the rest of his life and was very active in it. We would have homesteading festivals at the property where I grew up, my father’s property, named Sonnewald, which is a Pennsylvania Dutch coined word for “Sunny Woods.” People would come in there for a week. So that was his connection with School of Living and Borsodi. And he continued to study that and promote those ideas and educate people on that for the rest of his life. (24:10)

AA: So what were those homesteading conferences like? Can you describe those in a little more detail?

DL: Well, they weren’t so much conferences. They were glorified camping sessions. People would basically come to gather together, and a lot of the people would camp out. I remember going to those as a youngster. And they were probably—I don’t know, maybe there were other earlier meetings, but by the time I was recalling things about that, it was in the early sixties. But a group of people would gather together, maybe twenty or so, some of the times there might have been more than that. Everybody would bring some stuff along to be able to do at meals. It was usually based at somebody’s farm. I remember one time we met at a Quaker meeting house, but that was in the north of Philadelphia area. There were two people that were brothers that were very interested, Quaker, so we met there. People would come to our homestead and camp out there, and then we had meetings during the day and evenings, discussing things. Sometimes, I guess, there were work activities, helping out on the farm or property where we stayed.

I remember one of them, for a couple years they had one that was less of a homestead festival and more of just a School of Living discussion, but it was also, I think, part of that might have been the Peacemakers Organization, and that was held up at a Catholic Worker farm in Tivoli, New York, which was north of New York City along the Hudson River. They’re actually on a bluff way above the Hudson River, but you could see the Hudson River from it. It was an old mansion there that they had taken over. There was a group of Catholic people that were very much interested in all sorts of social justice things and peacemaking activities called Catholic Worker. And they were pretty far out liberal branch, a lot of them worked with labor and communism as a way to solve some of the issues with exploitation of people in labor and that. The woman that was very active with that and wrote in the Catholic worker newsletter, her name was Dorothy Day. And she lived at that property in Tivoli where we went to have meetings.

And then later there were other meetings where the School of Living ended up getting connected with a property that was on the Maryland-Pennsylvania line, just north of Baltimore about fifty miles and twenty miles south of where we lived, near York. And this fellow that was interested in School of Living ideas had bought this rural property, and it had an old grist mill building on that. And he got the School of Living connected with that, and they actually ended up purchasing that and making it headquarters for quite a while. They had at least an annual, sometimes a biennial gathering there. And he would bring in resource people to discuss various issues, but people would come there. We had some lodging available in that mill building eventually, once it was rehabbed, so people stayed there. So that was the headquarters for School

of Living outreach, mostly with Mildred Loomis. Ralph Borsodi would come there sometimes to present, but he never worked or was based there. But that was headquarters from the late sixties to the middle seventies, I would say. And it's still, it's one of a number of School of Living land trusts.

The School of Living got very interested in land tenure, a lot of that came out of Henry George philosophy and the book he wrote, *Progress and Poverty*, which Borsodi latched onto and was part of his teaching and philosophy on how to deal with holding of land. You shouldn't really own land because it isn't something you made, it was here when you came, you just hold it and take care of it and use it while you making use of it, either by living on it. Any buildings or improvements you put on the land, that was your property and you could sell those improvements, but the land, you could only hold it and then pass it on to future generations. But in the meantime, you should pay rent to the community for the value of the land. And any improvements that made it more valuable, like in urban areas you had lots of services that were provided by the community. (32:30)

AA: Now I was reading somewhere that said that Mildred Loomis actually stayed at your family's homestead sometime around 1972. Is that right?

DL: Yes, she was there for a while. She had a mental breakdown and pretty severe depression. Had some issues with that over the years, but never really that severe. But she and her husband John Loomis were homesteading in Brookville, Ohio, near Dayton, and then he, I think, died from complications with a car accident, and then at that point she just couldn't maintain the homestead anymore. And she ended up relocating to Heathcote, the mill headquarters in Maryland, and lived there for quite a while. But I don't recall exactly what happened, but I just know that she had gotten severe depression, and she needed more help, so she came to live at our homestead for, I don't know, maybe a year and a half at a mobile home there. With some medicine—I think it was lithium that she was taking—was able to get back, and also with some help from us, probably not as much input as was needed, really probably needed more professional help, but eventually was able to recover and get back to being really functional and doing lots more writing and organizing gatherings and that sort of thing. But at that point then she moved to another farm on the other side of York, and that became headquarters for about another five years, maybe longer than that. And so that was where she was at for the rest of her life. (35:52)

AA: So can you describe what your family's farm was like when you were a child and young adult?

DL: Well, when I was young, I don't remember much of any real farming going on. My father had started farming, but because he was trained as an electrician, when he was in high school, people found out he could work with his hands and do repairs and do electrical work. So he ended up working at that, and he wasn't really doing much active farming because it wasn't making any money. It was before my time, but my sister said that she remembers a time when the only thing to eat was milk and mulberries. Milk from the cow, and wild mulberries. So I think the farming stuff was not economical, didn't really work for my father, so he ended up doing mechanical repair work. So I don't recall fields of grain or anything by the time I was

born, which was ten years after he started homesteading, and by the time I started to remember anything in 1960, that was almost fifteen years at that point that he had quit farming.

I do remember gardens. We always had a big garden producing most of our own food. There were lots of trees that my father had planted, fruit trees and nut trees. They weren't in basic orchard rows or anything. It was all spread out and more like landscape plantings. I do remember some animals. I do not remember having cows at all; I think that went by the wayside before I was born, maybe after his first wife died he just wasn't able to take care of those, having two children to take care of and trying to work. I do recall having chickens, some early memories were having two big gray geese. And I don't know, it was probably too early for me to remember specifically, but it was probably from stories afterwards, that those geese were killed by weasels. Then I got involved in gardening stuff as early as five years old. I had my first small garden section, where I could plant what I wanted and start growing things that were different than what was in the large garden. I remember the farm was basically a lot of open fields, about thirty acres open and thirty acres wooded. It was a total of sixty acres of property. Those fields would get mowed just to keep them from going back into forest. But they weren't actively being farmed.

And then as I got older, I would help with all the gardening stuff. And then did a lot of food preservation, freezing corn, sweet corn, canning of tomatoes, and freezing fruit, berries and things. We had a really long row of black cap raspberries that my father had planted along one of the field contours that had been laid out. When he got the farm, it had a lot of erosion. It was horse farms, never had any chemicals on it except possibly superphosphate, but no other chemical fertilizers. And he had to try to arrest erosion, ditches and stuff. I don't think it was terribly severe, but there was definitely a lot of problem with that. He had the farm laid out in contours so that you were planting anything across the grade and not up and down the hills, to stop erosion from any cultivated crops that were being grown.

So we had this big row of black raspberries, and I remember as a kid helping to pick that. It was like three hundred feet long. And a lot of fruit trees that my father planted, and a lot of nut trees. He got interested in tree crops from J. Russell Smith's book *Tree Crops*, and bought some nut trees and persimmon trees and planted those early on. But more apples, peaches, and pears. Had a fellow that came in and planted peach trees, but he had a method—his name was Herbert Clarence White, I believe. I think he was the son of the woman who started the Seventh Day Adventist movement. But he had this method of planting trees where he dug a huge hole, like three feet across and three feet deep, put a lot of rock mineral amendments and compost materials in the hole before he planted the tree. And he thought that was the best way to plant trees, but it turned out in the long run that it was not a good way. The trees tended to keep their roots within that huge bowl of nutrients and not move out beyond there, and as a result ended up not being very sturdy. Even though they had lots of nutrients and were healthy, they did not spread their roots out. Much later, work by many other people demonstrated that planting with not really amending the soil and putting trees in the ground the way they would grow naturally from a seed was much better, and then just amending the surface where all the feeder roots were.

But we had lots of fruit trees around. We had, in front of the house on the south side, there was a raised stone wall bed that we would plant the very early crops in because it was a protected microclimate there. As I got older, I got more and more active with the gardening operation. Then, when I was about ten to twelve years old, when my sister graduated from high school, she left. She had helped a lot in the garden operation, and my father would help with that but he was busy with his mechanical work, and my mother would help a lot in the garden. But we kids really did a lot of it. She left home right after graduating from high school, and then the

garden basically became my operation. I took over probably pretty much entirely at about age fifteen, and operated the garden and farming operation from then until age 25. And at that point I had about an acre and a half of vegetables, half an acre of very intensive garden, and then another acre where it was all row crops in 36-inch rows cultivated with a tractor. About half of that was sweet corn, potatoes, and sweet potatoes.

Then I also started growing some small grains again to feed into, some for chicken feed, and also some for the natural food store that got started by my mother. So I was selling a little bit of that directly through that. Again, most of the vegetables we grew in excess of what we were using at that point, it was a lot more than for our own use, so those were getting sold to the natural food store that was on the property, and people would come there to buy. (48:44)

AA: So is there anything you want to say about your farming methods and how you learned those?

DL: Basically, we had learned to do it organically by reading. My father subscribed to J. I. Rodale's *Organic Farming and Gardening* magazine, and I think the earliest issues he had, which I have now, a pretty large collection from about 1943 through about 1990. And we were regular subscribers to that. And also we got another monthly magazine from the Natural Food and Farming Association, and that probably had some farming information in it. It was probably more geared towards natural foods and the connection with quality foods with soil and health. I don't recall quite as much specific farming information in that, but there probably was some, maybe more early on than later. But we got lots of information from that, and also we had meetings that my parents would organize, the Natural Food Associates annual conventions. That started in '54 with Paul Keene and continued for nearly fifty years. And it eventually became Pennsylvania Natural Living conference, which was more geared toward consumers and less toward production farming techniques. But early on there were a lot of people who would come in and talk about organic farming methods, and other farmers who would do it would talk about it and share their experiences.

