

Voices from the Past

University of Idaho Department of
Agriculture

Interviewee: Hugh C. McKay

October 29, 1969

Tape #142

Oral Interview conducted by Harold Forbush

Transcribed by: Brittney Law November 2006

Edited by: Mary Brosnahan April 2009

Brigham Young University- Idaho

Harold Forbush: The interview which follows, first recorded on real to real tape, is now placed on a C90 cassette. This 1st day of August 1984 through the facilities of the Upper Snake River Valley Historical Society that is located at North Center Rexburg. To be written at PO Box 244 Rexburg, Idaho 83440.

HF: Today it's my real genuine pleasure to meet with Hugh McKay of St. Anthony, who manages the Tetonia Experiment Station of the Department of Agriculture extension work of Idaho. And for some little while we have endeavored to get together for the purpose of explaining the history, presenting the history of the Tetonia Experiment Station and indicating its development over the past 50 years. It's my understanding that this summer there was a program held at the station commemorating the 50th anniversary of its founding. And so it's with much pleasure that I welcome Mr. McKay to my office this evening of the 29th day of October 1969.

As per usual, Mr. McKay, we ask the individual being interviewed to state his name, his full name, and his place of birth. We won't particularly care about when you were born, but the place of birth and your present residence and what your occupation or business is.

Hugh McKay: Thank you, Harold. I'm very happy to come and discuss our program we had at the station, Tetonia Station with you here. I'm Hugh McKay; I live in St. Anthony, Idaho. I'm superintendent of the Tetonia Branch Station, which is a branch of the Idaho Agriculture Experiment Station System, for the state of Idaho.

HF: Before we get into the background and the history of the experiment station, first of all, I'd like to ask you what philosophy initiated such an experimentation as the one they have in Tetonia?

HM: Well, the reason for the experiment station in Tetonia is, as you probably know, the agriculture in the state of Idaho is widely diversified, and no one area represents all the other sections of the states. Therefore, the university has experiment stations in the different sections of the state representing different climatic conditions and different farming conditions. The Tetonia station represents the high-altitude, dry farm part of the agriculture.

HF: Would you like to mention the names and the locations of other experiment stations throughout the state?

HM: Yes, I'd be happy to. Of course, Moscow is the home station. It was established in 1892 and has an acreage of 1,125 acres. Caldwell is our cattle research station. It was established in 1906 and has 320 acres. The Aberdeen station, which is a principle location for the potato work and the cereal development work, was established in 1911 and has 248 acres. Sandpoint, Northern Idaho, represents the cut over area of the state of Idaho was established in 1912 and has 60 acres. Tetonia, established in 1919, to represent the high-altitude dry land area, has 509 acres. Parma represents the seed producing area in Western Idaho, under irrigation, was established in 1935 and has 79 acres. Kimberly, established in 1950 and represents the bean producing area in South

Central Idaho, has 80 acres. And there's also the Dubois experiment station of operation with the agriculture research service, which is the center for the sheep research.

HF: Now, are these various stations more or less managed and supervised by and through the Department of Agriculture in Idaho or strictly the University of Idaho? And maybe what part does the Department of Agriculture of the United States play in—if any?

HM: Well, this is all under the supervision of the College of Agriculture at the University of Idaho. Dr. R.D. Ensign is the associate director, directly in charge. And Dr. J.E. Krauss, Dean of the College of Agriculture, is overall in charge of the entire program.

HF: So actually the Department of Agriculture of the United States really has little or nothing to do with these?

HM: Well, there is cooperative personnel from the Department of Agriculture located at all the various stations. They cooperate and help with the work on the stations, on all the various stations.

HF: Now, the funds that are made available to operate these various stations, is that come from through appropriations of the legislature in part or...

HM: The large part of the funds, for all of the state work, comes from the state legislature as appropriated directly to, and also, we have a small amount that comes from sale of some, like our foundation seats program. We have some income that is part of our budget.

HF: I see. Well now, drawing our attention to the station up at Tetonia, just where is the farm presently located and what is its elevation?

HM: It is located on Highway 33 about 33 miles east of Rexburg here. The elevation is 6200 feet, which is quite high, about as high as any of the cultivated land in Idaho. The rainfall is about 13 2/10 inches per year.

HF: Now, I think we could probably get now into the background history of the station, when it was commenced and the developing years over the past 50 years. And in presenting this, Mr. McKay, I note that you have a folder there, and you'll be reading, I guess, quite a lot of the materials from this folder, which is very fine.

HM: Yes, we had a brochure illustrating the work and listing the changes that have been made the past 50 years that we handed out at the field day, and I will read a considerable of this from the folder.

The past 50 years have brought many changes to the Tetonia Branch Experiment Station. However, its purpose has always been the same and that is to serve the farmers of the State of Idaho. The bill establishing the high-altitude experiment station in Teton County was passed by the 1917 legislature. Don C. Briggs and C.F. Coles were the Teton County representatives, and they did much to get the

station located in Teton County. In 1918, 40 acres of irrigated land were purchased near Felt. The station was started in 1919 with W.A. Moss as superintendent. The primary work was 4H testing. It soon became evident that additional dry farm land was needed for testing cereal crops.

