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Partial Contents:

Crop Dusting on the Palouse

The Terteling Family

The Ellis Branch Line

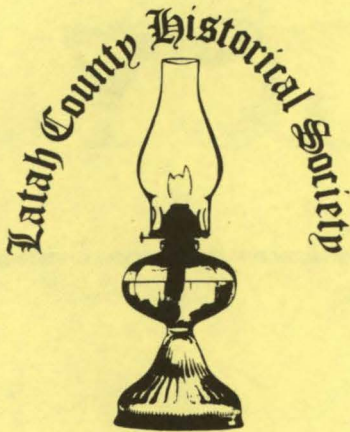
The Uncovered Wagon, part 6



Ron Fountain spraying a Palouse farm in his Grumman Ag-Cat

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Crop Dusting in the Palouse

by Suzanne Myklebust

Two primary concerns farmers have always had are soil fertility and control of weeds and pests. Farmers of the Palouse are no exception. Their battle began in the early 1900s with the influx of new settlers and the spread of railroads into this area. Prior to that period, the crops were free from rust, weeds, flies, and other insects. Some of the early weeds brought in by the settlers and the railroads included Russian thistle, wild oats, and Jim Hill mustard. They were a serious menace robbing the soil of moisture and nutrients needed by the crops.

Russian thistle, a weed that when it matured broke loose and tumbled in the wind, could be controlled by cutting the plants just before the seeds opened. Jim Hill mustard was controlled to some extent by hoeing or plowing under before the seed pods formed. If the problem was out of control, the crop was mowed and burned. A crude method of curbing the growth of weeds was to simply run livestock on the stubble fields. Sometimes seeding times were altered to combat early pests but for the most part the control methods for both weeds and pests were all failures.

Fallowing was a practice that allowed the land to rest between crops. It gradually became part of the farming technique around 1885 but it was by no means a widespread practice. Several reasons for fallowing were brought forward at the time: it gave the ground a rest, helped restore plant food, conserved soil moisture, provided pasture for livestock, would bring wheat yields back up, and would help control weeds. However, Thomas Shaw, an early agricultural researcher, stated that fallowing was "no recuperation at all. The good crops resulting from fallowing the land are the outcome of clean tillage, and the retention of soil moisture. The basefallow cannot fertilize land." He suggested that fal-

low land be planted with legumes and plowed under before planting the fall wheat crop. This would add needed humus to the soil.

Decreases in soil fertility were so slight throughout the early decades that little was done to correct the problem. Due to the development of high yield, disease-resistant varieties of wheat, and because of the experiments of farmers in different planting techniques and times of planting, there was little difference in wheat yields in this area. In 1897, for example, the crop of wheat in the Palouse was enormous while the rest of the world experienced a small crop. It was hard to convince the farmers that they were depleting the soil of organic matter and nitrogen. They believed in the notion of G. H. Atkinson that Palouse soils were inexhaustible because the Basaltic rock under the soil would replace any minerals depleted by crops. As early as 1890, however, this idea was being questioned by two agricultural scientists, William Spillman and Thomas Shaw. Some concerned farmers were applying manure and some planted green manure crops such as sweet clover or alfalfa in the early years. Others were summerfallowing every third or fourth year, but fallowing alone would not bring back soil fertility. The fallow itself would end up with weeds and the farmers would end up tilling the fallow until it was pulverized by the frequent plowings.

Various types of cultivators were used in fallowing. One of the first implements used was the horse-drawn moldboard or "footburner" plows. Made up of a curved plate with a steel share bolted on to it, the plow turned over the furrow slice and cut roots 4-5 inches below the ground. The farmer would walk along side guiding the four to six horses usually used with the moldboard plow.

An early implement used to destroy weeds was called a weeder. Pulled by either horses or mules, one of the first models was a blade-type with the blades fastened at an angle to cut the roots underground. It plugged up easily causing the farmer to stop often to remove the clog of weeds. The first rod weeders were very simple; a bar or rod sat about three inches beneath the soil between runners and cut the weeds off at the roots. Two bars called a "slicker rod" were also used. Both, however, soon became clogged with weeds and had to be stopped every few feet and cleaned out. Then came an important innovation called the rotary rod weeder. This weeder had a frame between two wheels which was geared to a square rod that rotated under the surface. It also cut the weeds at their roots, but it did not clog as the earlier weeders had and was light enough for farmers to hitch several together to till a broad swath.

Along with the coming of the weeds were two fungus diseases affecting wheat: smut rust and stripe rust. Smut, which appeared in 1890, was also called "stinking smut." The smut balls would break open during harvest scattering spores through the grain. The spores clung to the wheat and survived in the soil. Smut could cause explosions and fires during threshing. This was due to the lack of moisture in the air, the large amount of smut in the wheat, and the tendency for smut and grain dust to ignite.

By 1915, stripe rust or yellow rust was reducing yields in wheat fields. This fungus multiplied by producing tiny spores which were spread by the wind from plant to plant. They germinated in the presence of moisture and began new infections which erupted, releasing more spores. Unchecked, stripe rust usually resulted in a 10-15 percent loss in yield.

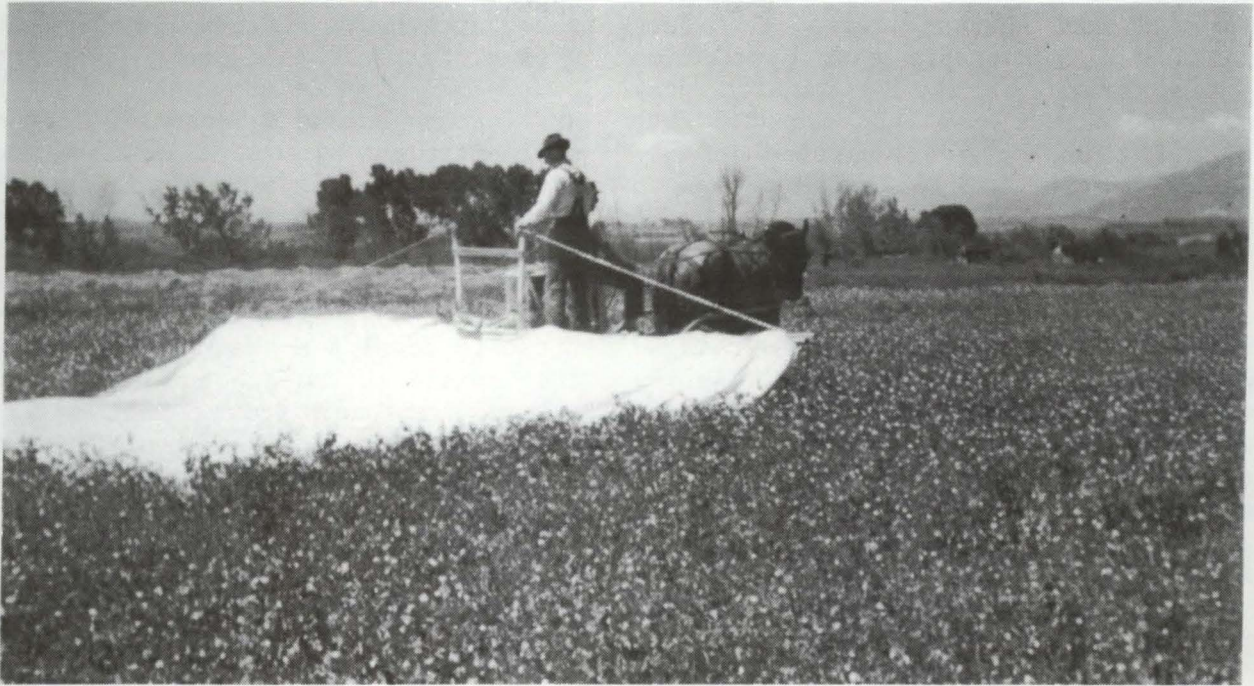
Although growing peas had been advocated as early as 1890 to help restore nitrogen to the wheat fields, it was not until 1913 that they appeared in the Palouse. Not only did peas put nitrogen back in the soil, but the pea vines and seeds con-

tained protein that made a highly nutritious stock feed when combined with oats, barley, or corn. Peas could also keep the land producing all the time instead of standing fallow. With the peas came the pea weevil which infected both the dry and green pea, feeding on the peas while they were still in the pod. Next to appear were several types of pea aphids and the pea leaf weevil which fed on the foliage.

An early way to contain the pea weevil was to use perimeter or border traps. Early planting of several rows of peas was done around the perimeter of the field. They were then plowed under when they became infested with the pea weevil. This method proved to be less than effective as the weevil wintered over in the nearby underbrush and forested land next to many fields and would appear in abundance the following spring.

By the 1940s Rotenone dust was being used to kill the pea weevil. Machines made up of an engine, hopper, blower, dusting boom, wheels, and a canvas hood and skirt were rigged to get the dust on to the pea vines in a quick and efficient manner. The Rotenone dust was mixed with the air stream in the tubing and nozzles and distributed under the hood in a dry fog, billowing over the plants inhibiting the pea weevil.