My father was a follower of William Albrecht and all his soils research from the University of Missouri. He had prolific writings that he put out that are available. My father followed largely what he said as far as soil testing and balancing of the minerals in the soil and the major minerals in the right proportions, and the micronutrients. That helped to make the plants healthier, along with having as much organic matter as possible in the soil, and biology in the soil working with the minerals to make them available. I remember doing composting from as soon as I was old enough to recall anything. We would get many loads, probably like twenty large dump truck loads of leaves from the borough of West York, and they would bring them to our farm and just dump them there. And we would let them break down. Probably weren't really doing high-grade active composting, but they decayed on their own, and then they were used as mulch around the fruit trees and also in the gardens as a more decayed compost or leaf mould, decayed leaves. There was not much addition of manures that I recall early on. We did have some chicken manure from a small flock of chickens, but that would have been the only addition to that. Later we had neighbors that had horses, and we would go get some manure from that and compost it directly or add it with the leaves. It was bedded with sawdust, pretty high cellulose that would sort of compost on its own.

We did begin later doing more elaborate layered compost, and we cut and gathered hay from the fields and brought that in to do composting. We also added a lot of mineral

supplements, rock minerals and organic fertilizers. My father started distributing and selling rock phosphate all over the northeast United States. He would get a railcar of this material from Florida and warehouse it at a local defunct barrel factory on a local railroad siding a few miles away from our farm. I don't know, probably would be forty to fifty tons of rock phosphate on a railcar. I think he would buy one of those. I don't know if it was as much as one every year. It might have been as much as that at one point. And then he had a large truck that could carry possibly as much as ten tons, but probably more like five tons. And he sold this to farmers in Pennsylvania, New York, New Jersey, and possibly up into New England, the closer areas of New England. I don't think he went as far up as New Hampshire, Vermont, and Maine. And maybe some in Maryland, for sure. I don't know if he got out into Ohio at all or into Virginia, but possibly.

He also then started distributing other rock minerals that he got. He would get greensand from New Jersey. That was a potassium and micronutrient and soil conditioning material, an ocean deposit called marl. A lot of deposits of that in New Jersey. That was another material we would get. Granite dust came in from Georgia. We had kelp meal fairly early on, from the middle of the sixties we had dried kelp and used that for micronutrients. Also started soaking that in water and using that to spray on the fruit trees. And that was before solubilized liquified kelp became available. In the later sixties that became available, imported from England, but the original material was Maxicrop, was the trade name, and we used that for many years. But before that was available, we just soaked the kelp in the water and drained that off and would spray that on the fruit trees. And also put the rock minerals on the fruit trees.

For some reason that I don't really understand why, my father had I think a misunderstanding of Albrecht's methods on the use of calcium and how important that was. And he ended up never liming the soils at Sonnewald Homestead. And I do not comprehend where that thought came from, because Albrecht was very, very much a proponent of getting lots of calcium, one of the most important elements available, and one that was very often missing in the eastern United States because of rains washing it out. It's soluble and it will wash down through the soil strata, so it needed to be replaced. But part of that was, many people would only do what they called "liming slow," putting calcium on in the form of limestone, which was the raw material, not the misnomer of "lime," which is heated and burnt calcium carbonate, where the carbon is burnt off and it's just calcium oxide, and then when you put that on, it combines with water to make calcium hydroxide, which is extremely caustic and basic. But my father felt that just putting calcium on to adjust pH was not the way to be doing it, but Albrecht was saying you needed to put calcium on to build the calcium layers, not just to alter pH, and then balance it against the magnesium and potassium. So for some reason he wasn't putting calcium on. I don't know, we probably were getting a lot of calcium available, because the leaves we got from the city, largely maple leaves, were a good source of calcium. And also, rock phosphate has a fair amount of calcium in it. I don't know the exact percentage, but we were getting a lot of calcium from that. (1:02:21)

We also started distributing and utilizing a mixed compost-based fertilizer. It had a little bit of, I guess it was potassium sulfate in there that probably was a mined material. And also, it had, it was a municipal compost base from Altoona, Pennsylvania. That was largely food waste; I don't know what else they added into it. They might have had other manures and stuff they added with it to compost, and then they would add a few more mineral nutrients, potassium. I think the phosphorus levels in it were okay; I don't think they added anything for that. They did add some nitrogen in the form of urea. Urea is a synthetic nitrogen form; it was very slow

analysis, but it was a chemical material. And the name of that was called Webb's SuperGrow. And we sold a lot of that and had good luck; people had used that in gardens and stuff. But we moved away from that because of the urea in there and that being a chemical, and went to another compost-based material called Earth Right, and that came from Chester County, which was towards Philadelphia, two counties to the east of where we lived. They also started distributing a lot of rock minerals, so we didn't have to go directly to get those and were able to get a larger selection of materials. But they made compost based mostly on horse manures, and then they would add rock minerals in that and compost it, and that was completely organic. So we started distributing and selling that in place of the SuperGrow.

So we used all those raw materials. There were some other rock minerals that came in that we tried from time to time, but not ones that I recall that we kept up with. So that was what we used to improve the soil conditioning. We did not do a lot of cover cropping, but later on I started incorporating that a little bit more to try to do some rye cover crop. Also, pretty early—I'd say about 1968, I started trying to do some living covers. I used rye grass undersowed in sweet corn after the last cultivation. I started out very early experimenting with that living mulch and living covers.

We mulched things in the garden a lot. Sometimes we would do hay mulch or grass clippings mulch and leaf mould mulch, partially decayed leaves, we would use that. And the more decayed ones, of course, would get spread and tilled in, and compost would get tilled in in the spring before planting. We did do an awful lot of tillage, which now I know was detrimental. Very early on we bought a Howard Rotavator tiller. That was English, one of the first large tractor-based tillers. My father did avoid moldboard plowing. I guess he had read *Plowman's Folly*. They had moldboard plows, but basically we didn't use it. We had a tiller or a chisel plow, which we used for heavy tillage to break up the ground. It was actually called an orchard tiller. It was a Ferguson implement. We used that, and then a disc and harrow. And then when we got the Howard Rotovator tiller, we would use that almost exclusively for seedbed preparation, but ended up overtilling and destroying soil structure. We would get an awful lot of problems with crusting. We did get, even on relatively flat ground, a fair amount of erosion during heavy thunderstorms and heavy rains. Did not realize until later how much we were destroying the soil structure, but did start and begin using also a single-shank subsoiler to break up some compaction that we were getting from the rotary tiller at the four to six-inch deep level below where it would till. Started doing that to loosen stuff up more a little bit deeper than what the chisel plow depth would go. That would go ten, possibly twelve inches.

We had a Ferguson-30 tractor that my father bought. It wasn't the first tractor he had, but it was one he bought new, a 1952 model. And I'm fairly sure he bought that from having read Malabar Farm stuff. You know the name, you did the history of Malabar Farm, I can't think of the fellow's name right now.

AA: Louis Bromfield.

DL: Yeah, Louis Bromfield. He wrote about, I think Massey-Ferguson went to him to promote their tractor, and he was writing about that in his books, and I think my father must have read that, though I did not see copies of that around home at all. But my father probably read it, and that's where he got the idea and bought a Ferguson tractor.

We also used a small walk-behind tiller called Merry Tiller. It was one of the early tillers. We would use that for soil preparation and also used it between the rows for cultivation in the

garden. It was about 24 inches wide, and basically everything was done in rows that were about 30 inches wide in the garden. So that was used, both for seedbed preparation sometimes and then for follow-up with cultivating between the rows for weed control. And we also used push cultivators, Planet Junior and other push cultivators. We started on some crops getting rows closer together, not really doing permanent beds, but on smaller crops that didn't need as much space, I would use push cultivators to go down between the rows on that, and you could do as little as a six-inch width between rows and use those push cultivators. (1:13:34)

AA: So is there anything you want to say about the solar house that your father built?

DL: Yeah, I was born there. I was born at home. And that house was constructed in 1954, two years before I was born. It was probably the first non-research house with an active solar system built in the United States. Not positive of that, but we pretty much think that was the case. It was a design that he copied. Originally, when he moved and settled and started building a structure to live in, he made what was sort of half of a Quonset hut. The Quonset hut was half a cylinder that sat on the ground. It was designed originally in Quonset, Rhode Island as quick, temporary housing for military installations. And my father got some wooden rafters that were made for that in this half-circle arch, but he cut those in half, so it ended up basically making half of a Quonset hut or a quarter of a cylinder, where the arch went from the ground up into the air, and then dropped down vertically from the height in the air to the ground, and that was the front of this original house that he built. And he put glass windows all on that vertical side and oriented it to the south, so the sun could come in there.

And in the wintertime the sun, because of the way the earth is tilted on its axis, its orientation to the sun changes throughout the year, and in the wintertime the sunlight is coming in closer to horizontal because the sun is low in the sky, so it would come directly into those windows and warm it up very much in the wintertime. And he found out that with snow on the ground reflecting sunlight off of the snow into the windows and coming directly in from the sun in January, sometimes he would have to open the doors at 10:00 because it got too warm in there. But his main source of heat in there was actually a wood stove, it was an early, better-quality woodstove that had thermostatic damper control on it. And that was his backup heating when he didn't have sun, which was you were basically only getting heat on some days when you had sunlight.