In 1921, 80 acres of dry land were purchased 4 miles west of Felt, across the Teton River. Only the more daring farmers visited this farm because of the bad dug way into and out of Teton River Canyon. The dug way still remains, but the bridge has long since disappeared. In 1930, a road was finally constructed from the dry land station 3 miles southwest to the main highway. Then, in 1932, the buildings were moved from Felt to Tetonia. Because of the difficulty of getting to the dry land station during the winter months, it was decided to move the station to a location on the highway if possible. In 1938, a three-way crate was made with local farmers; 106 acres were obtained where the station is now located. The buildings were moved to this location in 1939. The need for more land to produce foundation seed and new grains, grasses and potatoes led the University to acquire 485 acres, 2 miles north of the station buildings in 1950.

After 32 years of service, W. A. Moss retired on January 1, 1951. Hugh C. McKay was then appointed as superintendent. The office was moved from Tetonia to a courthouse in St. Anthony and later to the basement of the post office where it remains today. In 1951, a seed cleaning and storage plant was built to handle the foundation seed grains and grasses. The office buildings and home in Tetonia were sold in 1956, and the money was used to purchase a pump and sprinkler system for 120 acres on the foundation seed farm. In 1957 the foundation seed potato project was moved to Tetonia station where 20 acres of foundation of Russet Burbank potatoes are produced yearly. Increased part of the potato breeding project was moved to Tetonia station in 1958. This has been increased in size from 8,000 seedlings each year to 22,000. A new potato breeding storage cellar was constructed in 1967 to handle the increased number of seedlings being grown.

That pretty well brings us up to date on the history of the station.

HF: What buildings are currently on the station? And could you describe the improvements, specific improvements there at the station in the way of buildings?

HM: We have one residence which, where the foreman lives year round. We have an office and garage building. There are two machinery storage buildings, one with a shop in for repairing machinery and also for storage and a Quonset for just storing of machinery. We have a potato cellar for the storage of foundation seed potatoes, and as mentioned in the history, we also have a potato breeding cellar for the new increases in potatoes. Also, which is quite evident on the landscape and evident along the highway, is the seed grain storage and cleaning facility. It is quite a high building, being 3 stories, and is quite easily seen from the various areas in the valley. In this grain storage, we store about 10,000

bushels of grain, which we clean and treat during the winter months for sale to certified growers the following spring.

HF: How many employees are presently on the farm?

HM: We have two technical personnel, myself and Bruce McCallum, who came recently from Montana State College at Bozeman. There are two agriculture aides and the foreman, Violet Bell is an agriculture aide, and Craig Wade is an agriculture aide. These are the three or five permanent personnel that work the year round. During the summer months, we hire additional irregular help. We tried to hire a few students every summer to help with the summer work in the cereal nurseries to give them experience and also to help them in working their way through college.

HF: Does the station have an adequate amount of farm machinery at the station all the time to take care of all of their needs?

HM: Yes, we have a very adequate amount of machinery. To get a thing improved all the time, labor being so hard to get as it is, by having large enough equipment, we are able to replace some of the labor.

HF: Now, Mr. McKay, you mentioned that a certain number of acres had been put underwater, that is to say under an irrigation sprinkling system. How many acres? And where is the—what's the source of the water?

HM: We have 120 acres under irrigation; however, all of this is not irrigated in one year. We rotate the ground because we're planting foundation seed potatoes, so the potatoes don't come on the same ground each year. We have enough water each year to irrigate the 20 acres of potatoes plus some of the grain. We can irrigate the grain early and late when the water isn't on the potatoes. The water is pumped from the Teton River. It is pumped 485 feet out of the Teton Canyon for the irrigation ground.

HF: Now, when you talk about foundation seed potatoes, what variety is especially emphasized there at the station?

HM: Of course, we're interested mainly in Russet Burbank potatoes in our foundation seed program. However, we do raise others such as Norgold Russet, which is a potato from North Dakota and is used in the western part of the state to some extent in the early areas. But, our primary potatoes are Russet Burbank.

HF: Is that the variety which is commonly known, the common taters, the common potato that is produced in the Upper Snake River Valley?

HM: Yes. It's the predominant potato. In fact, it's probably the only one to an extent. There are a few fields of Norgold seed, but other than that it's Russet Burbank.

HF: What contribution has the station made in the production, the betterment, improvement of a better Idaho potato? Is this a fair question?

HM: Yes, in our program of foundation seed production, the practice we follow is we index our potatoes each year. By that I mean we select about 5,000 tubers, we've cut the stem end off and put a little aluminum metal tag in the stem end with the number. The same number is put on the tuber, and these are sent to California and planted in December, and in March we go down and [inaudible] for disease, and we only keep the most vigorous potatoes that show up in the California test that are disease free. And we feel that by this method we have been increasing the vigor of our foundation seed, the vigor of the plants and the vigor of the tubers. We supply enough foundation seed to certify growers that when the certified growers raise these in their own little seed plot, they usually get about 50 sacks from us, and the growers vary, of course, depending on the number of years, or number of sacks we have, but usually there are 60 to 80 growers. These growers produce enough seed for about one-third of the commercial production in the state of Idaho.