Although some chemicals such as arsenic, sulfur, and carbon bisulfide were being used in the 1920s and 1930s, their use and application was fairly informal and experimental. Wheat seeds were treated with copper sulphate to kill diseases on the seeds before planting; pea seeds were treated with carbon bisulfide to kill the pea weevils or pea aphids. Farmers also experimented with off-the-shelf compounds to control weeds and pests such as soap, turpentine, vinegar, and kerosene. These were applied either by broadcasting or by one of several early types of sprayers, such as the barrel sprayer which used ordinary force or suction pump and the portable tank sprayer which used compressed air. Another widely used appli-



A dusting hood arrangement, as explained on page 2



This spidery hose sprayer from Southern Idaho shows the ingenuity a farmer would exercise in combatting insect enemies

cator was the knapsack sprayer. This consisted of a portable tank carried on the back or hip with the liquid spray running through a hose into a handle with a nozzle. Pumping was sometimes done by means of sliding handles on an extension rod. These sprayers were fine for small areas or for orchard spraying, but were not the most efficient for spraying acres of wheat or peas! Before long, however, large tanks were being mounted on wagon beds and pulled through the crops by horses and tractors.

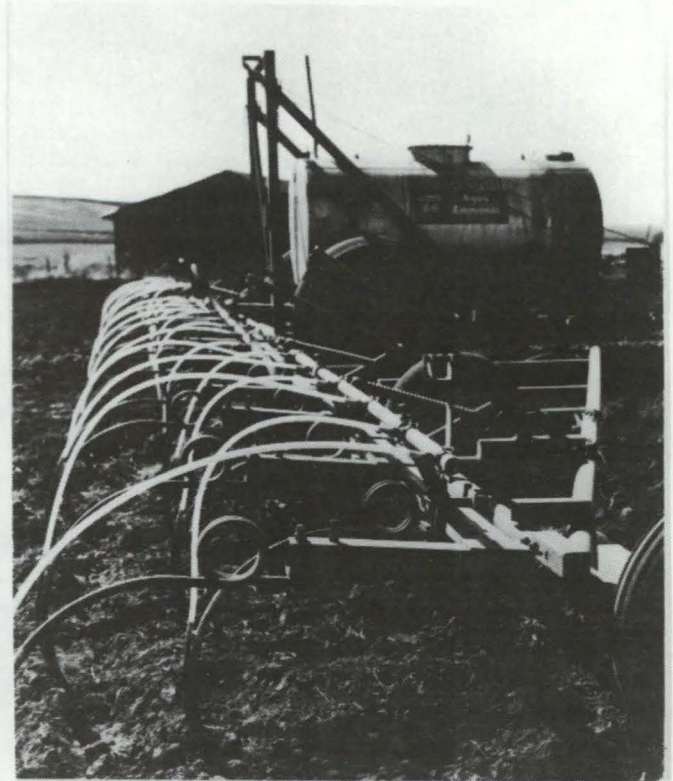
A turning point in the use of chemicals came during World War II. Research by chemical companies and advances in technology were producing many new synthetic compounds. Among them were the first commercial nitrogen fertilizers which appeared in the United States in 1945. The use of synthetic fertilizers had a demonstrable effect on farm income. It did not take long for the farmers to be convinced of the value of nitrogen fertilizer applications. Other new products were 2-4-D, MCPA, Silvex, and 2-4-5-T. These petroleum-based chemicals were far superior and were selective in their effect. They could kill specific weeds or insects without hurting the crops. A famous one was DDT, the first effective and selective herbicide used in the United States.

After the war the already geared-up chemical companies shifted their focus to the American agricultural scene. With the help of researchers and agricultural scientists at land grant colleges and universities, the farmers were soon engulfed with literature and other propaganda on the new chemicals.

Old implements were quickly adapted and machines invented to get these solutions on to the fields. Sprayers, dusters, and mist-blowers became familiar sights on the Palouse hills. The Palouse farmer was very ingenious when it came to inventing these machines. Spray rigs and pea dusters were constructed in their machine shops using parts from tractors, wagons, and cultivators. Today, a few remnants of the old machines can be spotted around

some farmsteads but usually farmers recycled the parts into other equipment.

Applicators became more sophisticated and more efficient in applying the herbicides, pesticides, and fertilizers. One of the most successful machines invented was a fertilizer applicator by the McGregor Company. When anhydrous ammonia first became available, they were the first to develop a shank machine to apply the fertilizer beneath the soil. According to Alexander McGregor in his book, Counting Sheep, "Sherman McGregor and fellow store clerk, Cliff Robbins, developed makeshift techniques for handling the acrid, pressurized gas. They custom-fitted a derrick to the back of a two-ton flatbed truck, placed heavy-duty 300 gallon tanks on the vehicle and pumped them full of ammonia from a railroad tank car, and hauled them to the field where a tank was unloaded on to a converted Graham-Hoeme plow that had tubes running down the plowshares to inject the gas six inches underground."



A McGregor-style underground applicator

Today, machines are being built that will plow, plant, apply fertilizers, herbicides, and pesticides all in one operation. Farmers can rent applicators from several agricultural chemical businesses. It is expensive machinery and it is cheaper for the farmer to rent the equipment than to own it. Agricultural chemical companies advise the farmers on what chemicals to use, and recommend the dosages and times for applications. Information concerning which compounds would not be safe to use, or which might damage a particular crop is also available, but the farmer is ultimately responsible for mixing and getting the chemicals on to the fields in the correct proportions. The entrance of herbicides into plants, their movement after entry, and their toxic effect on the plant is very complex. Knowledge of these factors is very beneficial to all personnel involved with weed control. Farmers and agribusiness persons alike need to know some morphology, physiology, and anatomy of the plants.

Most of the chemical compounds used today are applied sparingly and as seldom as possible, as most are expensive and there is concern over the impact of these chemicals on the environment. This concern is not a new phenomenon. There is a long history of regulation and control of chemical use beginning with the Insecticide Act of 1910. Safety regulations are very stringent and the laws have changed to keep pace with the development of new chemical formulations and increasing knowledge of their dangers and possible abuses.

The USDA-administered Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) of 1947 stated that labeling must include chemical analysis, crop use, conditions of safe use, and health hazard, if any, on every compound being sold. Other legislation includes the 1954 Miller Pesticide Residue Amendment of the Federal Food, Drug, and Cosmetic Act; the Federal Environment Pesticide Control Act

of 1972; and the Environmental Protection Agency established in 1970. All distributors and applicators of agricultural chemicals must be licensed and can operate only under these most strict rules and regulations. However, government regulatory agencies and legislative bodies, both federal and state, have been accused of moving too slowly and allowing the release of potentially harmful chemicals before adequate research has been done. There are over 35,000 pesticides to be regulated and only one in twenty thousand pesticides tested ever makes it to the market. The time lag between filing of a petition for registration and granting a label has increased substantially in recent years. It now takes from seven to ten years to get a product registered and it costs approximately \$10-18 million to produce a pesticide.

In the use of agricultural chemicals the benefit versus the risk must be weighed. Scientists and researchers are experimenting with biological pest control; with new, less toxic compounds that break down rapidly; and with genetic engineering of plants. They continue to focus on the problems and the role of chemicals in the environment. Some recent studies in biological control have been encouraging. For example, the pea weevils do have some natural enemies such as the lace wing flies and these often keep the population low. But they cannot always be depended upon to arrive early enough to keep the weevils in check.

Until an effective and economical alternative can be found, the present use and dependency on agricultural chemicals will likely continue. Assistant Secretary of Agriculture Orville G. Bentley stated in his recent report, Needs Assessment for the Food and Agricultural Sciences:

Tomorrow's gain in scientific agriculture has its foundation in the strength and vitality of today's science and education community.

Aerial "Crop Dusters"

Although the words "crop duster" originally meant any ground machinery that applied fertilizer or chemical "dust" to crops, today we think of a crop duster as a pilot and his aircraft. In fact, there are planes that are best known as "Crop Dusters."

Aerial crop dusting had its beginnings around 1923 when Huff-Daland Dusters Inc. paid pilots to grind dust out of a hopper from a biplane. The dust was being used to kill the boll weevil in the cotton fields of Mississippi.

The Stearman, one of the early planes to be used as a crop duster, was named for Lloyd Calton Stearman, owner of the Stear-

man Aircraft Company in Wichita, Kansas. The company later became a subsidiary of Boeing. Boeing called the plane a "Kaydet" and as such it was used as a training plane for both the U.S. Army and Navy. About 8,000 planes (Model 75) were built between 1935 and 1945. Many young fighter, bomber, and pursuit pilots were trained in the Stearman. It was suggested that "If you could cut the cheese in a Stearman, you could fly anything."

After the war about 4,000 were converted to crop dusters. Bigger, more powerful engines were installed and the Stearman along with other early planes such as the Cubs became the "test bed" for many designs and experiments. Pumps, spray booms, nozzles, and hoppers were added for holding the sprays and fertilizers. Some worked and some did not.