So he knew what the sun could do, but he was getting set up to burn wood exclusively, and had gone to New Hampshire, found a fellow up in Keene, New Hampshire, who had a whole furnace set up where he could drop wood into the furnace and feed it in on its own on an inclined chute, and it would just drop down on its own and automatically feed this furnace. So he was getting ready to do something like that, when an article came out. I think it was a front page article in *Popular Mechanics*, titled, "A Furnace in Your Attic." And it was a description of three different types of solar heat houses. One of them was out West, there was another one—I think it was at MIT—and then there was another private research house that was designed by a professor from MIT but was entirely different than the other ones. The other two houses had collectors that heated water and stored it in a large tank.

This third design was designed by a metallurgist, and she was heating air and then was attempting to store it in a chemical salt that would change phase, which would basically freeze and thaw, and you would store much more heat that way through the heat of crystallization. It takes a lot more energy to melt a material, and then it releases a lot of energy when it refreezes

again. The same thing happens with water going into ice. It releases heat, and then it takes a lot of energy going in to melt the ice into water again. But using that material wasn't appropriate unless you wanted to live at 32 degrees, the melting point. So she came up with this material, basically it went in and out of solution, crystallized in and out of solution. It was a material called Glauber's salts, or sodium thiosulfate. It's a material that photographers use for developing photographs. And that was the way that she had figured out to store the heat from the daytime to nighttime and cloudy days.

The design that she had was very similar to the simple Quonset design that my father had in that it was a shed-type roof supporting a collector that was built above the living space on the south wall. It was a one-story living space. It would have been like a ranch-style house, but instead of a roof that was peaked in the middle, it was just a shed roof, and on top of the south wall of that one-story living space was a solar collector another eight feet high, and then the roof from that down to the north side of the house as a shed roof. And that whole area up there, the length of the house was 65 feet, and then it had 8-foot high, and that was a collector made with panes of glass. It was a glass called Industrex that was used in industrial buildings. You can still see it in some old, large factories where they would have, you would see multiple rows of peaks on a flat roof, and these peaks would have glass on one side to let light in to light the factory work area below. So they were panes that were four by eight feet. A local glass company came out and installed those.

There was a double layer of panes, so it was insulated, and then behind those panes there was sheet metal, just an ordinary steel sheet that was painted flat black. That was spaced out behind the inner glass. The sun would hit that and heat it up. Then behind that there was another about two-inch space, and that was an area where air was circulated behind there and would wipe the heat off of the sheet that got hot from the sun and blow it down into the house. That was divided into three different sections. The whole solar collector was divided into three different sections, which would then run down into the house with three different fans, and they went into an area between the rooms, which was basically to be the storage area for the heat in this material that would freeze and thaw. And that was to be put into five-gallon cans, and the air would blow across and around that and melt the material and store the heat, and then at night it would refreeze and release the heat into the rooms that were on either side of these storage bins. And that material would freeze and thaw at around 90 degrees, so that was warmer than room temperature of 70 degrees and would radiate heat out into the rooms.

That material never actually got installed. It was a real difficulty and major expense to get what amounted to nearly a railcar of the material and get it canned in five-gallon cans and put it in there. So we just had heat coming, we built the storage bins into the house but never instituted the actual storage. So we just would circulate air and blow it directly into the house. When the sun shone we would get heat. The thermal capacity of the house would hold some of the heat. It was a slab house, built on a concrete floor with no cellar, so that soaked up some of the heat, and also it was a fully plastered wall house, so that was a lot more masonry material that was a thermal mass that would store some of the heat, the excess heat from the day to the nighttime. And then we just used a wood fire as a backup. Initially it was just a Heatalator fireplace, and that was a type of prefab fireplace that had tubes that went through the top of the firebox. The air would circulate through those, mostly by gravity, and get more heat out into the air, put more heat out of the chimney area than just direct radiation from the fire. Eventually, from having used that, the metal burned out, and at that point we put a wood stove in front of the fireplace, and that was much more efficient. We just heated the main parts of the house. We also later added a small

LP gas furnace for quick heat-up in the morning, instead of keeping the wood fire or fireplace going day and night.

We also had passive solar heat. And that was just large windows in the living area on the south side. They were the best quality aluminum-framed windows at the time it was built, and they had storm windows on them, but it wasn't anywhere as efficient as the double-pane evacuated windows of these days. The house was insulated with a new at the time insulation, multiple layers of reflective aluminum on paper. And that went into the stud space in the walls. It was good for reflecting infrared, but it was not really a great insulation material. The actual house itself, the exterior walls were cinder block construction. That was built to make it more fireproof and also to be able to support the heavy weight of the glass of the solar collectors. The solar collectors would have been more efficient if they were tilted back so they were perpendicular to the rays of the sun in the winter, but that entailed a lot more heavy construction than having the load of the glass vertically on the front wall, so my father just compromised having less efficiency in the solar collector and just kept it vertical.

Also, the roof extended over in front of the solar collector, which would shade it in the summertime and keep it from getting hot at that time. And also there was another small roof below the solar collector and just above the windows in the living space on the south side, and that would shade the windows in the summer, because in the summer the sun is almost directly overhead and high in the sky, and so the sunlight is coming down almost vertically, and this little extension in front of the windows would shade the windows and keep the sun from coming in so you didn't get heat gain in the summer. So we didn't need to have air conditioning. We basically had a house that stayed pretty cool in the summer. It did not do anything for the humidity, but it did keep most of the heat out. We did have to use shades to keep the heat out of the east and west windows because the sun would be coming in in the morning when it was low on the horizon on the east, and again late in the afternoon in the west during the summertime. And we also used curtains to keep heat in at nighttime on the big windows on the south side in the main rooms of the house. Some bedrooms were on the south side, living room and kitchen were on the south side. And then we had the utility room, one bedroom, and bathroom on the north side of the house. (1:34:16)

AA: Do you want to say more about your family's natural food business?

DL: Yeah, the natural food business got started, I guess my father started learning about natural foods. Maybe some of that came from School of Living stuff, because it seems Borsodi got started with diet and its relation to health and soils as early as 1920s. But where my father started picking that up, I don't know exactly, but from Natural Food Associates would have been one of the major sources when he got connected with that and attended some of those meetings, one of which was in the early fifties in Chicago, I think. After that he started the local Pennsylvania chapter of that, and we had people come in and talk about it that he was able to locate. I know that he was involved with natural healing fairly early on. Had home childbirth, did breastfeeding of the children. When his first wife got pneumonia, tried to heal it with alternative methods and natural healing, but that was too far advanced I guess, and they weren't able to do that, and then she passed away from the pneumonia. And it was at the time when antibiotics were just starting to become available and weren't really being used all that much, or maybe he would have thought that it was necessary to use that.

When my mother came on the scene, my father bought as a kind of wedding present an electric mill to grind grain, a large electric mill. They were grinding grain for themselves to make whole wheat flour. My mother got introduced to natural foods from a book that my father, soon after meeting her, sent her to read. It was a small English book called *Dear Housewife*. My mother thought he was pretty arrogant to send something like that with that title right after he had just met her almost for the first time. But it was a very good explanation of how flour was so devitalized from the milling process.

It was known as early as the late 1800s when the roller mill, instead of grist mill process, was introduced. Roller mills would roll the wheat or other grains between rollers and flatten them and then roll it in tighter and tighter rolls until it basically pulverized and powdered the wheat. Whereas the old stone grist mills would tear the wheat apart into finer grains. It wasn't really fine, but it still was the entire wheat grain. And then sometimes they would sift it, I guess, and get some of the bigger particles out to refine it. But the roller mills would basically make the grain into three different materials. You would have a flat exterior coat called the bran, and that would stay pretty much intact because of the fiber in it. You would have the germ or life part, which would cause the wheat to sprout and grow again. And that part had a lot of oils in it, particularly what was known as wheat germ oil. It had a lot of vitamin E in that, which was an oil-based vitamin. And then the endosperm or starch portion, the major portion of the wheat kernel. And the oily germ part would make a flake and come out as wheat germ, and that and the bran could be shifted out and leave just the starch of endosperm. And that was basically devoid of any minerals or nutrients, which were all in the bran or germ. So you were getting devitalized food when they were separating out those materials, and just ending up with white flour.

People recognized that this was a problem very early on. People that wrote and talked about this had books about it. One of those people was Harvey Kellogg, of the current Kellogg's cereal company, but he operated a sanitarium for lung disease—it was a lung disease that a lot of people had back in the—

AA: Tuberculosis?

DL: Tuberculosis. Yeah. And he introduced a lot of nutritional things in that sanitarium that he operated, and one of them was whole grains. He promoted that a lot. And there were other people who did a lot of work with him. An English fellow by the name of Graham, and then it was Graham flour, which was whole grain flour, was the name that got picked up, and it's still maintained in the name Graham cookies, which was a whole-grain cracker that he promoted.

So my mother learned about this from this *Dear Housewife* book, about how food was being devitalized, particularly grains. They also were even bleaching it to make it even more white, and that was done with a bromate material, which was a toxic material in the same chemical family as chlorine. And it was something that was also detrimental, on top of being devitalized. So my father was doing whole grain flour, and he got this large electric mill to grind wheat and other grains. And they started grinding for themselves, for other local farmers, and then other people heard about it and started coming to get fresh ground flour. Then they were getting some other grains from other growers, other sources that they could get, like rye, possibly oats, buckwheat, and corn, and grinding some of that also. People asked for more grains, and then dried beans, and eventually dried fruits. And before they knew it, they had a small natural food store operation. That was started in 1955 and continues still. My sister still lives on the

Sonnenwald property and operates a natural food store with her husband and a team of people, called Sonnenwald Natural Foods.