HF: I'm amazed at that volume. How many years has the station been involved in this foundation potato seed work?

HM: Since 1957.

HF: For the last 12 years then, a direct influence has been made on the production, well, influence on the type of seed that is regularly grown here in the Upper Snake River Valley.

HM: That's right.

HF: In your opinion, then, is the potato that's being produced here in the valley, in the Upper Snake River Valley, a heartier potato, one which is more—I shouldn't say easily stored—but one which is, when it is stored? It is able to go through the storage period in much better condition? Is this part of the --

HM: Yes, it's part of it. Also, I would like to add that the seed produced in this Upper Snake River Valley around the Teton Basin area and the Ashton area, produces a seed that give much more vigor in the lower basin, or in the lower areas such as the Snake River Plains around Twin Falls and Aberdeen. The high-altitude seed results in a more vigorous plant than seeds from the lower areas. They get an increased yield from these vigorous plants from high-altitude seed.

HF: Then I suppose the station has done a lot in preparing plants which would be more resistant to disease too. This would follow, would it not?

HM: Yes, all of our foundation seed that we plant, the 20 acres is tuber united. What I mean is each tuber is cut, treated, and planted as a unit. All four pieces are planted in a row so that if there's any disease, there are four pieces that are diseased, and they're very easily detected. Instead of if you just plant one seed piece it's hard to detect, but when there's

four in a row, they're very easily to detect, and it's much easier this way to eliminate all disease in the potato lots.

HF: Well now, I'm learning something here tonight in this interview, and there's a lot of things that I don't know and understand basically about agriculture, but I understand that over the years the station has been particularly interested in seed grains, cereals. Could you develop that for us somewhat and just what they have done in making a better cereal grain for the Idaho farmers?

HM: Yes, I'd be happy to. Since 1951, when we obtained the foundation seed farm two miles north of our present building, and we also built the seed elevator, we have been producing foundation seed of all of the cereal grains that are used in the state of Idaho.

HF: Now when we talk about cereal grains what do we mean? Which grains are those?

HM: Well, for instance, in our winter wheats. of that type have been released through the foundation seed program at the Tetonia We have developed wheats such as Ipana, Tendoy, Quanser and McCall and New Gains and Wheat Station. This seed has been made available to the certified growers for increase to commercial growers. Now as far as the irrigated farmers, we also raise the foundation seed for the irrigated farmers, such as I did 59 Lemhi 66 Lemhi, we have two new ones coming up for the irrigated farmers, I should say three new ones. Two of them are soft white dwarf wheats, Idaho 19 and Idaho 15, which we have not named yet; a new short hard red spring wheat, Idaho 18, which we have not made yet. These will be released in the next two or three years and will be very well-liked by the farmers because they're short, stiff, strong wheats with high yield capacity.

HF: Now when you say high yield, what, can you give us an idea how many bushels per acre some of these relative ones you've mentioned would produce on, what, dry land, or on irrigated land?

HM: Well, Idaho 18, a hard red spring, we've had trials on this year on the Egin bench on rates of fertilizers and rates of seeding, and the highest yield was 90 bushels per acre compared to our average yield now of about 65 to 70 for Lemhi 66. And Idaho 19, this is a soft, white wheat gets around 80 bushels in the short stick straws and a lot laid down. And Idaho 15 is about the same yield rank, about 80 bushels, 85 bushels.

HF: Now this is on the soil that is watered? Watered soil?

HM: Yes, irrigated. Our dry land areas, Idaho 18 will yield about 40 to 45 bushels.

HF: How does that compare with grains which the farmers were producing say 30 years ago, Hugh?

HM: Well, their higher yields, you could say that they're about 10 to 15 bushels higher yields, but the important thing is that they are a much higher quality. Millers these days are

demanding wheats of high quality so they can make flour. When they supply flour to a miller, it isn't like it was in the old days when they could just supply any old flour, any type of wheat to make family flour. The millers have to supply flour now that the bakers can use, and they don't have to worry about that has a good, long mixing period. Therefore the wheats we will be released recently have been high quality wheats at the millers desire. Also, we had a wheat that we release several years ago; Moran, a hard red spring wheat, which is the millers this year are paying a 70 percent premium into the farmer, and a preset premium to the grain dealer where there's a particular variety. And practically all of the irrigated wheat in this upper irrigated area now is Moran, which is a hard, red spring, which demands a spring.

HF: And it had its foundation stalk beginning pretty much there in Tetonia?

HM: Yes, the foundation seed was increased and produced in the Tetonia branch station.

HF: Does any of this foundation seed say, go into Northern Idaho?