Three Stearman Kaydet airplanes converted for aerial spraying by Pete Fountain and associates, on the tarmac at the Pullman-Moscow airport

Farmers soon saw that aerial spraying handled their weed and pest problems faster and earlier in the spring when the ground was too wet for their ground equipment. Also, when time was a factor, aerial spraying was more effective against certain pests. No pea plants were destroyed as they had been with the wheels and lugs of the ground machines. Planes could spray 6-7 acres per minute depending on the chemicals being sprayed and the speed of the airplane.

Aerial crop dusting began in this area in the late 1940s. The first crop duster pilots came up from California to the Ellensburg and Walla Walla area then to the Palouse. Most were former combat pilots. However, agricultural flying required other special skills. Low-level flying involved such hazards as power lines, fences, and trees. The aircraft took off low and slow when loaded and usually had to take off and land on dirt strips or graveled country roads.

Fountain's Flying Service, owned by Pete Fountain, was one of the first in the Palouse to begin aerial spraying. Pete began flying in 1937 and trained student pilots at Washington State College and the University of Idaho during the post-war years. He started agricultural flying in the late 1940s using the Piper Cub J-3 and the Boeing Stearman. These aircraft had to be converted into spray planes and Pete and his crews were often the inventors of some of the equipment including various loading devices.

In 1962, a new generation airplane was built in Afton, Wyoming, called the Callair. It was especially designed for spraying. The hopper for the chemicals was in front of the cockpit and the pilot had greater visibility than had been available in the older planes. Pete bought the first eight Callairs made, making them the first low wing aircraft in our area.

Through the years Pete Fountain and his wife Ella have seen many changes in their business. He and his sons have become experts not only as pilots but as agri-

cultural chemical specialists. According to Pete, "It's getting more complicated and more dangerous and less rewarding than it used to be." They attend seminars and schools to learn the newest information on the chemicals they apply. Knowing the new regulations and restrictions and keeping up with the latest in aerial spray equipment occupies most of the off season.

Under most state laws, Washington and Idaho included, the aerial applicator operator is required to keep records of the job, time completed, date, wind velocity and temperature, and amount of pesticide applied. He also must note anything unusual that occurred during application such as a gust of wind. These records are kept for five years.

Today, with their new aircraft, sophisticated equipment, and specialized chemicals the agricultural pilots are spraying approximately 180 million acres of United States crops annually. With over 10,000 planes flying there were only twelve fatal accidents in 1983 involving crop dusters and their ground crews. Clyde Tounela, a former Navy flight safety expert, says of the crop duster's skill: "Outside of carrier pilots, I don't know of better aviators in the world."

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Oral history interviews as follows:

Thomas Wahl, by Sam Schrage, L.C.H.S.
Pete Fountain by Suzanne Myklebust, L.C.H.S., and others by S. Myklebust: Bob Boettcher, Sam Fleener, Homer Futter, Hugh Homan, Ed McGreevy, and Mike Sodorff.



Brand New Callairs

The Moscow Sky Ranch And Its Role in Crop-Dusting

Pete Fountain, local aviation entrepreneur, was interviewed by Ms. Suzanne Myklebust, as part of a "History of Crop-Dusting" project, sponsored by the Society and supported by the Association for the Humanities in Idaho.

Mr. Fountain first learned to fly when he was in Eugene, Oregon, working with his brother. He subsequently returned to Idaho to attend the University, and graduated in 1942. The Army was not interested in Pete's aviation experience as they preferred to train their own pilots from the ground up, so he went to work for one of the construction companies that was building airfields and army camps. A few years after the war, he founded the Moscow Sky Ranch, as much for his own satisfaction as for anything else; however, as it turned out, it happily resulted in determining his lifetime vocation. He started as an instructor of student pilots, but soon became involved in crop-dusting activities, and students became a sideline to fill in those months when crop-dusting was out of season. The following article is slightly edited, but firmly retains the essence of Pete's "oral history" interview.

THE BEGINNING

Did you get your training in the army?

I flew before the war, but I didn't qualify for pilot in the war because I had previous training and they wanted to start their pilots from scratch. So I didn't get in on the program - I wasn't in the service. I trained students afterwards. GI students mostly.

From here in Moscow?

Yeah, from here [the Sky Ranch was located off of Highway 95 just south of Moscow]

and later from Pullman/Moscow airport. The first cropdusters (later, agricultural pilots) came in mainly following the pea plantings. They were hired by Marsh Aviation, a large commercial company from Arizona. As I recall, the people who worked with the dry peas flew in from Walla Walla. They came in little open Cubs, one or two at a time, and they landed in the fields and put dust--20% DDT dust--in the hopper in back of the pilot right in the field and the farmer helped load. The farmer indicated where he wanted sprayed, and the pilot would go out and bounce around the hills in the Cub and scatter this dry dust instead of using the tarp and tractor dragging it through the fields. One of the things that was conducive to the use of the aircraft was that the green pea and the dry pea people [from the canning factory] showed by measurement how many pea plants were killed by the wheels of the ground duster. They added those up and indicated to the farmer on paper--showing him how many peas he was losing by using the ground rigs and crushing the plants. Also the element of time was real important. When we were ready to sting--sting the pods after the blossoms came out--there was only a short time in which you could move and you couldn't move that fast with a ground duster. Another thing--the weather affected the dust. Wind and rain would wash the dust off the plant and they would lose the effect of it in two days or maybe in one day. Then Stauffer came out with a paste--Stauffer Chemical Company came out with a paste that could be sprayed on and that's what really made the industry. The paste could be sprayed on and it would stick on the plant and the blossom and give the plant protection for so much as ten days or two weeks.

So that's what you started spraying out the plane then.

When you started DDT paste, the paste especially was the most important thing because it would stick on the plant and it had killing power until the sun broke it down. But the first DDT came in paste buckets--five gallon buckets--and it was hard to mix because for the quality of making it stick on the plant, it made it hard to suspend in water. I remember mixing the first experimental stuff with my hand in an open barrel and pumping it into the airplane. Then green pea people came to my door and asked me to spray these fields in the Palouse area with my Cub, so I followed the crew--the wheel crew--around and they checked the fields and they loaded my airplane and I flew out of the fields and out of roads, any place I could land the airplane, and they helped pump the spray in the airplane and then they would go out and flag for the airplane. At that time with a little airplane we didn't mark the field with our wheels because we didn't have the power and weight to plow through the crop. The boom would catch in the crop and it would wreck the airplane. So later on as we got into the Stearman, the surplus World War II planes, the bi-planes with the 450 horsepower engines, we could plow through the crop with our wheels and they were sturdy enough to stand the banging and you could dispense with the ground crew then. They didn't have to stand out there and mark your fields for you.

What was the spray mixed in? How did they mix the spray?

At first with the Cub, when I flew out of the fields we had an open barrel and a hand pump to circulate it and then it was pumped through a small hose into the hopper of the airplane.

Was it carried on the back of a truck then?

A pickup truck--a small pickup that would go out into the fields. Over in Anatone country we flew out of a little narrow road where only your wheels would fit lots of times. We had an advantage with the Cub--it being a light aircraft you had an

advantage of not necessarily carrying so much water. We would get right close to the crop with it and it did a real good job with a small amount of water whereas the bigger planes with the bigger companies that came in with Marsh Aviation from Arizona--it was a big outfit and sent big airplanes in here--had to stay high and carry lots of water to get the chemical down to the crop. It was frustrating to those people to have to land at airports and carry distances with heavy loads to keep up with the little Cub that was out in the field behaving like a helicopter putting right close to the crop. And of course gradually the business grew and more and more people came into it and it got more systematic.

So the Cubs were the first planes that you used in cropdusting.

They were the first ones I used and they were the first ones that showed up around the Palouse. Some of the early pilots came in--one in particular that I remember--his name was Ted Barrett. He weighed about 90 pounds and he was a jet pilot and he came in with a light Cub and he wrecked two of them. He run one of them into a power line and turned one over in a plowed field and it burned and they just went and got another and went to work. They were inexpensive in those days. They were expendable. As long as the pilot survived, why they went back into the field and went to work again.

How much did a Cub cost back in the 40s? This is 1930?

Oh, \$800. It was later than that--between 1945 and 50. I think--originally those Cubs sold for \$999 with the small engine in them when they first came out. I think they got up to around \$1200, \$1400 used and then they'd convert them to this kind of work.

SPRAY PLANE CONVERSION

What kind of conversion did you have to do to make them spray planes?



Filling the hopper of a converted Piper J-3. Pete Fountain on the right.

They took the back seat out. The pilot sat on the front seat and they put a hopper in the back seat. With dust sometimes it was just a bag and they filled it from the top and it was dispersed out through the bottom of the airplane with a spreader. With the liquid they had a pump underneath the propeller of the airplane, back under the fuselage, and it had a plumbing system and it went to the tank and sprayed it out of booms that extended below the wings like they do now. But they jerry-rigged anything that they could rig up. Abe Buller at Orofino did the first fertilizing by throwing the stuff out the window of a Cub.

And of course then spraying by airplane was a lot faster, too, than using the horse and the wagon.