We were able to source materials, some local, but a lot of it came in from other places. There were not a lot of easily sourced natural food materials at that point. We would buy grains and seeds and seeds for sprouting from a seed house in Baltimore. And then we would get dried fruits, some of which were imported from the Middle East. That came in from an importer in New York City, the name of that company was the J. A. Zerull company. Pretty soon we got connected with the pioneer organic date growing people in India, California, and that was in the Cachello Valley, and that was Cavlada Date Company. That was the Andersons. I did actually visit them very much later, when I was about fifteen we traveled to California and saw their date ranch there. We bought a lot of dry dates from them to sell in the store.

By that time, there was also natural foods becoming available. Some processed foods; not too many, but some. Stuff that was less processed and more natural. There was no organic certification of anything at that time. A few things maybe were labeled organic, with farmers that were producing something like apple butter, maybe some canned goods, breads, and that sort of thing, with whole wheat and organically grown wheat, and they would label it organic. But most stuff was not really labeled organic, but there were a few distributors that were starting to make things available, and also they were buying grains and dried beans, seeds, nuts, dried fruits. So that was becoming a little bit easier to get some materials and some processed foods like pickles, macaroni, spaghetti, cereals, puffed grains started becoming available. There was a distributor in New York City named Bounce Foods that we used to get things from. Another one was named Sherman Foods. I don't now if any of those exist; probably not anymore. If they survived long enough, they got bought up by a huge East Coast distributor now, known as UNFI, United Natural Foods Inc., I guess, which distributes all up and down the East Coast, has a huge warehouse.

But we did a lot of sourcing on our own, buying directly. We also got a vitamin line, and that was from Thompson Vitamins. That was an offshoot of the Thompson-Hayward Chemical Company, which is an agricultural chemical company. They also were the first to introduce the first organic insect control that was basically biological insect control, called Bt. It's *Bacillus thuringiensis*, it's a soil organism. And that was isolated and found to be able to kill a lot—not all—lepidopterous insect larvae. Lepidoptera family is moths and butterflies. So it would, by ingestion, when you sprayed it on the plant that larvae were eating on, such as cabbage worms, the larvae would ingest it, and it would develop a protein crystal in the gut of the insect and kill it. It would stop eating, and then it would die in a few days. That became available as early as the 1960s, so that was another thing that we started to sell, with a lot of the natural fertilizers.

We also sold diatomaceous earth and rotenone, which is a plant extract, pretty broad-spectrum, that came from a South American plant and killed all kinds of insects but was a botanical material that would break down relatively fast and was not of long duration toxicity like DDT or chlordane or any of the other chlorinated hydrocarbons or organophosphate materials, which were extremely toxic and starting to be heavily used and causing lots of problems in the 1950s and 1960s, which Rachel Carson documented entirely in her book *Silent Spring*. And I recall actually, maybe very vaguely, hearing or going to a conference where Rachel Carson talked. I know we brought her in to the Natural Food Associates convention, and also there was a group that was very much interested in food quality and food purity and all these chemicals being sprayed on agricultural production that were so toxic, and grew out of Rachel Carson's work. She was, I think, based in the Washington, DC area, and this group called the

Homemakers was based there. My mother was involved with that, and also went to meetings from that. They would have speakers, one of which I'm pretty sure was Rachel Carson, and more than likely heard her there.

So that was the beginning of the natural food store, and it slowly grew over time. It was started in the utility room of the house, and then a newer building with a shop and a building for holding meetings. When my father's plumbing and electrical shop and materials was built, a corner of that was set aside to become the store. Not much of a store, but we had lots of backup material. Almost everything we sold in bulk and weighed out. Later on there was some new distributors in the '70s. As the organic gardening and farming became much more of a known thing, and the back-to-the-lander hippie movement picked it up, new distributors became available that started aggregating lots of more organically produced and processed materials. Plus lots more grain, beans, and seed materials, bringing them in in bulk from all over the United States.

I also remember that we bought, we sort of quit growing the wheat early on, but we would get wheat in from local growers that was grown organically. And we would clean and store that in quantity. I was a young kid and would operate a small grain cleaner. That was a whole day process, cleaning maybe twenty hundred-pound burlap bags of wheat that came directly out of the combine and then was dried, and then we would clean it and have it ready for milling and sale, and store that in mostly fiber cardboard drums until it was sold out and the crop would come in the next year. But we also bought—locally grown wheat in the East was basically what is known as soft wheat, and that's a pastry flour wheat, large, low-gluten. Not that you can't make bread out of it, but it was difficult to be able to get a good-rising bread in that. And the gluten part is what becomes stretchy and holds the gas that makes the bread rise. Western spring wheats were much higher in gluten, and also the protein content of the wheat. So we would buy wheat from a farm in Montana, an early organic grower out there by the name of Ted Whitmer, who kept his soil organic matter high and minerals high. And when everybody else's protein content was dropping down, sometimes as low as 10 percent, he was still being able to produce high-quality wheats, sometimes as high as 16 to 17 percent protein. So we would get those wheats for bread wheats and have that available also.

And then the store slowly grew, a lot more people got interested in natural foods. There were other stores that started in the city of York, but we had people coming in from fifty or more miles around. Some people would come in once a year and stock up in huge quantities, in bulk quantities to take it home. People would come from Baltimore and Harrisburg to get it because we had a huge selection, and lot of bulk materials, and we would grind flour. Then we started selling produce out of the garden as well, and that expanded over time. We would buy molasses in five-gallon buckets and bottle that. We would buy local honey. I remember buying as much as maybe two tons of local honey in five-gallon cans, and all of that would get bottled in glass jars that people would bring us. We basically didn't buy jars; we just recycled them. And maple syrup. We had a local connection whose family had maple syrup production, a maple bush up in central Pennsylvania, and they would bring us a load of maple syrup every year. We'd bottle and sell that.

Plus, we had a whole library. People could borrow books, and we also sold lots of books on natural healing, organic farming. There was a big collection of that, probably at least 200 titles by the middle-sixties and into the seventies, and it really expanded at that point. There became much, much more printed material available, and more periodicals as well started becoming available. (2:01:21; end of Part 1)

AA: This is Part 2 of the oral history interview with Dan Lefever. So Dan, you mentioned that your father was involved with Paul Keene and they co-founded the Pennsylvania chapter of Natural Food Associates. Can you tell me more about that?

DL: Yeah. I don't know much about it early on, because it started before I was born, and then until I became aware of it, probably five or six years old. Then it was just at that point, it was an annual conference that we always attended. But it started in 1954, the Pennsylvania chapter of Natural Food Associates got started by my father and Paul Keene of Walnut Acres, a central Pennsylvania organic farm. Apparently, they went to a conference in Chicago from the Natural Food Associates, which was a nationwide association that was started by a doctor by the name of Joe Nichols. He was from Texas, and he recognized the connection between soil health, plant health, animal health, and people health. He was a medical doctor and was treating people but finding that better quality foods made a huge difference in outcomes of healing people.

Paul Keene and my father went to this meeting in Chicago, and they requested there that people start their own state chapters. And I don't know how many were ever started. There was one in Ohio, I think, and they had one in Pennsylvania. I think there was one in New York State also, that I remember. I know I went to conferences from New York State. Don't recall ever attending any from Ohio, but may have. I know there was, in Virginia there was an early organic apple grower, basically the first organic apple grower, and he started or was well-connected with Natural Food Associates also. Whether they had an actual chapter in Virginia or not, I don't know. His name was A. T. Thompson. And he talked a lot about organic growing and earthworms. He was on the board of directors of the Natural Food Associates for a long time, an early promoter of organic foods.

But my father got connected early on with Paul Keene. Like I said before, I don't know exactly when or where the first connection came, but it was either through the Small Communities host list, which both of them were on, or through the School of Living. But in any case, then they decided to start a Pennsylvania chapter of Natural Food Associates. They organized and had annual conferences starting in 1954. Sometime in the '90s or late '80s it changed to Pennsylvania Natural Living Conference, because it became more of a consumer-oriented thing and less of a farmer production-oriented organization. But early on it had a lot more farming instruction. And I know that they brought in William Albrecht to speak, and that was probably a couple of times, maybe more. I have a color slide that my mother took of William Albrecht holding me as an infant at my parents' Sonnewald Homestead farm. I would have only been maybe just a few months old, or at most a year old, at that point. So that would have been either 1956 or '57 when he came. I know he came later again to another conference, and I have a tape recording of him that my father made from that, and that would have been sometime in the middle to late 1960s. And I just recently saw in my mother's guestbook where she penciled in William Albrecht's name, and that was in 1959 by the date of the nearest other signature, but she forgot to have him sign the guestbook at that point, I guess.

So that was one resource person that was brought in. I think Ehrenfried Pfeiffer of biodynamics, he did a lot of research at Threefold Farm in Spring Valley, New York. He came to our property as well, because there's a photograph of him, and probably we brought him in also to speak at one of the Natural Food and Farming Association conventions that they held. There were a lot of natural food speakers that came in. I can't recall too much of the farm people resources. There may be some archives of some of those early conventions and brochures that

were printed for it that would have listings of some of those early organic growers and resource people that may have come in.