HM: Yes, we supply the whole state. We try to distribute all of our foundation seed equally, or wherever the greatest need is over the state, wherever it would be used the most. Now, Federation 67, which is a new release several years ago, that was developed by Dr. Pope. We increased the seed at Tetonia station, and it is for use in the Twin Falls area where they have a longer growing season, but we increased the original that Federation 67. Also, on barleys, we released vale barely for use in Western Idaho, and while we don't really bale here in Eastern Idaho, it's a relatively long season; barley. We produce the seed for western Idaho.

HF: Now, we've been talking mainly about wheats; I suppose, and some barley. Is there any experimental work being done with oats and rye on the station?

HM: We haven't done any work with rye because rye is a bigger problem in dry land areas, and we like to keep an eye out because the millers don't like rye in the wheat. Rye used to be raised in areas and sold commercially, but as far as I know in southeastern Idaho now, there is no rye being raised. We do have quite a bit of oats being raised, more oats this year than normal because three years ago we released an oat by the name of Cayuse that gave us a much higher yield. It's shorter, stiffer-strawed, doesn't shatter nearly as bad as the old variety and can be combined directly, and the farmers like it so well that they have gone to raising more oats than they have in the past. This oat was developed at the Cornell station, but through our uniform testing program and our cereal nurseries, we noticed that it was an exceptionally high quality and high yielding oat, and with the permission of Cornell University, since they did not want to release it, we released it as an Idaho release. And it is through this uniform testing program that we find a lot of these new varieties for release.

HF: Is there any history of any of these grains being released to be planted in foreign lands such as Mexico, right around Mexico City, down in that area and possible over in the Orient?

HM: Well, some of the grains that we are growing now are being raised in India the last few years. This Idaho 18 that I talked to you about is a selection that we made from a group of wheats that we obtained from Mexico because in Mexico they have all of the diseases that they possibly can think of and any wheat that comes out of Mexico is an exceptionally disease resistant wheat. They have been, the Rockefeller Foundation, in Mexico has been working on a large number of short, stiff straw and high yielding wheats and this Idaho 18 selection that we have is one of those wheats. Some of that is being raised in India, and there's some of that being raised in California. A lot of our seed has gone to other areas; some of it has gone to Canada, especially some of the barleys and also some of the potatoes have gone to Canada.

One of the most wide spread releases that we've made from Tetonia station happens to be pure-line barley, this has become one of the principle barely raised in the irrigated section of Southeastern Idaho and it has also become a new crop for Idaho because it has been approved for malting and a lot of the barley, Purline barley grown in this area now is being shipped east to the malting area and is used for malting. This variety was, originally came from Germany and we tested it at Tetonia station in 1956 and found that it was an exceptionally good barley and therefore we have released it and it is now the principle barley in southeastern Idaho.

HF: Now was that developed for irrigated land and also for dry land?

HM: It is an exceptional barley because it is being used both in irrigated and dry land. It has, it's a two row barley, it has quite stiff straw, stands up quite well, it's resistant to yellow dwarf, one of the few barley's we have that is; it thrashes exceptionally well, just like wheat and the farmers really like it. It is adapted to both dry and irrigated land.

HF: Now you've mentioned on of the advantages that farmers, why their liking these foundation cereals is that the stalks are, how do you describe them, more durable? They don't break and so on, what do the farmers use the straw for; I mean the use it for feed or for bedding?

HM: The primary purpose of stiff straw is so that the grains will not lodge, and be difficult to combine. The straw is also used to bedding and such; they bail it for a lot of chews. For the dry farms, its put back as a mulch for soil erosion control and moisture conservation.

HF: The farmers don't burn their stubble over like they used to?

HM: Not like they used to no, most of them are utilizing straw.

HF: When that grain is cut, how much of the stalk still remains on the stump in the way of inches?

HM: Oh, there's probably from 12 to 18 inches depending on the height of the grain which acts as quite a snow reservoir during the winter; catches a lot of snow.

HF: Then the following summer, that's all summer fallowed into the soil?

HM: Yes.

HF: How many years does it take for that to completely break down into mixed soil?

HM: Well, it takes sometimes two or three years, that I know of. During an exceptionally dry summers we've plowed up old straw that was plowed down two or three years before, but if we have a warm, wet summer, why it decomposes in one year.

HF: Well now Mr. McKay we've been talking about foundation potato seed and various cereal grains including wheats and barley, some oats and so on, has the experiment station in Tetonia done much foundation work with foliage, grasses and things of this nature?

HM: Yes, the foliage studies at the Tetonia station have been in cooperation with the plant material section of the soil conservation service from Aberdeen station. Many different strains of grasses and legumes from all over the world have been evaluated since the program began back in 1940. Several widely used grasses and legumes have been released through this program. Nordan Crested Wheat which has a more vigorous seeding habit and is more palatable than regular crested wheat grass was released for dry land areas; Regar, a brown grass with good re-growth characteristics was released for both dry and irrigated areas. Now we release foundation seed of both Nordan Crested Wheat and Regar brown grass, we also have foundation seed of Esky Sandpoint which is a legume that can be used instead of alfalfa.