The time element was real important because the bugs could build up and sting within ten days and sometimes the weather would keep the farmer out of the field for ten days and the fields were so big that in those days it would take them ten days to cover the fields. At first they didn't spray the fields solid. Only the green pea people would spray the fields solid. They would border them. The weevil came from the outside of the field

and worked in and they overwintered in the bark of trees and clumps of grass. And as you controlled the weevil in the green peas, they would have you spray outside the border of the field and wherever there is any scab ground in the field or wherever there had been an old pea stack or anything where they might overwinter.

Well now, the conditions of spraying--it made a difference, too, what the wind was, moisture, and when you could spray?

Yes. The ground rigs were affected by rain. Sometimes it would wipe out their work shortly after it was done. But when the paste came in it would stick on through the rain and as long as you could get out there and get it on the crop. You were governed by weather because they couldn't check the bugs except in warm weather. That's another thing. The crews had to be out in the field checking for bugs in the edges and in the draws and as far into the field as the weevil would penetrate when the sun was hot. They would only fly then and they could only net them when it was warm enough. So they were restricted both in checking the fields and spraying the fields. The time element was real important. That brought the airplane into play even more. And also the use--it was widespread--the need for the service was so widespread and people weren't informed. They raised cloverseed in this area and between the cloverseed and the peas, there was great demand for control with DDT and later on with Parathion when the aphid began to move in. The aphid would come--they'd come at intervals of several years apart. The moist years would bring insects and then the cycle would bring the aphid in and then they would dry the crops up ahead of time and destroy them. Then there was a real emergency when the aphid came and prices were high and you flew poison and got paid well and they didn't care who flew --just so they got something on the fields. Usually airplanes from the lower country would follow the aphid in. They'd come from the lower country and move in and the airplanes would come with them and they'd park wherever they could and get anybody that they could to fly.

Was this aphid that was on the peas or was this the wheat?

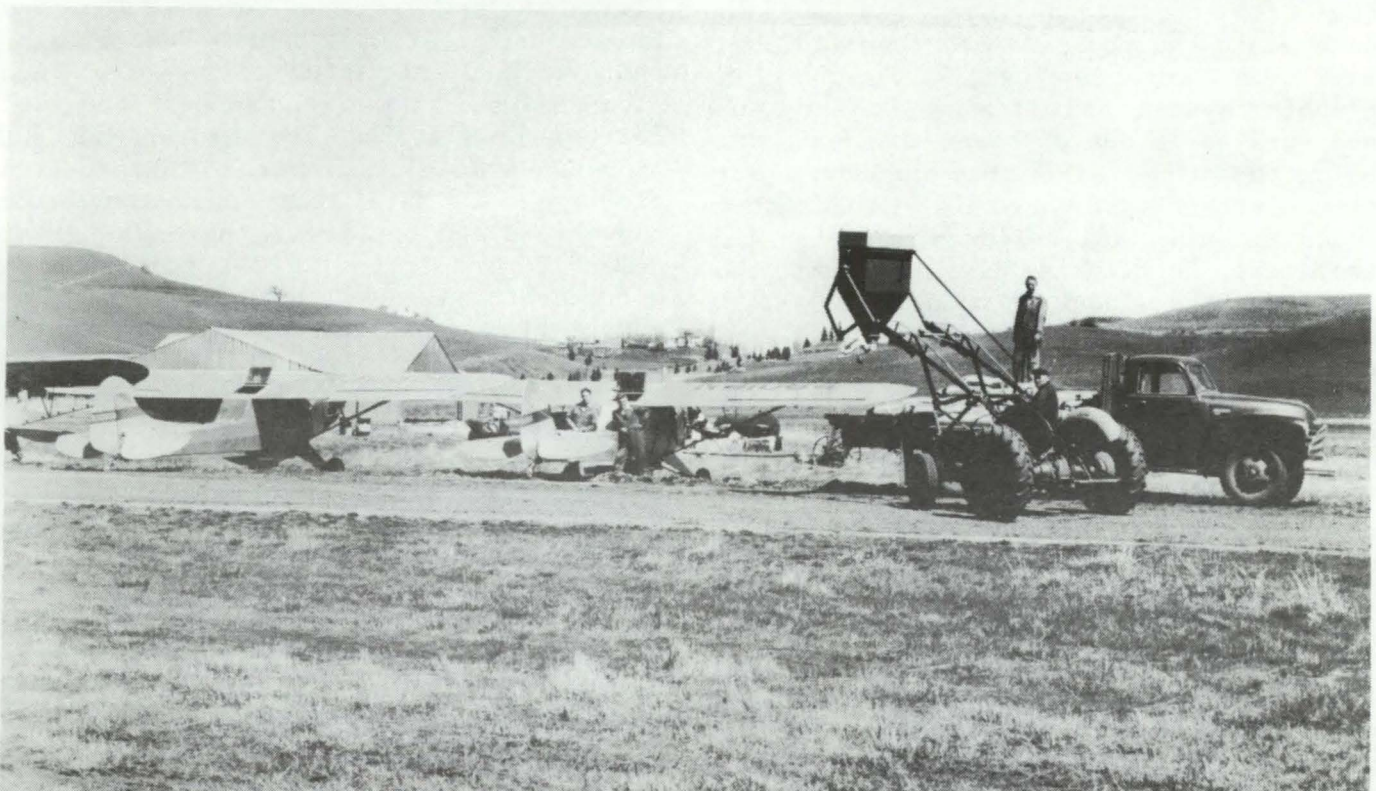
Mainly on peas. It was the peas that they protected in this area. And the clover.

THE USE OF DDT

Was the first thing you sprayed then DDT from the air?

It was DDT dust originally, loaded in the fields out of bags. It was 20% dust. They were supposed to put on one pound and they finally found they could get by with half a pound [an acre]. And the pilot was paid by the pound and the farmer bought the dust by the pound, and usually brought it to the fields themselves in the pickup. And then along with this, parallel to it, the use of 2-4D moved in from the wheat country around Ritzville and the Big Bend country. They were using high volatile ester over there to control Russian thistle. They had a woman instructor over at Lind that flew some of

the first 2-4D and I remember they got \$5 an acre for flying it, which was an astronomical price in those days. Later on as we got to hauling diesel oil and high volatile ester at less than a gallon to the acre we were flying for as low as 50 cents an acre. But you'd cover a lot of acres with a load of spray and then you'd cover the whole countryside. At that time we didn't know how much damage we were doing with the high volatile ester [later outlawed]. It would stay in the air and float across the fields and go clear into Montana. And gradually the farmers and the university people learned what was going on with the 2-4D and they began to restrict it and control it. We got our start with the weeds here because with the Cub and that high volatile ester we could kill weeds that the farmer had been trying to kill. One of them was Gromwell. It was a very tough weed to kill and they were frustrated trying to kill it with water. The water would run off the plant and they couldn't get to it early enough. The plant would be big and the seed was hard to separate from the wheat and it



Two Piper J-3s with hopper lids raised

would get in the wheat seed and spread through the fields and it was a very hard weed to control. When they found out that I could kill it with the airplane, why I was a pretty popular boy overnight --as soon as the word got around. But you didn't advertise. You didn't have the communication in those days that you do now. You couldn't just tomorrow go out and tell all the farmers that you could kill their weeds. They had to get it by word of mouth and then they had to see it. And sometimes it took a year or two for a farmer to come around and decide to pay the price. They used to say well they didn't want an air show, they just wanted somebody to do some work. And of course the stature of the pilot was a lot higher, more respected in those days. You weren't a dirty old truckdriver in those days. You were somebody who went out and rescued people and flew into the back country and did things. You were a swashbuckling type of character and you got a lot of credit for things you really didn't do. And there weren't very many around. Now there are a lot of experts that have just popped up overnight that are really good and skillful and well trained and well educated. The field is--you aren't a Mohammed Ali any more, a Jack Dempsey or any personal figure. You're just one of a group of professional people like the doctors. It's getting to be a profession like law and even like a physician in some cases.

Well, most of your spraying was done, then, in the spring as far as putting on like DDT.

Nearly all of it. As early as you could go in the spring. We started using dry fertilizer--there's another thing that made the business. They found that if they starting putting on this ammonia nitrate early in the spring, one of the first people that did it--McGregor Company was a dry fertilizer company to begin with and the farmers over in Whitman County began to learn through the university, through experiment, that if they put on 100 pounds of ammonia nitrate in

the spring it could increase their yield tremendously. And one of the first farmers that did it put on 200 pounds.

FERTILIZER

Is that 200 pounds an acre?