But I remember it being an annual thing, usually in July, generally held at a campus of a college or university. During the summer break, it would have lodging available, and they would have a place big enough to gather. We had crowds in later years approaching 500 people. Probably early on 100 would have been a lot. And Paul Keene always came with a big display of all the foods that he produced. He produced all kinds of natural foods, breads and cereals and canned goods, most of which the raw materials were produced on their farm, or by the local farms in Pennsylvania. But they always sold a lot of their materials at the conventions, but they also had a mail order business, very early mail order business where you could order from the catalog and get stabilized food shipped to you. Not fresh produce.

My father and mother would usually have a display also from our natural food store. Lots of materials. We would sell some things. I remember one time we had bought some Swiss cheese. It wasn't organic, but naturally produced Swiss cheese from a small cheese factory in Ohio. It was in great big chunks, whole cheeses that weighed on the order of a hundred pounds. We bought a special cheese knife to cut that up into chunks, and sold it at the convention. I think not as much sold as my father expected would sell. Another thing I remember, we got in a material, it was a cereal called granola. And that was the first granola I ever saw. Of course, it was copied hundreds of times after that, but that actually was produced in Tennessee. I don't know how we heard about it, but it was a basic granola which had, I think, some nuts in it. I don't think it had raisins in it. Of course, it had rolled oats, coconut in there, and then it was roasted with an oil. Probably had sugar in it as a sweetener. Might have had a little bit of honey in it. But I remember buying cases of that and having that shipped in, and we would oftentimes sell a lot of that at the natural food conventions.

Probably also took fertilizers there. Basically just display items, not in bulk to sell, or maybe a small quantity to sell to gardeners. But we had various fertilizers and printed material about that, what it was good for, and explaining the various materials we made available and sold to farmers. Of course, my father was distributing rock phosphate in quantities, so he had that available for distribution also. But at that point, by the middle sixties, a lot more of the fertilizer sales were home gardeners and some new, beginning small farmers. A lot less large farmers.

I do remember going to a number of organic farms in the Pennsylvania area, and that may have been in conjunction with homesteading festivals of the School of Living, or it may have been a field trip if it was close enough to where a NFA convention was being held. But I remember one big grower of cantaloupes, a whole field of organic cantaloupes. There was another person that got involved with NFA, and he had a business called Cappan Apples, and he had apple juice from unsprayed apples. Basically, there were orchards that were established and weren't being taken care of and weren't sprayed, but they weren't specifically organic. Probably still had chemical residues in the soil that they had been sprayed prior to that. And he also made apple butter and brought and sold that at the conventions.

Sometimes, not always, but we tried to have as much as we could in the way of natural foods in meals at the convention. We would work with the kitchen staff at the college or other facility that we were at, and would get a lot of better quality foods prepared for meals. Breakfast, lunch, and even dinners. Usually the conventions were on a weekend, and the people would come in Friday evening and Saturday and Sunday would be the convention. I know a woman that worked with Walnut Acres and did a lot of their food prep and product development who was a

really good cook and chef would help to produce and orchestrate those meals. And yeah, we would try to source locally grown food supplies for that as much as possible.

One time I remember Bob Huffman, who was an Olympic weightlifting and powerlifting trainer, came and talked. He was actually, his base was in York, Pennsylvania, and he was always interested in natural foods and better quality foods and high protein supplements and that kind of thing, which he manufactured and sold. And he would come, I think, and have displays there. And I remember one time we had a local ice cream producer make a large quantity of high-protein ice cream with Bob Huffman's high-protein supplement in this ice cream, and that was served as a dessert at one of the meals of the Natural Food Associates convention.

And that rotated around the state to various venues. The majority of them were probably in eastern Pennsylvania, but every few years we would have it in western Pennsylvania as well, around the Pittsburg area because there was a pretty large coalescence of people who were interested in natural foods over in that area. So they would help to organize it over there. And it wasn't just Paul Keene and my parents. They got it started, but there were lots of other people who were involved and took over and kept it going for years. It went for 50 years. Rodale was not really much involved with that at all. I think from time to time there was a little bit of input from them, but we did not have a lot of collaboration with them. They were not very meeting-oriented, at least not early on. It was pretty much all publications-oriented. (20:14)

AA: How long did you work in your family's natural food business?

DL: Well, I was involved with that, we as kids worked in the store business and helped to weigh out and package bulk foods for people and grind grain, probably ever since we were six years old and able to do stuff. We were helping and working with that. And I worked with it up until I left home at age 25. I was less involved in the later five years because it was right there, and I was supplying produce and doing that end of it, but a lot less with customer service. And I got more involved because I was operating the farm and expanding that operation and doing a lot more, plus we had apprentices coming in at that point, and I was responsible for working with them. Some of them worked on the farm, some worked in the store, some of them did both. It was just what they wanted to learn, basically, and work with.

We largely operated the store just ourselves, until the last five years, then we had some employees, a few of which were full time, and some part time. It got to the point where it was pretty busy. In the early part, we didn't really have any store hours or anything. People would come whenever. We had regular customers, not on a weekly basis, more a monthly basis, who'd always show up on Sunday afternoons. Eventually it got to the point where we had to set hours and make it a more regular business. But I was busy with it. I was involved with it up until I left home. I knew what was coming in and out of there and getting sold, and helped deal with deliveries and getting deliveries on a much more regular basis in big quantities. I would help to deal with that and was starting to produce more small grains and was taking care of making those available.

Another thing we started growing was edamame, fresh green soybeans—the edamame name was unknown at that time, but there were people eating fresh green soybeans. We started growing those on a regular basis. We actually lost the seed at one point and got it back from somebody we had shared it with. We got the seed from the Fertrell Company. That was another organic fertilizer producer who's still very active, and they were not far from where we were. They're up near Harrisburg, Pennsylvania. And they produced a fertilizer that was basically rock

minerals and animal waste products like blood meal, bone meal, that sort of thing. Did not have any compost in it and was not composted, so my father never cared for that and never really utilized that material. But they did, early in their business, sell seeds for a little bit. And that is apparently where we got this edamame soybean seed from. I tried to get any information they had from their archives about it, but they did not have any information on it. We do not know where it came from originally, the name of it or anything.

Basically, at this point it's just an heirloom seed that I maintain. It's never been distributed widely, but I am potentially going to have, if this fellow likes it, a large edamame producer grow it in Alabama. It's an unusual bean. It's flat instead of round or football shaped like most other soybeans. It's more like a very small lima bean. Very productive plant. I've seen it produce as many as 250 pods on a plant. And then we would let it mature and dry, and then harvest some of that and sell it as a dry bean also. But I saved seed from that and kept it going from my parents' place. I just have enough to barely keep it going. It seems every time I've tried to grow it, something does it in. Either deer get it, or rabbits, or it gets planted too late and doesn't mature. But I still have some of it. And I've kept some of it from the last crop that was grown at my parents' place, from 1989, in the freezer, and it was still sprouting at 25 percent about two years ago. It may have maintained that for nearly thirty years in the freezer. And that just shows what the seed quality when it's grown with good nutrients can be. Not stuff that only lasts a couple years and then won't sprout anymore. Of course, it was stored in the freezer, which helps a whole lot.

I've seen that in other seed quality also. Quality of seeds these days is pretty poor. There's more of it becoming available organically, but back in the day there wasn't any organic seed available unless it was what you were growing yourself. But I did have, an example I had, a home grower, probably organic gardening for ten years, gave me parsnip seed that they produced in their garden. And that was in the late '70s, I would say, middle to late '70s. I kept it in a glass jar, not in a freezer, it was on an enclosed porch where the temperatures were moderated but they still swing up and down, summer to winter. Parsnip seed is notorious for never even sprouting any the second year. This parsnip seed continued to come up for five years, and I figured it wasn't going to be coming up enough in the fifth year, so I sowed enough of it really pretty thick, and it ended up still coming up too thick. So that's an example of what nutrition and seed vitality can do. And a whole lot more can be done along those lines to produce much more high-vitality seeds.

Plus, something that I've learned now, only within the last few months, the microbiome around the root of the seed in the rhizosphere actually gets incorporated through the root into the plant and goes all through the plant to the point where it is actually, some of it goes into the seed and is carried with the seed. So when the seed sprouts, its microbiome that it needs to establish is there with it. Chemically grown seeds have almost no microbiome because the soils are half or less sterile, so they basically, modern seeds do not have any of that coming with it. Many heirloom seeds, if they're being grown well, are probably carrying that microbiome along, so that's another reason to be saving and utilizing heirloom seeds. (31:36)

AA: So when did you decide to leave your family's farm, and then what did you do then?

DL: I decided to leave in 1982. I had stayed on after graduating high school, operating the farm. At that point we were having a lot of apprentices come in to learn homesteading, small-scale farming, natural healing things. That had started, the first people that came were probably

through School of Living connections in the early sixties, and then in the late sixties, early seventies it really started to expand a whole lot because of the back-to-the-land movement with young people, hippie movement. Many, many wanted to learn how to be self-sufficient and homesteading stuff, so they came there to get a feel for it and then went out on their own. So we would have people that came in. Sometimes it was a weekend. More often they would come for a couple of months in the summertime more than in the winter, because of the housing facilities we had available. But we had some that would stay a year or more, and by age 15, when I was still in high school, I was having college graduates that felt like they hadn't learned anything, and certainly not anything practical, and wanted to learn something. So they would hear about our place and come there and come for the summer and work and learn. I was teaching them things, and they were picking up things on their own, and reading books and that sort of thing. I had apprentices that were college age.