HF: When you talk about a legume, what do you mean by that?

HM: Well, alfalfa is a legume and it is used for hay, a lot of cattle bloat on it if they don't handle it carefully. This Esky Sandpoint is also a legume and a lot of work has been done in Europe on Sandpoint, and also in Montana. We have been working with it several years testing out different varieties and the advantage of this, cattle like it real well and also they will not bloat on Sandpoint, so it's liked by a lot of farmers for pasture.

HF: Can you mix the two, the alfalfa and this other variety you mentioned?

HM: Yes, you can mix them. But, you'd have to be more careful when just, with Sandpoint alone. Sandpoint is a peculiar plant; it's not a very good competitor. It does real well when it's planted alone, but when it has to compete with other types of plants such as grass or grain or alfalfa it doesn't do as well as when it's seeded alone.

HF: Well now, has it become quite prevalent in the Upper Snake River Valley since?

HM: Well, it hasn't become too terrible and it's slowly being accepted, I don't know how far it will go. For fellows that have trouble with bloat, why they're using it, I don't know

whether it was be really used widespread because now we have a type of salt that has material in it that helps prevent bloat in cattle on alfalfa, so it's not quite as important now as it used to be.

HF: Well now, how does it store and prepare for winter feeding?

HM: It's handled just exactly like alfalfa.

HF: I see.

HM: It's a cut in a boot phage and you can bail it or store it bulk, but most of its bailed and just cut it just like alfalfa.

HF: Has there been much work on alfalfa, the alfalfa plant by the station?

HM: The only work that we've done is alfalfa varieties; we've tested all the various varieties in nurseries that have been developed and we've found [inaudible] which give a heavy first crop is the best alfalfa to raise on a dry farm. We only get one crop anyway and we want to get the heavy first crop and that's why [inaudible].

HF: Now, ordinarily in the Teton Basin area, because of the high elevation and possibly limited water supply and so on, they usually only get one full good crop anyway, even on irrigated land.

HM: That's right.

HF: Now, is there anything being done to make it possible for them to maybe get two crops or...

HM: No, our, that's pretty well controlled by the weather is right. We have not been working on that. Our primary purpose is as I said earlier, at the station is production of foundation grains and while we do test all of these other things such as alfalfa varieties in nurseries and cereal varieties, our primary purpose is production of foundation grains and grass and potatoes.

HF: Now, in talking about foundation grasses, how do you go about doing that? Is the beginning grass taken and placed in a little plot and taken care of....maybe you could sort of detail—

HM: We plant, what we do is fall [inaudible] ground. During the spring and work it down and make a firm seed then, then we usually roll it. We plant our grass as an ordinary grains will, they're all 35 inches apart. We cultivate this and spray till we control it for the first year, we don't get a crop the first year we seed it. The second year we get a crop. As soon as the grass is just about right, no before, not when it's dead right, but when it's just starting to turn about like when they used to bind grain in the old days, we go in and windrow this and then when it's dry we'll come in and pick it up with the combine. We

have a pickup on our combine; we pick it up and combine it. We sort it in our store house and keep it there. This is allocated to various certified growers through out foundation seed allocation committee. All of grain in the station, grain, grasses, potatoes, is allocated through the foundation seed allocation committee. This is part of the Idaho Conservation Program.

HF: I noted that in the various communities different response groups have the *Grassman of the Year*. Did this have anything to do with what you're telling about propagating grasses and making a better grass? Or in maybe a farmer decides that he's going to experiment with some of these foundation grasses and develop them and...

HM: Well, we do not have anything directly to do with these *Grassman of the Year* programs, but indirectly through the plant materials center of Aberdeen where they have these and through the soil conservation districts which are supporting and encouraging these *Grassman of the Year* programs to improve the foliage program in the counties through this *Grassmen of the Year*. A few new varieties such as the Regar and the fellows that rotate their grazing and plant these new varieties and just do a good general job over all farming, these are the ones they pick for *Grassman of the Year*.

HF: In your opinion, and I can appreciate that it might be kind of a planted opinion favoring of your work of course, do you feel that what the experiment station has done in foundation work in grasses has been of tremendous aide and benefit to the farmers in the Upper Snake River Valley say the last 10 years?

HM: Yes, I sincerely do. I think these two grasses that I mentioned were released Regar has just in the last two years. The demand for the seed has been greatly greater than the supply and it is replacing the old Machars we've grown almost entirely in all the past years in hay seeding. On the dry farm, grass seeding for crusted wheat is used for pasture. Nordan Crusted is about the only grass that is used at the present time, so we have had quite a part in the effect of these grasses in the program.

HF: Now these two particular ones you mentioned, is this seemed to be especially good for dairy stalk or for beef or does that make any difference?

HM: Well, for under irrigation, the Regar is the one that is the most important, it is good for both dairy and beef, it's a good pasture grass simply because the old Manchar when it was pastured off once it didn't re-grow, didn't give them any re-growth. This Regar, that's where it derived its name, is from its re-growth. This Regar, after it's pastured off once come right back and gives them pasture in the summertime.