Two hundred pounds an acre early in the spring. He went off the deep end and he got amazing results and he kept it a secret. And then we got people--students --from the university who had studied agronomy under the professors and they found the key to it was ammonia nitrate or specific fertilizers early in the spring while the ground was still wet and it had to be real early because the growing season started before you could get on the ground. So they tried fall application, but the spring application in the Palouse was the important one because you had moisture and you had the temperature and the plant was there to get it to the roots. And top dressing early in the spring with a certain amount of nitrogen made the--they began to run over the ground with their ground applicators where they scattered the dry fertilizer, but they always had to wait for the wet spots and for the steep hills and by then the plants and the weeds were so big that they only got small benefit from the fertilizer. But if you got out there while the wind was still blowing and it was raining and you got out there right after a rain or right before and put on a small amount of nitrogen, it was dramatic. You could see the streaks of the airplane. You could see every place you'd gone. So top dressing in the spring became popular. And they learned through the university and through experiment to put as much nitrogen as they could on in the fall and then the moisture would take the nitrogen below to the plant root area as it sank down. In the spring they needed a boost in order to get the plant started to send the roots down to where the nitrogen that they put on in fall was. Now they're trying to do it with liquids by putting liquid fertilizer with their weed control on, but they're usually too late. The

weather doesn't let them get out there soon enough.

So the first fertilizer that you applied then was all in pellet form.

Pellets. Pellet form. And it became--it was a low pay thing, a high work, high volume, low pay thing. You had to carry a lot of weight and it took a lot of mechanism to put it in the airplane and you took a lot of trips and you beat your airplane and it was corrosive and you didn't want to do it. But you would do it in order to get their spraying--the rest of the spraying. And finally it got on to where it was a business of its own. You got more efficient. You got mechanisms to load it--you didn't load it by hand any more. And they got it in bulk and you got it so you could get it in the airplane and get the airplane off with a big load. You got better spreaders and you got more equipment and you got so you could handle the volume and then it began to become a business of its own. It's still not the most attractive business because it's the hardest work, but you can fly--

Putting on the fertilizer?

Yeah, putting on the dry fertilizer in the spring is--you have more latitude with it. You can fly it, if you have to, in the wind or in the wet weather, in weather that you don't dare use chemicals that will hurt the plants because it goes into the ground. See, all you can do is get it on the ground by hand. If you get it on a neighbor it isn't so bad. It does him some good. It's more attractive for your peace of mind to fly in an airplane except for the tremendous heavy loads you carry. I don't know how much of the prattle you can use, and it isn't at all chronological.

That's okay. We don't care. What about some of the sprays that you use on wheat now? We've been talking about the peas--the dry and the green peas. Now when wheat came into this country, what kind of fertilizers or chemicals did you start using on the wheat?

This fertilizer that we're talking about did go on the wheat. They very seldom fertilized the peas. They might use sulphate on the peas if they used anything and then in those days they also used a real heavy application (of gypsum)--they don't use it any more, but they used it on pea fields and they put it on by ground and they could put it on any time of the year to take the acidity out of the soil. I wish I could think of what it was. Kind of a land plaster is what they called it. [Gypsum--hydrous calcium sulfate--also used in making plaster of Paris.]

What about the wheat?

Now with the wheat, as it became prevalent, the market for it became more attractive, it became more of a scientific problem controlling the weeds. We didn't have a lot of weeds originally. But as the ground became more productive, the weeds came out of the draws where the silt was rich in the bottom of the draw and the weeds would thrive down there. They wouldn't thrive on the hillside and the clay ridges because it wouldn't support anything but the wheat, and it wouldn't support very much wheat either. But they fertilized those ridges and they treated them until they began to produce and when they produced wheat they also produced weeds and when they seeded the wheat fields they seeded the weeds with it and new weeds came in and new diseases and everything. It became a lush area not only in the draws, but on the hillsides, too. And the vetch and the various other hundreds of weeds that thrived in the draws now began to thrive all over the field. And then it became a problem of controlling the broad-leaf weeds and the weeds that were not susceptible to 2-4D. The 2-4D would take care of the broad-leaf weeds or the dicods, but as time went on we got these hairy leaves and vine-like leaves that wouldn't absorb the chemical. And then they had to work on the root system. Then they began to experiment and find out soil sterilants and various other chemicals that would go to the root and would separate and would control the grasses and control the differ-



A pick-up and a truck, both with chemical tanks ready to fill the waiting hoppers of a Piper J-3 (left) and two Piper super cubs.

ent basic families of weeds without hurting the wheat. And it began to be a real science.

CHEMICALS AND RESEARCH

So that's when the chemicals really started to--

And more and more complicated. A lot of that came out of the south. They were more progressive down there and had greater areas to work with and bigger companies and more experiments and more money involved and they learned by adapting the chemicals that they experimented with in the south into the Palouse area.

That research was done in the universities?

WSU and Idaho did a lot of research. We did the first work with Professor Seely, on Carmex, which was one of the first chemicals that we'd put on in the fall to control the wheat. You'd seed the wheat in the fall and you'd put the Carmex on in the fall or the real early spring and it went into the soil and controlled the growth of the plant. It had some effect on the leaves, too, but mainly on the

soil. And then they had to judge the amount of moisture in the soil, how deep it would go, the temperature and whether the roots were exposed and it became a real science. And these people that go out and advise it--the farmers began to depend on the representatives of the chemical company just like they did their family doctor. That divorced the farmer from the pilot. The pilot could tell them about DDT, Parathion, 2-4D, and he became king when they had bugs. But when they had weeds, if the pilot wasn't completely informed on all the latest advances in it--and he couldn't be, they were getting too complicated--you have to pass a test on it, you have to have a smattering of knowledge of all these things so that you won't destroy a crop. But the chemical companies began to learn that if they sent these people to school and they sent them out in the field and showed the farmer, that they could sell them these expensive chemicals. Now the chemicals weren't very expensive to begin with, but it got to be an organized business and now, at this point last year, we sent an airplane out with \$3,000 worth of chemical in it and the fuel pump went bad in the airplane and it had 500 gallons of mixed chemical--five or six different chemicals--Benlade, Diagran, I don't

know, I can't name them all--it amounted to \$39 an acre, the chemicals he had. And it was the responsibility of the pilot of getting that on the crop. And if you dumped it someplace, the EPA and the state and the landowners and everybody would be right on top of you. You could destroy everything under it and your licenses would be in jeopardy and everything else and then the FAA would be on you because your airplane failed. So the pilot had to go out with this \$3,000 load of chemical and put it on the proper place. His fuel pump failed him and he had his boost pump and the switch was bad in the boost pump and he had two tons of this chemical in the airplane and he had to fly back to the airport and land it safely. So this is what happens to the pilot. This is what happens to the operator. It's getting to the point where nobody will take responsibility for these chemicals and if you hire out to put those on, they're in your hands and it makes it more and more difficult to stay in business in the wheat business--especially in the wheat business with these big dangerous airplanes. And everything below them is in jeopardy when you're flying over them, so you've got more people coming out of the brush from the east or from the big city that aren't sympathetic to the pilot. And the farmer likes to have this on and he likes to pay for it--he'd like to do it himself. And the chemical people advise these chemicals to save the crop or to get the yield. So you're really getting to be a pawn--the pilot's getting to be a pawn of the chemical company.

And most of these chemicals have to be sprayed on by aerial application?

If the weather is bad. If the weather is good, they have built up expensive ground machines that carry tremendous loads and have the wheels separated so that they don't destroy too much of the crop and the farmer would like to do this all himself if he could because he's proud of this equipment that he's built and he's proud of the--and he's informed, he's getting more and more informed and finding out by experimenting himself what he can

do with his own man and they're getting tremendous yields. So they only hire the airplane as an auxiliary or an emergency thing, like somebody that gets the flu and calls the doctor. So you don't know whether you're going to work or not as a pilot.

Well, aren't those ground applicators though awfully expensive for a farmer to use?

They're awfully expensive, but so are the combines and so is the wheat.

Chemicals that you'd use now--there's dust, paste, emulsion, all these different kinds of--

We've always had hazardous chemical, even when we first started flying. DDT--we didn't know it was hazardous. I told you I mixed it first with my hand. But we had Parathion, which has been deadly, for years and years. Even a long time ago we used to have to fly it with masks and load it with rubber gloves and rubber aprons, rubber boots, to keep it from penetrating your skin. So we were familiar with some of these chemicals that have been used over the years. However, they're coming up with new formulations that they are eager to sell and this is an indictment of chemical people --just as the public indicts them. They are exposing the pilot to risks and the loaders to risks that they haven't proven, because they find out the hard way sometimes that they don't have an antidote for something like Paraquat and the pilot will get to the point where he won't fly it and usually through symptoms that arise in his own body. And the label is very broad. They can tell you not to do things with that chemical that will prevent you from using it altogether to protect themselves. They'll sell it and tell you not to use it. Almost that bad.

Would it get on the pilot's hand? Would he breathe it?

A lot of this is absorbed--a lot of the chemicals are absorbed through the skin,

that carries it into the body and then-- they don't take too much precaution against breathing it. Apparently the fumes--it takes a lot of exposure through your lungs to do a great deal of damage and it works slowly and sometimes your body will work fast enough to counteract it. With Parathion, the cure for it was to stay away from it a while until your body built up the red blood corpuscles or whatever it did with your body. Time took care of it. And in an emergency, why, they used a heart stimulant, an antidote for it that would keep you breathing if your chest muscles got paralyzed. But you could tell Parathion yourself. You'd get kind of drunk on it and the pupils of your eyes would pinpoint and you would get so you wouldn't care very much and begin to get dark in the middle of the day. And then you yourself, if you watched yourself, you could tell that you were getting too much of it. But these other chemicals that are insidious, that they haven't proven--haven't had long enough--we're always suspicious of it and they don't pay too much attention to the pilot and the loader because these things can be handled in a liquid form. If they formulate them in a liquid form they'd be a lot less hazardous than they are in a dust form and you find out they're more economical for them and more profitable in the dust form, so they sell it in the dust form.