Sometimes we had older people. We had one German couple that came from New York and came and worked there for a while and then went out on their own homestead. Most of the apprentices did not actually end up farming as a living. They all decided it was too much work, but a lot of them did incorporate gardening and homesteading into their lifestyle and other cottage industries, potentially. Some of them that went into natural healing became the naturopaths and chiropractors and worked with that. And I had a couple that did go into farming.

I would say my best apprentice came there at 35. I had graduated at that point; I think that was a year after I had graduated from high school. And he was 35, and he was an anthropologist and was interested in food production, growing food. So he came there, and was there for a year, had a child born there, and then he went to England and studied biodynamics in England, and then also traveled some in Europe and saw market gardening there. Came back and started a place, a farm just north of Philadelphia and started supplying local people initially, but pretty soon got connected with restaurants and started selling to the best restaurants in Philadelphia and basically got the whole farm-to-table movement going in the Philadelphia area with a lot of specialty produce that he grew.

He also started growing microgreens very early on. I just found that out from somebody else who worked with him. Didn't realize that he was one of the pioneers doing that, growing in a high tunnel and growing microgreens. They also organized an aggregation and distribution network for his region for a lot of different farmers and a mill that was grinding grain, and that was distributed to stores and buying clubs and restaurants in the Philadelphia area. He really did his job. And I didn't find this out until I read his obituary, that he had studied food as an anthropologist, the food supply in Papua New Guinea for a whole year and how they produced and supplied their food. And that's how he got interested in food production. Because he grew up in the city; he was from a relatively wealthy family. He got interested and then started a small farm. He actually continued to teach anthropology for a while, then eventually, once his farm got established, was able to do that full time and did not do teaching anymore, but did that to get the operation up and going. (39:08)

That was a diversion from why I left. I was busy with stuff on the farm, taking care of apprentices and stuff. My mother was involved with the store; that was her operation, and also organizing and running meetings along with my father. My father was doing his plumbing business, and then we had fertilizer sales, another side thing. So everybody was pretty busy. My parents just weren't available much to take care of the farming and gardening operation. That became more and more my operation, so I felt that I needed to stay there, but I did start attending more other meetings and traveling further afield to NOFA meetings—that's the Natural Organic

Farmers Association from the New England area. I started going to some meetings up there, their annual meetings in New England. Also at that time, in the late '70s, I got involved with Pennsylvania Nut Growers Association and then Northern Nut Growers Association, which was a national one that's been around for more than a hundred years. And then the North American Fruit Explorers, which is an amateur fruit growers' group. And they had annual conferences, the nut growers and fruit growers meetings. So I started traveling to those with a fellow I connected with, and we would go to those in the summertime and do other fruit and nut exploring on our own, collecting varieties.

So that was getting me out and getting connected with a lot more other people. And also, we had younger people coming in as apprentices that were basically, as I was a little older, my age, that I began to connect with as personal friends. Just socializing with them a lot more. A lot of them had traveled some and thought it would be good for me to get out and see something else and travel around, not just be at home all the time where I grew up. So one woman who I had actually met at a NOFA conference, and then she came to stay at our homestead for a month or two in the fall, after that conference, and we became romantically involved, but she still wanted to travel some, and I was not ready at that point to get married, so she decided to travel more, but encouraged me to get out and leave the farm and see some other stuff.

I was not very socially outgoing in high school at all, had never dated at all. I had gotten involved pretty young operating and busy with the farming while I was still attending high school. So I just didn't have much socialization. Probably would have been a good thing to have gone to college, that probably would have broadened my outlook a lot faster and quicker if I had done that. But even though both my parents were college-educated, they did not push any of us kids to go to college and felt we could teach ourselves, to learn skills, to make a living that way. None of us five children actually went to college at all, but all had successful businesses or skills that we were involved with. And they were also, through the School of Living, much interested in alternative schooling, but we all just went to the normal public schools, did not get involved with Montessori or Waldorf schooling or anything like that, other than just knowledge of it, but not actually practicing. We were almost homeschooled in a way, in learning constantly stuff on the farm and through the business, and mechanical skills as well through my father's business.

But I finally made the jump and decided to go travel for a while. I had gotten into bicycling, so I was going to do some travel that way. What ended up really precipitating it was a family friend who was a geography professor from Penn State, but that we connected with through the antinuclear movement, was going to travel to the West Coast to visit her son who attended Berkeley and had stayed on to operate a co-op food store there. She wanted help to drive across the country to go to visit him. So I left home in March of 1982, and we spent about—I guess it was close to a month—driving across the country and staying with various people that she knew as we went across on the way. And most of these people were women that had gotten involved with the antinuclear movement because of Three Mile Island nuclear plant accident.

She—this woman, Judy Johndrud [?—was an extremely humble person that probably singlehandedly was the most important person to have kept Pennsylvania from becoming a radioactive wasteground with all kinds of crazy nuclear projects that were proposed for Pennsylvania. But she was involved with all the licensing of the nuclear power plants in Pennsylvania. Kept some of them from being built. But we have two major ones that were within a local distance of where we were located in the York area. One of them was up near Harrisburg; that was Three Mile Island. We were directly on the 20-mile radius line. And the other one was

Peach Bottom, which was on the Susquehanna River down on the Maryland-Pennsylvania border. That was about 40, 45 miles away. And that one's still operating, and I guess one reactor at Three Mile Island is still operating. There were more reactors proposed for the other side of the river at Peach Bottom. Those were kept from being built. They were basically from Philadelphia Electric Company, which operated those ones at the Maryland-Pennsylvania border.

The other one, Three Mile Island, was from a more localized electric company from the city of York and the surrounding region, maybe up in the Harrisburg area, and I think some to the east of Harrisburg. They may have joined with other companies to build Three Mile Island, but Metropolitan Edison was the name of the company. And we were involved with the licensing proceedings for that before the Nuclear Regulatory Commission, which were held locally in York. And that is where we got connected with Judy Johndrud, where my father heard about and got involved with that and testified before that hearing. And actually got them to build a stronger containment vessel, because the Three Mile Island plant was within the landing area of a small international airport, Harrisburg International. Not that many huge planes coming in there, but big enough ones that if one would have ever hit the nuclear plant, it could have breached the containment. So they actually got them to build the containment stronger, and that probably prevented the hydrogen explosions that apparently occurred in there during the accident from causing it to breach containment and be a Chernobyl-type disaster. (51:39)

But in any case, I started traveling with this woman, Judy Johndrud, and we stayed at many people's places who were active in the antinuclear movement after the Three Mile Island accident, which occurred in 1979, and this was two years after that. A lot of grassroots antinuclear activity had occurred after the accident. That was in 1982, about three years after the accident, that we traveled across the country. And then I went out to eventually to San Diego, where my sister was living at the time, and stayed with her for a while, and got set up to travel by bicycle. But in the meantime, on the traveling across the country, I had sort of this idea, had heard about custom combining crew that worked on harvesting grain in the midwestern Plains States. I actually connected with one while we were in Kansas, and after staying with my sister and helping her with—she was in a suburban situation, and helped her develop some gardens and a wheatgrass business. She was supplying a local natural food store. Was there about a month, and then ended up going back to Kansas and going to work for this custom combining crew. Worked with that for the summer and into the early fall, into September.

And we cut wheat from northern Texas to the Canadian border in Montana. We would stop in an area and cut for a number of farmers, and then move to the next area. We started in northern Texas and then stopped in Oklahoma and around the folks that had the combine business around their homes in central Kansas, near Salina. And then we went to Colorado. Don't think we stopped and cut in Wyoming at all, and then went up, the last month and a half was cutting in Montana. That was a lot of acreage up in there. Worked with their family, and they had two other guys, and then a few others who came on later who helped. We had a crew of about eight people that were doing that operation. He built his own equipment for handling grain and trailers to haul combines, and then would sell them on to other custom combiners and build new equipment. But he would take the trucks, semi-tractors and extend them, put a 600-bushel bulk bin in the back of the truck so they could haul a huge amount of grain to the elevators for storage. Then we had four combines, and his daughters ran the combines, and the other fellows who were working with us, we drove the trucks to the elevators. Did the maintenance work on all the equipment.

These combines were new combines that were on lease, and we were working the bugs out of them. Some were new designs, and we would report back to the factory any problems we had that they could address. We didn't really have too much problems with them. They were Alice-Chalmers Gleaner combines. They had 30-foot-wide cutter heads on them, and his daughters, I think the youngest one was like twelve years old, and she was running this combine with a 30-foot-wide cutter head. It was basically all pretty much automated, hydrostatic driving, and it was all easy to control, hydraulics and stuff, for them to manage it.

But I saw what huge-scale agriculture was like, but this was all pre-glyphosate era. Nothing was being sprayed with glyphosate, the active ingredient in Roundup to desiccate the crop at the end of the year, or at the end of the growing season. I don't know when that actually became a thing, that they started doing that. They started using it on GMO crops. At the time, you had to wait until the crop dried on its own in the field. Sometimes we were waiting for a week for stuff to dry down; it would vary from year to year as to when the actual timing was with the harvest as we progressed northward. Then as soon as it got dried enough we would harvest and sometimes put it in the farmers' own bins, or take it to the elevators and put it in there and dump it there. Then up in Montana, there because it got so late in the season and later days are less light and cooler, things don't dry as fast. So they would cut and windrow the grain there and let it dry that way, and then we would go in and pick up from the windrows instead of cutting directly with the combine.