HF: And even late fall I'd guess.

HM: Even late fall. They have a much better pasture program than they had before.

HF: Now this would be a good grass maybe also for sheep?

HM: Yes, it would be good for sheep, under the dry land condition probably. However, when it's a smaller pasture than

SIDE TWO

HF: Continuing the subject, the history of the Tetonia Experiment Station.

HM: I always wondered whether people noticed this shelter belt, but when we took out this row of golden willow because of disease. I don't know how many people stopped that day and asked us if we were taking out the whole shelter belt. They didn't want us to take the shelter belt out because they said it was the only green thing they could see when they went through the dry farm section. We assured them of course that we were only taking out the Golden Willows and that the rest of them would remain.

HF: What variety of trees or shrubs constituted this shelter belt?

HM: Well, we had Siberian Pea. We had the Golden Willow, Scotch Pine, Spruce, and the Colorado Blue Spruce, the native spruce and the Colorado Blue Spruce.

HF: Did those starts come probably from the University of Idaho?

HM: Yes, they also started from the, on the shelter belt we started from trees that we got from the University in their tree planting program. In part of the yard there, are some big Blue Spruce and Elms that was moved up from the old station and they are a pretty good size now, but they were moved up from the old station when the buildings from 1932, here in 1939 were moved up to the highway.

HF: Well now, in your little brief history, you mention that Mr. Moss, I think you stated,

HM: Mr. W. A. Moss, yes.

HF: W. A. Moss was the first superintendent of the station?

HM: Yes.

HF: Could you tell us a little something about his background and his characteristics, something about his personality and maybe any particular contribution that he made to the station?

HM: Well, I think all of the farmers, all of the older farmers in, dry farmers of Southeastern Idaho remember Mr. Moss as Bill, everybody called him, Bill and he was well-liked. Bill Moss in the high altitude experiment station seemed to be made for each other. For the 32 years from 1918 to 1950, each was a dominant influence on the other. Each was a pioneer intent upon opening up the vast opportunities of the soil. He was born in Lincoln, Kansas. He graduated from Kansas State Agriculture College and came west. He tried his luck in Montana and found that college know-how had no control over the

weather, a severe drought cost him everything he had invested. So in 1916 he moved to Felt, Idaho and he married Sylvia Myers who was teaching at Tetonia and visiting relatives there at Felt. That was in 1918 and that same year he was appointed superintendent of the new Agriculture Experiment Station. He was superintendent from that time until 1951. Bill was well-known for the work that he did with foliage there and also with variety testing and he also did work with potatoes and dry land potatoes and forages, alfalfas.

HF: Now you started, you took his place then in 1951?

HM: In 1951, yes.

HF: Would you kindly read for us Hugh what the little folder says about yourself.

HM: I was appointed superintendent of Tetonia Station January 1, 1951. I was born at Great Falls, Montana and moved soon thereafter. Of course I had nothing to do with the moving, I was 2 years old and my folks moved to Aberdeen, Idaho. I graduated from Aberdeen high school in 1931 and then entered the University of Idaho. I graduated from there with a B.S. in Agronomy in 1935. I went to work for the Soil Conservation Service at Worley, Idaho and then Washington. During that period then, I married Roberta Stevens. 1938, I started working for the research division of the Soil Conservation Service and was stationed at the Aberdeen branch station, but the work was conducted at Tetonia branch station. The only office facilities that the University had were at the Aberdeen branch station. During winter's, I transferred back to Moscow and worked on my Master's degree, and I obtained this in 1940. While at the SCS, I worked mainly with tillage and I had quite a few Golden's on tillage in Texas, based on my work in Tetonia.

HF: What would you consider is your; oh, the particular facets in which you're mainly trained or mostly interested in there at the station, I mean, is that a fair question?

HM: Well, yes, I'm, of course, when I was working for the research division, my principle interest at that time was tillage work which was what I was doing there at the time, but since I've been working with the University as superintendent then my principle interest of course has been the overall program of the station and its contribution to the farmers. Primarily, this foundation seed grain program and the foundation seed potato program have been mine, along with the cereal testing of these various varieties that has been my principle interest.

HF: Couple of; 3 more questions before we close that I'd like to put to you, is it a common practice for the farmers in the area, particularly there at Clementsville, and maybe around Tetonia to drop in and get some counsel, suggestions, recommendations from you?

HM: Yes, we always have quite a number of visitors, they're always welcome. We used to have field days every year, but we found that it was much repetition from year to year so we have discontinued doing that and we only have them occasionally. This year was the first year that we've had a field day for about five years. I think that contributes to the big

turn out that we just had. We find that all of the farmers that are interested, not only around the station but as far away as Malad and Preston. And those dry farms areas there, that the data that we obtain from Tetonia station is applicable that far away.

HF: Do the farmers in the, say adjoining farmers, neighboring farmers come over and inspect the growing foundation crops, see how things are going along, do they take a real genuine interest in these things?