So you have to rely on the chemical people for any training that you get handling these drugs.

All you have to do is watch yourself. It's like listening to a salesman. If you're stupid enough to buy his product, why it's your own problem. At the moment you have to defend yourself. The government isn't going to take care of you. So when you get--they came in with a soils conditioner about 20 years ago that came out of California that was supposed to dissolve the granite and the clay in the hillside and make it so it would grow plants and they demonstrated it and they advertised it widely and they had corporations selling stock in it and they wanted

me to fly it. That was a long time ago and I had a fabric airplane at that time and I was eager to fly. I wanted to make a living and get ahead in the business, of course, so I was eager to fly anything. I went out with one of the stockholders to look at some of the chemical that I was supposed to fly in the airplane and he tipped the barrel up and it splashed, while pouring it into a can it splashed and got on his pants leg and while we were talking it burned a hole in his pants leg and I could see myself coming home with that fabric airplane with just a stick in my hand. So I didn't fly the soil sterilant. But it was my decision. He said, "Now don't get it on that metal roof because that farmer will be mad if we get it on his metal roof" and "don't get it here" and "don't get it there," but he didn't say anything about putting it in my airplane. But I noticed it burnt a hole in his pants leg and that was enough for me.

RULES AND REGULATIONS

What kind of regulations do cropdusters have now?

They'll make your head swim. There are so many different agencies and so many different licenses and so many different penalties that you don't know--if you do something that's wrong, and it's easy to do something that's wrong, you'll find that they come out of places you didn't know where they existed--in different states. You see, we're working with two states. Each state has its regulation and they're under obligation to the federal government to take care of the problems and if the state doesn't take care of the problem, the federal government has an agency come in and take care of it. And the EPA is the main one that's behind it and sometimes they're aggressive and sometimes they're not--it depends on how the public sentiment is. And then by tradition the state has the attitude of protection of the public through the Department of Agriculture and they're real active. And the Federal

Aviation people are real active in enforcing federal regulations with the aircraft and the pilot--regulations for the physical condition of the pilot and the condition of the airplane and the number of hours that are put on it, how long he flies in a day, and things like that. So you're governed--and then the drift problem of getting it on vulnerable crops right next to it is an economic thing and you've got the State Department of Agriculture, the EPA, and the landowner, and I don't know how many others--tax people are in there, too, on two or three different angles. You've got not only your income tax but you've got your excise taxes and your taxes on your airplanes and your licenses on your pilots and your airplanes and your whole fistful of papers that you carry around to make you legal. And some of these things are enforced theoretically to protect the industry and the professionals and when it comes to protecting the professionals, they're not as eager as they are to protect the public.

And you're responsible for what you spray on the fields, then.

Right. Right and you should know enough to refuse to do a job that would get you into trouble. The farmer theoretically should be responsible for what he does to his neighbor and it may prove to be that way in court. That may be two years later. And now they've come out with a chemical that if you spray it on a field where you want to grow legumes, peas or lentils, it may sterilize the soil for two or three years and if you fly a wheat field and they're going to plant peas or lentils in the field next to it and you get some of it over there and the peas or lentils don't grow next year, you're vulnerable to suit for that crop because last year or the year before you sprayed Glean--Glean is the name of the chemical--and it's a wonderful chemical for weeds, but it's also a wonderful chemical to kill the ground for peas and lentils. So in this area it isn't used very much. Over in the wheat country, why, it's a wonder chemical for controlling weeds.

And it only takes two ounces of it per acre. You can carry a thousand dollars worth of it in a gallon jug easily, I would say. And it's really expensive.

Do you think through the years that chemicals have gotten any safer?

Well, there are chemicals that didn't exist--that you couldn't define that way because they didn't exist before. The use of chemicals surely hasn't gotten any safer. I think it's gotten more hazardous. And there are more question marks and there are more delayed reactions and the public is aware of it. In fact, they're panicked to the point where they regard us as ogres lots of times, somebody that's going to cause their children to be deformed or something.

Has there been any new technology as far the airplanes that you're flying are concerned, and the equipment?

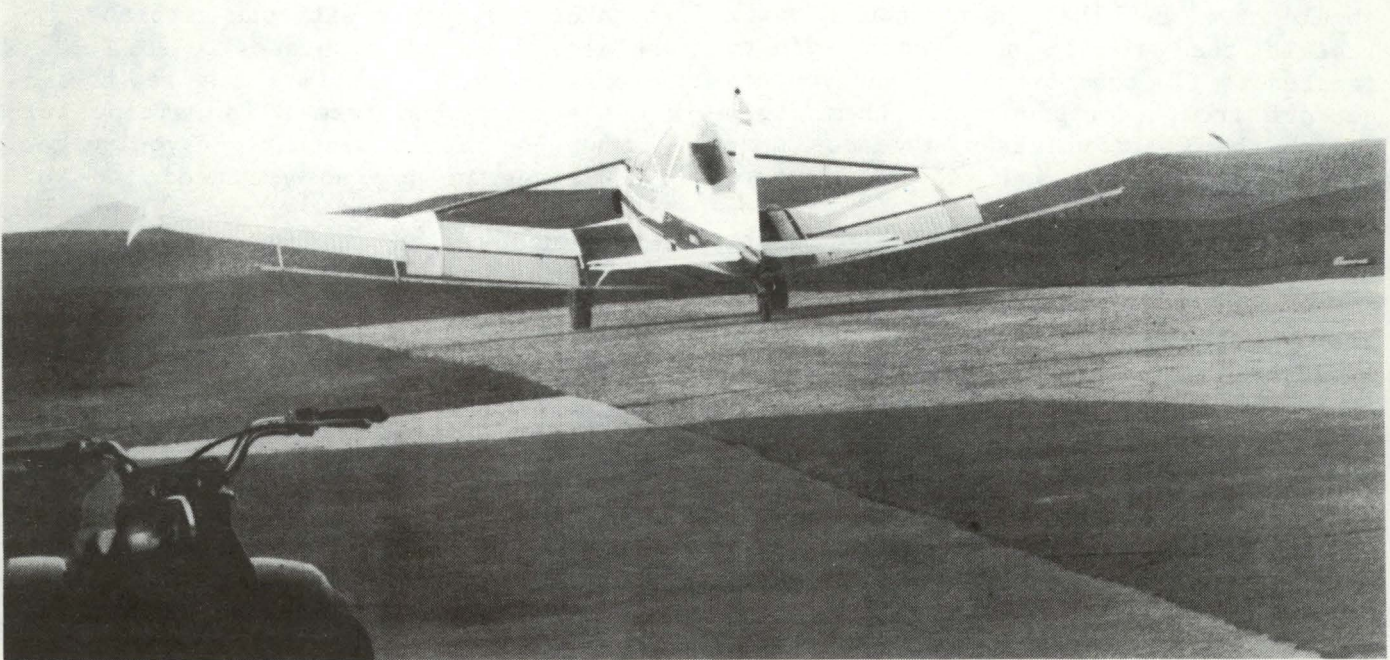
They're doing a lot of research on the patterns, the spray patterns, and control of the drift, and the mixture of chemicals to control the droplet size so that they won't be carried by the wind or evaporate. They're doing quite a bit of research in the universities and individuals are experimenting with the drift control and with chemicals that will carry the material to the plant and still let it run off. Yes, and also the aircraft themselves--they're getting more advanced and more expensive pieces of equipment. The airplanes that we used to regard as expendable--war surplus airplanes that we could buy for a few thousand dollars and reasonably for a few hundred dollars--are getting up to a point where you can't afford to lose one and the insurance is high on them. Full insurance is very high on them. They're paying--for the airplanes that you see fly around here now--they run from maybe forty thousand used clear on up to two hundred and forty thousand dollars. On the bigger, flatter areas where you can get out and go with an airplane, they're using turbine engines and those turbines themselves, to be even placed in the aircraft where you

had the reciprocal engine, bring the price up to well over a hundred to a hundred and fifty thousand dollars.

CUBS, GRUMMANS, AND THE THRUSH

What kind of planes are we talking about now? What are some of the brand names?

and the Cessnas that came in with the industry a long time ago as a forerunner of these other bigger turbine airplanes. And they're getting bigger and bigger airplanes. We had one last year, as I told you, that carried two tons in it and originally we used to go out with a 400-pound load or something like that. And now they're getting up to two tons and some-



Tail up and taking off in a Cessna Ag Truck from Dale Schoepflin's airstrip south of Palouse

The turbine Thrush is getting very popular and it's what they used to call the Snow. It's a thrust airplane--a low wing airplane with a large hopper in it. And of course the more familiar one that you see around here that has been the workhorse of the industry has been the bi-plane that looks like a World War II airplane but isn't. It's made nearly all of metal and it's an Ag Cat, they call it--the Grumman Ag Cat--and you see lots of those around because they're maneuverable and have a lot of wing area and they carry enough to do several hours' work and they can carry a big hopper and they're fairly safe for the pilot--relatively safe for the pilot. Then of course you have the little low Pipers, the low wing Pipers,

times you can't get rid of that load. If the engine quits, it comes down like a rock. If you can't get rid of the load fast enough or you're too busy doing something else. There have been several accidents this year in the industry.