Instead of doing that process now, they've taken to spraying the fields with glyphosate to kill the grain just before it's totally mature and then just at the point of drying down, and that would hasten the drydown and get a fast, uniform drydown before snow started to fly, so you didn't have issues with potentially having snow or rain on the windrows. But when you got into September, you had the high potential for snow in Montana. We actually saw snow fall after we were finished harvesting a day or two before we left the area. Now they dry desiccate the stuff standing in place with glyphosate and then go in and harvest with the combine directly. It probably speeds stuff up by a week or more. (1:01:33)

AA: So after you worked with the custom combining crew, what did you do after that?

DL: After that, then I started traveling along. We went back to Kansas and I started traveling on bicycle. And I headed east and actually met my folks in Tennessee. The World's Fair was being held in Knoxville, Tennessee at that time, and I met them there and went to the World's Fair. And then I just continued traveling. From them I had host lists, people that my mother knew, people that we knew from School of Living, some people that had been apprentices, and I had a list from the Mennonite Your Way host list of Mennonite people. And being from the Church of the Brethren, I was sort of connected with that group. And then also we had an international traveler exchange that we at Sonnewald were hosts for many years and had people come through, called Service for International Peace and Understanding. And I got connected as a traveler with that, so I had some people to host me that way. I just visited people and explored agriculture along the way. I visited a number of different land grant universities and saw what was going on there. Had a few connections from North American Food Explorers. I remember going to Clemson University and saw a lot of research that they were doing with peach culture and other things.

Then I went south to the Gulf and Florida and traveled then across the Gulf through Alabama, Mississippi, Louisiana. Stayed in the New Orleans area for a while. Explored some

rice culture in Louisiana, I believe it was. Also saw citrus growing, some of the best-tasting citrus I ever had, down in Plackaman Parish, south of Louisiana, down along the Mississippi delta. Then across into Texas. Went through Houston, Austin—there's another big city in there before Austin—but in Austin I stayed with friends of a School of Living friend, a fellow that was the one who bought the property at Heathcote where the School of Living was. And he was a tree surgeon and trained a number of people as tree surgeons and put them into business that way. One of these young fellows was in the Austin area, and I stayed with him for a week. Rode into Austin and visited the Whole Foods store. At that time there were two Whole Foods in Austin, the original Whole Foods natural food store.

Then I continued traveling on to El Paso, and then up into New Mexico. Then from there over into southern Arizona and Tucson. Stayed in that area for a while; worked in a couple gardens. At that point it was January, February, but people in that area were doing gardens. That was when you started gardens, in the wintertime. Planted gardens in hollows to collect water because it was a really dry area. Some people were planting, in the summertime they would plant sorghum Sudan grass to make shade to keep other vegetable plants growing when it got so hot in the summer. Started exploring dryland agriculture there. Had a little bit of exploration with Native American planting and culture. I remember I met Gary Nabhan, who has done a lot of documentation and writing about Native American culture and growing indigenous culture in that area. He actually showed me date trees that were grown there, and that wasn't indigenous, those were brought into the Phoenix area. He was getting much involved with Native seeds and stuff at that time, but that was pretty early on in his, he had five to ten years of experience at that time, but has continued on with that seed saving stuff ever since.

And then went into the Phoenix area, and I was actually in the area to the east of Phoenix. Kimpi, Arizona. A family that we visited and had come to know, she lived there and came and traveled through our area in Pennsylvania teaching about using some of the native herbs, particularly chaparral or creosote bush for healing cancer. She and her husband were retired, and they were traveling around and doing elder hostel and also meeting up with natural food people and natural healing people and teaching about that. She said, "If you ever come to the area, come to that area, come visit and stay." So I went there and stayed there. Her husband had passed away about a year prior, and she had started to rent out a room in her home to bring in some income.

And a woman that was renting this home, a room in her home, I met when I got there. She was an anthropologist from France who had recently moved to the area and wanted to study the Navajo. She was very interesting, and we got to know each other fairly quickly. She was interested in growing stuff. She was pretty much a romantic and thought farming was a romantic thing. She had no farming experience, but had a lot of gardening experience. Her grandmother was a gardener, her mother had an ornamental garden that she worked with. Her grandmother had vegetable and fruit-growing gardens in France. Her grandmother was a physician and had a gardener that basically took care of stuff, but this woman that I met there, she had worked with her grandmother's garden and liked growing stuff and actually liked pulling weeds and thought it was pretty neat. I guess she didn't have to do it as a living.

In any case, we hit it off pretty well and decided that we would see if things would work out as a couple. It was not much more than a month after we met, I had gotten a car. She was not into biking, but we decided we were going to travel around some more by car. I got this car, and a few days after getting it licensed and insured, we went out to look at a view of the sunset over the city of Phoenix, which is basically the valley, and we were up on the hill, and we could see the whole city. And on the way back home after that in the evening we got hit with a drunk

driver and had a bad accident. And she came out of that with a spinal cord injury, and I got thrown into a situation of high responsibility. But I stuck with it and helped her in that situation. She had no other family here. Her mother was still alive in France, but her father had passed away back, I think it was the early to middle seventies.

So I ended up not being involved in agriculture. We actually did, after the accident and she had gotten rehabilitated some, actually ended up walking out of the hospital, which is very unusual for a high neck injury, a C-7, C-8 neck injury. But she actually had partial use of all her limbs and was able to actually stand and walk some, but never really got back to functionally walking because of a lot of interruptions of physical therapy, insurance that she actually had at the time for her work, which paid for inpatient, caused us to not be able to maintain physical therapy. We did move back to Pennsylvania with the thought that maybe I could work on the farm, but she just did not get along with my folks at all, and it just ended up being a difficult situation. So we basically ended up doing it largely on our own. The family didn't really want to help much at all. But I was in a situation where I was being held captive by her situation, not really one that I wanted to be in. It was some of that, but I also felt that I wanted to continue with the relationship, and did that. And that went on for thirty years, until she passed away. She had a lot of secondary health issues, which is often the case in a spinal cord injury because you're immobile and have lots of other secondary problems from that. But she also got breast cancer, we dealt with that for ten years, and then finally succumbed to it. (1:17:03)

But in the meantime I continued to maintain all my interests in growing stuff. We relocated to the Philadelphia area for rehab work because there was a lot of medical stuff going on in Philadelphia, but there's also major rehab hospitals in that area. So we went down in that area and worked with that a lot in the early years. And then pretty soon I got into a situation where I was doing estate caretaking work, on an old estate west of Philadelphia. I learned ornamental horticulture, which basically I didn't know anything about. I knew a lot about vegetables and fruit growing, trees and stuff, but knew very little about ornamental horticulture. And this person who I worked with actually was involved with direct marketing catalog sales and did the catalogs for Brecks and Springhill nurseries. Brecks is a Dutch bulb nursery, and Springhill is still operating, and they are a perennial—mostly ornamental plants—nursery in Ohio. He got a lot of plants and stuff to plant from that, so I started doing a lot of ornamental gardening for that.

Also, the whole Philadelphia area was a horticultural hotbed for two hundred years, from one of the early collectors of a lot of American plants that got shipped back to England from the Philadelphia area, a fellow by the name of John Bartram. And then lots and lots of other horticultural stuff over the years, the Tempany [?] Horticultural Society, extremely active, started in 1850 and still a major player. Puts on the biggest indoor horticultural garden show in the world annually, in March. And then the DuPonts and all of their estates. Just all kinds of stuff going on there, a huge amount of opportunities to learn. Longwood Gardens, which was a former DuPont estate, big, big ornamental display gardens and millions of visitors that go through there every year. There was a training program for gardeners. So I learned all of that.

But meanwhile, I was gardening there, vegetable gardening for the owners of the estate, and also used some of the ground there, did a small vegetable operation on the side where I was supplying some to a natural food store, a little bit to some restaurants. That was done along with caretaking of the estate. So I had maybe maximum half an acre of beds that I had started there. I had read a book from John Jeavons and got interested in French intensive/biodynamic methods with raised beds that he was promoting in California. And so I started doing that and made some

framed beds, but double dug those. Got a broadfork and started doing that. That was in, I started that stuff in 1984, '85.

Then I took some ground there on the property that was just fields that were being mowed and developed beds in there, started growing more vegetables and supplying a couple restaurants and natural food stores. It wasn't a big operation, but it brought some more income in. That situation, I started doing wild green salads and also some cut lettuces. At the time, a lot of new seed catalogs were coming out on market gardening, Cook's Garden, Rene Shepard's catalog from California. There was a couple other ones, but just young people who had started growing and getting into really specialized seeds, a lot of the European varieties and stuff for really top-notch market gardening and flavor varieties. Got connected in with that and edible flowers. Started putting edible flowers in the wild greens packages that I was making for natural food stores, and some of that for restaurants as well. A lot of restaurants started picking up edible flowers for decorations. I worked out the availability of about 30 edible flowers throughout the season that they could use, starting with wild violets and ending with mums.

Then that situation on that estate ended, and I started working fulltime in a mechanical job at a tractor and farm equipment supply place for a little while. Then I worked on a DuPont estate for six months until I got fired. That was kind of a fortunate situation because DuPont had schizophrenia and he ended up two years later killing one of the people from the estate. He actually supported the US Olympic wrestling team on his estate, he did all the training there for that team. He killed the head wrestler, who was a gold medal Olympic wrestler. So it's lucky I got fired and not fired at. But I learned a lot of stuff. He wanted cut flowers. He had these 1920s greenhouses that were falling apart, and I went over to one, put all the pieces of glass back into place in six months' time, from July to January. By January I was ready to have cut flowers coming out of there. Carnations, snapdragons, Friesians [?]. I had never done anything like that before, but had enough knowledge and picking up from books and a few people in the area who were still growing cut flowers, the remnants of the cut flower industry in the United States. It started in a Philadelphia suburb area, St. Mary, where cultivated mushroom started, in Kenet Square in Cheshire County, and Longwood Gardens, they were all right in that area. So I was able to learn how to do it from a couple growers there and was actually able to have those flowers ready to come out of the greenhouses. Got fired from that.