HM: Yes, they're always interested in coming over and looking at our crops to see how ours is doing compared to theirs or comparing varieties and what some of the new varieties look like and what they might expect; what might be coming up.

HF: Now, for example, if you, or some of these varieties that you've mentioned here in the interview, if those come out say in 1969, they're released in 1969, can these farmers, say in Clementsville, expect some of that seed maybe to come to them within maybe the next year or two after that?

HM: Yes, if we release it in say 1969, it probably would take us about two years to get sufficient seed built up to where adjoining farmers could get some. We try to, most of the foundation seed as I mentioned earlier is allocated to certified growers so that we can get a faster build up of seed for the other commercial growers, but we see to it that the neighboring farmers are able to obtain seed from the station because there aren't many certified dry land farmers, it's pretty difficult to raise certified seed under dry land conditions. So, we have seed available for the adjoining farmers.

HF: Now, for example, in Teton Valley, would you care to mention those who perhaps are and have been these allocated farmers to grow some of these crops, some of these certified ones that get this thing going?

HM: I just couldn't say off hand, if I had my seed list I could give you a run-down of the farmers in the area that are getting seed. I know the Kunz's have bought seed, and Asa Drake has bought seed, and, there's quite a number of them, but I just off hand, I just can't.

HF: And there would be of course a number of these in the St. Anthony area too.

HM: And the Ashton area.

HF: Ashton area. And this would be particularly so with the foundation seed potatoes I guess wouldn't it?

HM: Yes, it would. There's an awful lot of our seed goes into the Ashton area, Mackay area, and also into the Grace area. Those are the 3 principle seed producing areas in the State.

HF: Now, with reference to the storage of particularly, the potatoes, you mention that you have a storage facility there for the potatoes you produce. Is this some type of unique storage that will be adapted maybe and used by other farmers?

HM: No, this is the old. This potato cellar was built when Bill Moss was superintendent. It's the old type, however, we are going to replace it within the next two years, we hope. It has been there since 1940 and it is, last year one of the walls fell in one end and we had to replace it. We plan on rebuilding it, with, what you mentioned, a type which we feel is, should be used by farmers in the area.

HF: That would be more appropriate to keeping the potatoes in a firm storage condition?

HM: We don't have a ventilating system in our present storage, and in the new one, we plan on having a ventilation system and everything that we need to help preserve the crop.

HF: Mr. McKay, how much in the way of money does it cost to operate that station annually? This would be the cost of the, all the machinery, your operating expense, labor and so on, payment of salaries, etc. Just, what type of a budget do you have annually?

HM: Well, our budget annually, I haven't figured it up exactly, but it would be roughly about \$45,000 a year. That is counting our income, I didn't know what the total. That total is not appropriate from the state, but our income is counted into that. Our income is part of our budget, but there's probably a total of about \$45,000.

HF: That means, financially, quite a lot to the valley there doesn't it?

HM: Yes, it does.

HF: Tetonia area?

HM: Yes it does. We purchase all of our supplies in the area. We have requisitions in Driggs and Tetonia and St. Anthony, so all of the communities are affected to some extent.

HF: One more question comes to mind that perhaps should be put before we close this interview. Surely as a trained researcher, you must call upon other researchers through the Department of Agriculture, if this is so, just how extensive is the, is this program of cooperating with other stations and other experts in other various fields?

HM: That is certainly true, and to serve the farmers of the state of Idaho better, much of the work at Tetonia station is cooperative with signers from other branch stations and the home station at Moscow. It would not be possible for Tetonia Station to personally carry on all the projects that are being conducted without this help. It would also be too costly to hire additional technicians for the Tetonia Station.

Some of the help and cooperation we get are from the following people: from the Aberdeen Station, Dr. Joe Pavey, Potato Program, Dr. D.W. Sunderman, wheat breeder.

Both of these men are U.S. Department of Agriculture personnel; Dr. Darrel M. Wheazenburg, who's also U.S. Department of Agriculture personnel; Ralph Hayes for barley and oat breeders, Martin Wise who is a cereal chemist and runs all of our analysis on our wheat varieties for milling and baking. Harold Harris and Chuck Powers with plant materials center of the Soil Conservation Service, and from the home station of Moscow we have Dr. Don Huber who is doing a lot of root ground and some studies with money from the wheat commission, he has allocated money from the wheat commission and he's been working on root rock as well as Somo. Dr. Sunderman has also been working on the somo program from a different standpoint, that is from breeding resistance into our present varieties. But Dr. Huber from Moscow has been working on the root rocks also, and root rock is becoming quite a problem in our area, and this is being caused by some of the early seeding that we are doing. And also Dr. Warren Pope, wheat breeder, has been at Moscow for quite a number of years, has got a lot of work done on the release of varieties. He was responsible for breeding of Tendoil winter wheat and he made the selection of Itana 65 and also Idid 59; the wheats that we released and increased at Tetonia Station.