What size engines did you have in the Cubs when you flew them?

The little Cub that came in and I talked about that you loaded in the field had 65 horsepower and the standard ones that you see about here have 600--the bi-plane that you see flying around quite a bit has 600--and then you can go clear up to 1200 horsepower in that type of an airplane. And the one that I told you had all that

chemical in last year was a 1200 horse-power Thrush. It wasn't a turbine Thrush; it was a reciprocal engine 1200 horsepower Thrush. The engine came out of a B-17 bomber.

So with these kinds of planes you need landing strips. You're not landing on roads any more.

We still don't have the landing strips we should have and they have enough power that if the ground isn't soft, you're tempted to fly them off any place you can get off from. You can't fly them right out of the field unless you've put special tires on them and it's been years since we've adapted our aircraft to special tires. I used to have some great big balloon wheels that I put on the first low-wings I had. The first big airplanes that we had in this area that I brought in, they were made just out of southern Idaho--Afton, Wyoming--and we had special tires for those so we could plow out of the mud because we didn't have any field. But they're getting fast enough now that they can stay on blacktop runway and ferry with their loads. They have bigger loads and they can afford to fly out of congested airports with a radio monitor. Last year, with the big airplane I was telling you about, we flew fifty miles and did work and came home. So your radius of action on everything except dry fertilizer, which goes in great volume, your radius of action is getting to be more like 20 miles where it used to be three miles. Twenty miles isn't too far to go in a lot of cases. Except where you have to have repeating loads, heavy loads and dispense it rapidly.

Like putting on some of these chemicals that you do now--how many acres can you do in a day?

It depends on how many gallons per acre you're putting on. If you're putting on one gallon per acre, which you hardly ever do anymore, you could go out with a 500-acre load with a 500-gallon airplane. These airplanes, the biplanes that you see and make so much noise around here,

are a 300-gallon hopper and they usually carry from 5 to 7 gallons to the acre. So you've got a 60-acre load. With a 5-gallon load, you've got a maximum of 60 acres. So by the time you fly for 60 acres, you're getting low on gas if you fly a narrow swath. And you're often gone an hour with a load like that and it depends on how far from home you go with it. So if you've got a 300-acre field to do, you've got to take five loads out and it takes five hours with one airplane, so you need a lot of airplanes to do a 300-acre field and sometimes you're behind 5,000 acres. The farmer is waiting for you because of the weather and you've got 5,000 acres to do, so you need lots of airplanes to go when the sun shines and get it done. And then you need to get close to your work so you aren't flying for half an hour coming and going. That forces us into developing out-lying strips. We have strips at Kendrick and at Culdesac and we fly off of fields away from home. And then we fly off the main airport at Colfax, Pullman, and here at home, and then we've got a field just back of the butte here that we serve Genesee with and we have one out between here and Troy and one down on the rim below Genesee that reaches into the Tammany country and then we fly out of fields farther up on Camas Prairie.

How do the chemicals get to those fields?

The chemical people--the main business is the chemical business and the chemical people--between the chemical people and the farmer, you don't have to worry about getting your chemical to the field. It's attractive enough for them to haul the chemical to the field. The only thing is you have to furnish lots of times the water and your own gasoline to fly your airplane. And so you have to have a traveling airport when you go away from home. Big trucks with tanks on them with gasoline, water, and the ability to mix those chemicals--mixing is a big problem.

And that's your responsibility?

Yeah. There's no compensation for the



Chemicals ready for mixing are brought directly to the Steve Clark airstrip north of Moscow

mixing. If you want to put it on, you mix it. They don't bring it to you mixed. And they won't take any responsibility for putting it on because it's too risky. So your pilot is still under the gun.

You were talking one time about marking the fields and how that's progressed. Why don't you tell us a little bit about how you first marked the fields.

Originally you used, with the light aircraft that wouldn't survive in the crop if you hit it, originally you marked it with flagmen. They'd go out there and stand and you'd either fly over them or beside them and they'd wave flags and duck the airplane and stand on the ridgetops so that you could go from one to the other. Later on as we got heavier aircraft with sturdy gear, the pilots got so that they could drop a wheel in the crop and split the crop and leave a streak and

they'd usually do it on a hillside so that when you came around you could see that streak and line up parallel to it and put another streak down and you'd see dots across the field where one wheel would go down--sometimes two wheels--often two wheels would go down, but lots of times one wheel would go down and leave just a light streak. That way you didn't destroy that much of the crop. Farmers in the pea fields didn't like to have their crop destroyed or knocked over. And that was hard on the airplane, but you didn't have to wait for your flagmen to get there and you weren't in danger and it helped a lot if you could mark your fields. You couldn't do it in the rape crop, which stood higher than your head, because you'd get your booms down in the rape and take your airplane in with it. But in the wheat--young wheat--and in the peas it was best. It was most obvious in the peas. You could see the

wheel marks for a long ways away. So you used your airplane to mark. And then a fellow over at Walla Walla began to experiment with some paper--it looked like toilet paper--strips of paper on heavy cardboard and we called them flags. And he finally devised a method of dispensing those flags with a solenoid device kicking a single flag out of a holder on the wing of the airplane and let the wind catch it and it'd drop below the airplane. So you'd snap a little button, electrical button, on your stick and a solenoid would kick a flag out and the wind would catch it and the weight of the cardboard on it would take it down below the airplane and that's what you see in the fields now. And that saves your airplane. You could fly higher with it and drop it. It saves your airplane from being banged up in the crop. Not everybody could wheel mark and get away with it, either. But you could drop those flags and they cost about 10 or 15 cents a piece and you use maybe two to an acre a lot of time. So you're spending about 15 to 30 cents an acre on your flags and you can carry a couple hundred flags--enough for a couple hundred acres--or a hundred acres at least in the airplane at once. And that brought a correlated business, of course. There have been two or three companies that have infringed on the patent and they're using them in this area. They don't use them in a row crop area--farmers don't like to have them in a lettuce crop because they don't like to have the flags in their fields. In the irrigated and row crop area they still use manual flagging or marking, and in the high productive ground. And down south they don't use them much down south. They're what you call endemic to the Northwest. The fellow that invented them got killed in an airplane a few years ago--Dale Tillay, his name was.

Now the--I know we were talking about spray nozzles and different nozzles that you used for different chemicals. Now do you have to keep all those kinds of things and modify your planes for the different size--

They're still experimenting with "micron-air" devices that break the droplet up to uniform size and hurl it into the wind and they still have to contend with the speed of the airplane breaking it up and causing the stuff to evaporate and be too fine and having uneven particles. The distance that it drops is important, especially in timber spraying. The temperatures and humidity may prevent you from flying the chemical at all sometimes. It would never reach the ground in certain air conditions. And the pH characteristic of the water that you use is even being governed in your spray. It affects the chemical. The solution--the kind of water that you're using. The acidity effect of your water. So droplet control and the use of your various nozzles--they're still under investigation. They're constantly working with methods of controlling the droplet size, the volume, and the ability to get the chemical to stay with the plant. They're using now--they have what they call the ULV, an ultralow volume system, where you spray oil with the chemical--vegetable oil so that it doesn't burn the plants, cottonseed or soybean oil. No water, and control the droplet size, and put only half a gallon to the acre on and it's working out pretty well on both the weed and bug control down south. So if that occurs, why your small aircraft will come back into play because you can take a hundred-acre load out in a little airplane and you don't have to carry those tremendous loads. The only thing wrong with that is when you put the oil with it they're having trouble getting the droplet to go where they want it and I'm not just sure you can depend on their drift control. It may blow in the air and go where you don't want it. But you still have that problem. If you go out and spray a field now and the wind is from the west and you have a field that is to the west of the field that you're spraying--the wind is to the west and the vulnerable field is to the west, you have to wait for the wind to change before you spray that field and, in this area of varied crops, you can see what you're faced with. You go out one day and you'll wait for a week before you get a wind from

the other direction before you can finish the field. And you don't dare go out and let that stuff drift over the fields of the neighbor. So sometimes you'll have a field half finished for a week and the weeds will continue to grow and you never will get to it. And the farmer's champ-ing at the bit all the time to get it done. And on the control of wild oats, you only have a short period there--if the weather doesn't permit it, the plant has to be dry sometimes or the tempera-ture has to be so that you don't hurt the wheat. You've got to protect the wheat and kill the weed and the conditions are sometimes where you have to sacrifice damage to the wheat in order to get the weed and you have to make that decision. Somebody has to make that decision. So the pilot has to be knowledgeable or he'll go out and--he'll get an order to do a field and then two weeks'll go by, condi-

tions will change, and he's busy doing something else and if he goes out and takes up where he left off without call-ing and checking and going and looking, he's got an unhappy farmer. So it's get-ting to be a regular prescription thing. And it takes constant vigilance.