Then I just did estate work from various estates, coming and going, a few for a couple years, others for a short time period. Mostly ornamental gardening, but some vegetable gardening, all estate gardening kind of work. There were some fruit trees on one of the estates that I began pruning and really developing organic fruit growing techniques. I was very, very interested in that, and was able to once in a while attend a few fruit grower and nut grower conferences. Then I started attending, later on, some PASA field days when it was only a day long. It was not easy for travel with my wife being disabled. She used a wheelchair and needed a lot of help. She was independent pretty much and could handle things on her own during the day, so I could go out and work, but needed help with meals and stuff in the evening and getting into bed, getting up in the morning and getting dressed.

But I continued learning more and exploring constantly, and pretty soon I was able to, I got a fulltime long-term estate job that was only a few miles away, so I worked there for twelve years. And she had ornamental gardens and fruit gardens, espaliered fruit trees, and a very old orchard, a small orchard. I took care of that organically. Started working with Penn State and Extension and using pheromone traps to monitor insects and report insects. Gave some feedback from an unsprayed orchard situation and helped to learn more about insect and disease control

utilizing organic materials that were less toxic. I was digging in some nutrient materials, mostly as soluble seaweed. Not a whole lot more than that foliarly. But continued to learn that and keep on top of that. And got interested some in permaculture, though not a whole lot, but began to explore that.

Maintained interest in edible landscaping, and also maintained connections with my friend I had done traveling with to fruit and nut growing conferences, Michael McConky. Meanwhile, he had started a business, he took his hobby of collecting a lot of these varieties and turned it into a business called Edible Landscaping. Between him on the East Coast and Rosalyn Creasy on the West Coast, who wrote a book about edible landscaping, they both came up with the term, and neither of them registered it, so I don't know really who came up with it first. But they both continued to use it. He ran a nursery business, not installation but just supplying plants, for forty years, and had fifty types of fruit and nuts and perennial vegetables and things that he sells.

I was continuing to do estate work and some mechanical property maintenance work until my wife got really sick and then passed away. And then at that point it ended up that I moved down to Virginia to work with my friend in the edible landscaping business. Because of her disability and just not really having a good income, I had plenty of skills but not a lot of time to work with it, and sometimes the income was pretty minimal, but didn't have a lot of permanent estate work. So we ended up never actually purchasing any property, just renting a place. And that place ended up being sold. The owner changed, and the new owner didn't want to give me another lease after my wife passed away. So I ended up having to make a big change, and Michael McConky from Edible Landscaping knew that the situation was not good with my wife and that she was very sick. He said, "If stuff changes, you're welcome to come down here and check stuff out." I hadn't actually seen him for thirty years. I knew he had this business; I'd seen his catalogs, talked to him once in a while, but just really hadn't connected for a long, long time.

So I went down there, and liked the situation and moved down there to work with him. And I worked there for about five years with him. Ended up that he just really couldn't keep people on fulltime year-round, so I started doing some more side property maintenance work. Then I was down to a couple days a week, but I still did maintenance work on the nursery, greenhouses, property, and also took care of his trial orchard there where he had plantings of a lot of these different types of plants so people could see what they looked like when they're full grown and try fruit if they were in season, etc.

So I was taking care of that, got another small backyard orchard that somebody had started as a market garden project. The new owners on that property didn't know what to do with the fruit trees. It was basically heirloom apples and a few other fruit trees. I started taking care of that and working with that organically. Then another community had an orchard that they planted half an acre of diverse plantings, and they wanted help with pruning and taking care of it without chemicals, so I started teaching them to do that. And eventually they didn't really have the heart to keep after it, so I just started taking care of it and eventually leased it. So I'm still taking care of that. The other heirloom apple property got sold again, and the new owners didn't want to work with that.

But I just kept my hand in organic fruit culture and have what I consider now 45 years of experience in small-scale backyard organic fruit culture, many varieties of fruit, not just the regular temperate fruits. But still had a lot of issues trying to grow fruits organically with good cosmetic quality. But getting better and better all the time, and really introducing a whole lot more of foliar nutrients to really drive plant immune systems, and really working with soil

biology and microbiology and restoring that. That is making a huge difference as well in perennial cultures, fruits and nuts, and even annual stuff, but actually having better results and quicker in perennial cultures with that. And that's basically John Kempf's Advancing Eco-Agriculture paradigm, which I've really migrated to in the last three years. For sixty years, since I was five years old, I've had my own garden and organic horticulture experience, but I've really migrated to being a whole lot less of from the soil up than from the sun down, with photosynthesis driving everything, with the plants putting their photosynthate—starches, sugars, fatty acids—into the soil through root exudates to feed the biology in the soil. And that in turn digests the geology, the minerals in the soil, which makes them available for the plants. Many soils have most of what a plant needs without having to add even much in the way of rock minerals. Some of that, you need to add, in some situations, but most soils have a lot of what's needed and only a small amount of microbes that are missing need to get added, but they can get added quickly through foliar to quickly increase the photosynthetic capacity in the plant going into the soil to rebuild the biology and then eventually make it available from the soil. (1:40:49)

AA: So we are pretty much out of time. Is there any last thing you want to say before we end the interview?

DL: Well, I'm still trying to figure out how my father actually connected with organics and got going with that. But his education of a lot of people through NFA and Paul Keene, the connection, many years' education, and Rodale's work basically laid the foundation for Pennsylvania now being second in the country in organic production. And that's probably for about the last three years that they surpassed Oregon. The outgoing governor, who I guess has just gone out, Governor Wolfe, he would have liked to have Pennsylvania surpass California in organic production. But I don't think that's going to happen with California's land base and highly mineralized soils and sort of a 20-year head start on major organic producing. But when they run out of water, then Pennsylvania's pretty soon in contention, and that's coming along. I don't know exactly how they measure that, if it's in dollar value or if it's in actual volume of produce, tonnage of produce. And I have heard recently that a lot of it is because there's a major amount of organic poultry produced in Pennsylvania. Whether they're feeding in largely Pennsylvania grains for that, I can imagine a lot of it is being imported, it's probably a lot more than Pennsylvania can produce if they're feeding huge amounts of poultry. The dollar value on that is a lot higher than fruit, vegetable, grain crops. There's a lot of dairy, I think, that's being done organically as well, but I do not know exactly how they're determining that for Pennsylvania being second in production.

But my father definitely was way ahead of his time, and my mother, when she came on the scene ten years later, linking in with natural healing and continuing with the whole NFA conventions and the local meetings and lots of other ones that she connected with around the country. It just continued to educate constantly and bring resource people into the area to educate and have meetings. Got connected with *Acres* pretty early on, probably as early as two years or so after they started publishing, getting the *Acres* magazine. Continued with *Organic Gardening*, and then *New Farm* when it came in. That was when I was still at the home farm when it started, but it only lasted I think about five years.

Where my father actually first heard about it, I'm still in the process of trying to figure that out. I may never really know. But it looks like it was a lot of the connection with Ralph Borsodi, learning about it and then sharing it through his homesteading. And he got interested in

better food stuff as early as the '20s, but don't see much printed information about organics. And then the biodynamic people brought stuff in, and that came from Germany. It came from Rudolph Steiner in 1924 publicizing and printing his lectures on organic type of gardening, which they call biodynamics. Very integrated kinds of energetic dynamics from the whole cosmos, interactions with plants. But they were already by 1938 publishing a book on *Biodynamic Farming and Gardening*, which I talked to you about, Ehrenfried Pfeiffer. And the research that he was doing was the connection with the biology in the plant.

And they already understood mycorrhiza fairly well at that time, that it was connecting in that plant. They actually saw it as early as the late 1800s under a microscope that the fungi were penetrating the root hairs. By the 1930s they were realizing that mycorrhiza was a very important part of the soil biology. And yet it really wasn't taken into account majorly as a part of organic farming until probably the most recent ten years, until Elaine Ingham started doing—well, I guess she's earlier than that. She started in the '90s. But it wasn't really made major use of in organic farming until probably the last twenty years, and more in just the last ten years. But it was once they had DNA analysis that they could really start analyzing all this stuff, because you couldn't grow it in a Petri dish. Could observe some of it under a microscope.

But even at that point, in 1938, Pfeiffer was writing in this book about regenerating soils, and used the term “regeneration” and “degeneration” of soils. That's the current buzzword. I think maybe Robert Rodale, who first used it before he passed away or was killed in an auto accident in Russia in the '90s, started using it. And he maybe picked it up from Pfeiffer's book, I don't know, or maybe came up with it on his own; I don't know which. But it's pretty amazing that it was back there that long ago. A few people had the foresight to see what was happening to agriculture already at that time, even before the major chemicals were introduced as products from war production after the war, selling them to farmers, when the really toxic stuff started being used. But even before that, they were seeing the issues with tillage and some artificial fertilizers and stuff that were being used, and organic matter reducing in the soil.

AA: Thank you so much for taking the time to do this interview.

DL: You're welcome. (1:50:31; end of Part 2)