Now without the help of all these people, we wouldn't be able to carry on the program that we're doing. Some of the other programs in cooperation with people are [inaudible] and also we're carrying on the Rexburg bench here. Fertilizer trials on the Dick Smith farm on Purelin barley for determining the amount of nitrogen that we can put on Purelin barley without increasing the protein too high and see how high of yields we can get, and how it effects the malting quality. We certainly appreciate the cooperation we get from farmers when we go on their places to conduct off-station trials which we do in quite a number of areas.

HF: Well now, Mr. McKay, in this cooperation effort, just what mechanics are followed through in order to get these cooperation? Do these men have to come to the station periodically to give their skill and their expert counsel and advice, or do you take the seeds to where they are and it's done in the laboratory, or just how, what are the mechanics followed?

HM: No, these men are actually assigned while they're station at the Aberdeen station, they come actually to the Tetonia station to work, like in our nursery, cereal nurseries, they'll come up and help plant and help harvest, help take notes, and cooperate with us physically actually, in doing the field work so in the data. And then we share the data back and forth and also on with Dr. Pope and Dr. Huber at Moscow, they come down here and put out lots of organisms on Somo plots, chemicals and stuff that we check out. They come down and actually help with the program. We couldn't do it if they didn't come down and actually help us; we just wouldn't have the time to get it all done. So they actually come to the Tetonia Station and help us.

HF: That's very interesting. Now, as a Layman, of course, here the farmers talk in the spring time, the dry farmers, "Boy winter's been bad this year on the killing of fall grains." Is that problem becoming increasingly serious to the farmers, or is some real progress being made to eliminate it?

HM: Well we are making real good progress. We've been going at it from two different approaches, of course, Dr. Sunderman and his breeding program has been looking for a variety of wheat that is resistant to it, and in 1958 we had the world collection of wheats at the Tetonia station, world collection of winter wheats. That's comprised of, and that time, there was 3, 860 different varieties of winter wheats and we had these all in rows at the station and what we were looking for was just one, we didn't care which one it was, that would show resistance to snow mold. Out of this testing we came up with two varieties that showed resistance. While they had good resistance to snow mold, their quality was terrible and they couldn't be used. Since then, we've been crossing this on our unknown varieties and trying to get a variety that is resistant to snow mold and still has good quality.

Now it's kind of difficult because it's easy enough to transfer this resistance to white wheat, which these varieties are, but for some reason gene linkage of this resistance is difficult to get onto a hard red winter wheat, and we're having a little trouble getting it. Well, now, we have two or three selections that show real promise and in past in testing different fungicides, this snow mold isn't nearly a soil fungus, it is in the soil and we've found that mercury, which is certainly a sea treatment for controlling smut also controls snow mold. But it's rather expensive to use and the farmers have not used it too much except in isolated areas that they know is going to winter kill every year, and we have been able to obtain good control. We also found that following different rotations, such as following alfalfa, snow mold was much less.

HF: How about the amount of snow in a season. The, say, how early it comes or how late it lies on the ground, does this have any effect?

HM: It has a very indefinite effect. Now if snow comes early before the ground freezes and stays late, we expect a lot of snow mold. Now the reason for this is this soil organism needs a temperature of around 36-40 degrees to be active, and if the ground is frozen, therefore it's below 32 degrees; it's too cold for this organism to become active. So therefore in a year when we don't have too much snow and the ground is frozen down fairly deep and the snow don't stay too long in the spring, we don't have too much snow mold. But when we have a lot of snow cover, and the ground isn't froze and it's warmer than 32 degrees, why then we have a lot of snow mold.

HF: And the type of soil I guess has a bearing too, maybe

HM: Yes, we find that on the North slope in the heavier, better soil class we have more snow mold.

HF: That's very interesting. What type of soil do we have the Tetonia area? I mean, if you're going to classify the soil, say in the Clementsville area dry farm, what type of soil—

HM: Its silt loam, with a small amount of sand in it, but it's mostly a silt loam.

HF: Residual, as such?

HM: No, it's windblown.

HF: It's windblown?

HM: It is all wind-laid.

HF: Now, how about the valley soil; say in the Driggs area on the Mountains along there, is that, come in there, do washing there?

HM: Most of the valley soil is brought in through washing yes.

HF: And laid-down?

HM: And laid-down.

HF: But the Clementsville area is pretty much deposited through wind action?

HM: Straight wind action, yes.

HF: And this is comparable to maybe what it was in the Palouse area, up in Moscow?

HM: The hills aren't quite so steep, but it's comparable.

HF: Is that area up there basically basalt rock way deep, or is it something else in the –

HM: Yes, I think most of the wells that have been drilled; that's what they've found in Basalt rock. I know when we drilled our well at the station there; we had 55 feet of soil before we hit rock.

HF: That's fantastic. Can one guess where has this come in? What was the origin of this soil?

HM: I wouldn't know, it was just blown in, wind laid I know, I wouldn't know where the origin of it was.

HF: That's interesting. Well I appreciate again, the opportunity of having you come to the office this evening that we might conduct this interview. I thank you for your time and for the knowledge of the subject that you have presented here to be shared by someone else maybe one day who might wish to go through this and read this material.

HM: Thank you.