Well, how did you feel about your sons going into your business? Did they al-ways want to be pilots?

I always felt that I didn't want them in an airplane unless they made up their own mind that they wanted to. That's why I've never pushed them. Sometimes it's ten years before they decide they want to spray. And Steve now has had a commer-cial license for some time--my third son --and he's now beginning to think he wants to try it. [End of interview--thank you, Pete and Suzanne.]

FOR THE LUVVA PETE!



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BUGS



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MOSCOW—DAY OR NIGHT

"Bigger Buckets, Fill 'em Full, Swing 'em Fast":

The Story of the Terteling Family

by Marguerite Laughlin

Editor Note: The Terteling family construction business is today headquartered in Boise and is one of that city's largest firms. But the family actually got its business start in the Palouse country. The author is a long-time family friend and former neighbor when the Tertelings lived in Potlatch. The former Terteling home, at 1015 Fir Street in Potlatch, was constructed for the Potlatch Lumber Company in 1916 and is the only brick house in the town. It is presently being considered for nomination to the National Register of Historic Places. The Potlatch Brick Company, which the Tertelings owned--one of the few privately owned businesses in Potlatch--had its brickyard approximately where the high school football field is now.

"Bigger buckets, fill 'em full, swing 'em fast." This was the slogan of the Terteling Construction Company in the early days of road building in the Palouse. As the construction business expanded, the firm's slogan became "Do it better, do it quicker, do it at less cost," which it still uses today.

Five generations of Terteling men have been brick masons, operators of coal mines, and builders of roads, dams, and military installations.

The first Terteling in the United States was Ben H. who came from Hanover, Germany, in 1859 with a trowel in his hand and a fierce ambition to succeed. Ben settled in Kansas, married, and sired five children: 2 boys and 3 girls. Times were hard and there was much moving about in Kansas Territory searching for opportunities.

In 1883 a neighbor, Mr. Southwick, went to Idaho Territory to homestead about 40 miles north of Lewiston. He was later to

have a town named after him. His encouraging letters persuaded Ben to take one son, Pete, and go west in 1884. Joseph, the other son, stayed on the Kansas place with his mother and sisters. The next year Joseph, his mother, and three sisters came by train to Spokane Falls, Washington, and by stage to Lewiston. The Tertelings took up homesteads and the boys built a log house. Father and Ben went to Lewiston as brick masons and built the Vollmer Building and the First National Bank. Ben and Joe started buying cattle, obtaining loans at 15-18 percent interest. However, the winter of 1883-4 was very severe and many of the cattle were lost to the snow and ice. In the spring, the creditors had the sheriff attach the herd. Pete went to the Big Bend country of Washington as a cowboy and Joe to Spokane looking for work. Joe came back to the Idaho homestead and started a brickyard. Pete also returned home and said, "I had never been around a brickyard or masonry work but I pulled off my high heeled boots and started making brick."

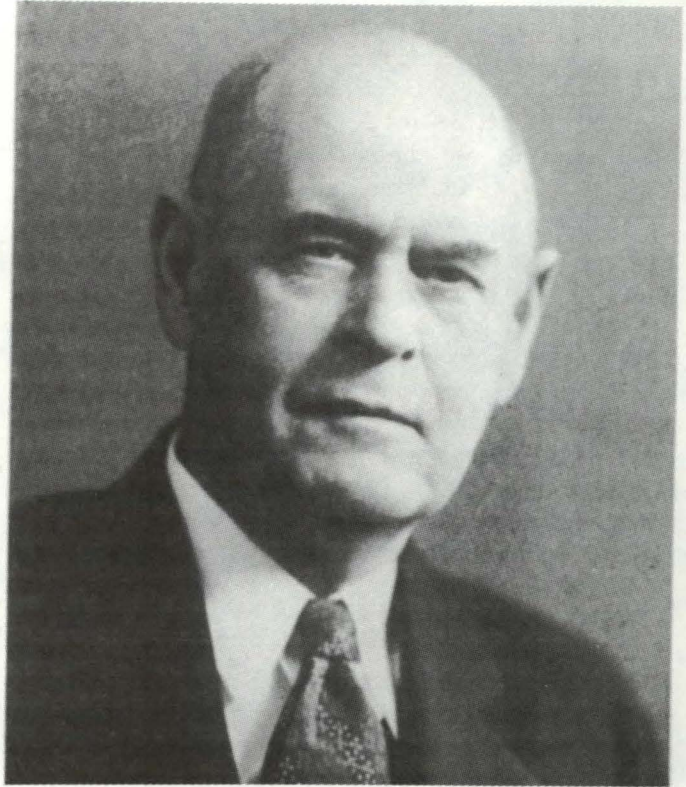
In 1893 the Tertelings received a contract to build the St. Gertrude convent in Colton, Washington. The year 1893 was one of great depression in the country and the Tertelings were unable to cash the vouchers with which they were paid. The building was not completed. Pete must have learned something about brick laying because in 1901 he built a brickyard in Grangeville to take advantage of the influx of population there due to the Buffalo Hump gold strike. That same year Joe A. built a brickyard in Palouse, Washington. In 1904 he built a larger one in Potlatch from which bricks for construction of buildings in Bovill, Potlatch, Palouse, Lewiston, and Moscow came.

Meanwhile Joseph had married Miss Vady Nixon and the couple had five children:

four sons named Loyd, Joseph W., Waldo, and Nixon L., and one daughter named Minerva. The sons were put to work in the brick plant as soon as they were old enough. Joseph was a sympathetic and understanding father and understood the value of university training. Therefore, in order to furnish this education for his children he moved his family to Moscow to take advantage of the University of Idaho. Loyd continued in the business until he joined the 23rd Army Engineers in World War I. Joseph W. went to Ohio State University to study ceramics engineering. The other children went to the University of Idaho.

Loyd returned from WWI and his experience with the Army Engineers building roads with a vision of future road building in this country. Joseph A. was ready for expansion and found Loyd's ideas interesting. So the Tertelings, five of them now, became pioneers in the road-building field. The first job they did was a 22-mile stretch from Genesee to Moscow, and it was all done with horse teams. They acquired more than 200 head of horses for the project. Joseph A. formed a partnership, J. A. Terteling and Sons, with his four sons, even though Nixon was still at the University of Idaho. The next road-building project was 13 miles of road from Pullman to Palouse, Washington. Although the work was still done with horses, it was during this job that they acquired their first piece of mechanized equipment: a horse-drawn elevating grader. So new roads were built--not the super highways of today, but nonetheless a delight to the new automobile owners. It was during this road-building project that the Terteling business headquarters moved from Potlatch to Spokane.

As earth movers always looking for new opportunities, the coming of irrigation to the Far West was a new challenge to the family. In 1927 the Tertelings secured a contract for one of the region's first large irrigation projects, at Harper, Oregon. While building the Salmon River highway near Riggins, they bought their first diesel power shovel. Recogn-



Joseph August Terteling

nizing that power machinery was to be the earthmoving equipment of the future, they discarded the horses and bought power shovels, draglines, crawler tractors, compressors, rock crushers, and powerful dumptrucks. With this equipment they went after more earth-moving jobs: roads, irrigation systems, and dams. The company built much of the Owyhee irrigation project, as well as canal work for the Black Canyon project.

In 1930 Loyd died as a result of being gassed in the war. In 1934 Waldo died while supervising a job at Casper, Wyoming.

The Terteling Company had moved their head offices to Boise from Spokane in 1932. In 1934 the company formed a subsidiary, Western Equipment Company, to provide Western construction equipment for their company and also for other contractors. This corporation was managed by G. M. (Jerry) Gehrke, a native of Moscow.

The company continued to expand, becoming involved with projects all over the Pacific Northwest as well as in Maryland, Nebraska, Missouri, and South Carolina. They added engineers and specialists to their staff and designed modifications of earth-moving machinery and of machines for the pouring and handling of cement.

In 1940 at the age of 79 Joseph Augustus Terteling died at his home in Boise.

World War II presented a new challenge to all industry, including construction. The Terteling firm, now strong in equipment, resources, and know-how, was eager to do its part and offered its services. The first job was the construction of the huge Umatilla Ordnance depot at Hermiston, Oregon. Other war contracts were the Black Hills Ordnance depot at Provo, South Dakota; air bases at Walla Walla, Washington, Alliance and Scottsbluff, Nebraska; Mountain Home Air Base, Mountain Home, Idaho; and ammunition dumps at Hawthorne, Nevada, and McAlister, Oklahoma. \$65,000,000 in defense and military construction was done by this one company during the war.

In 1947 Terteling Brothers, Inc., discontinued construction work and formed a new corporation engaged in the mining of coal. For seven years they supplied industrial coal for the huge steam plants in the area of Madisonville, Kentucky, where its headquarters were.

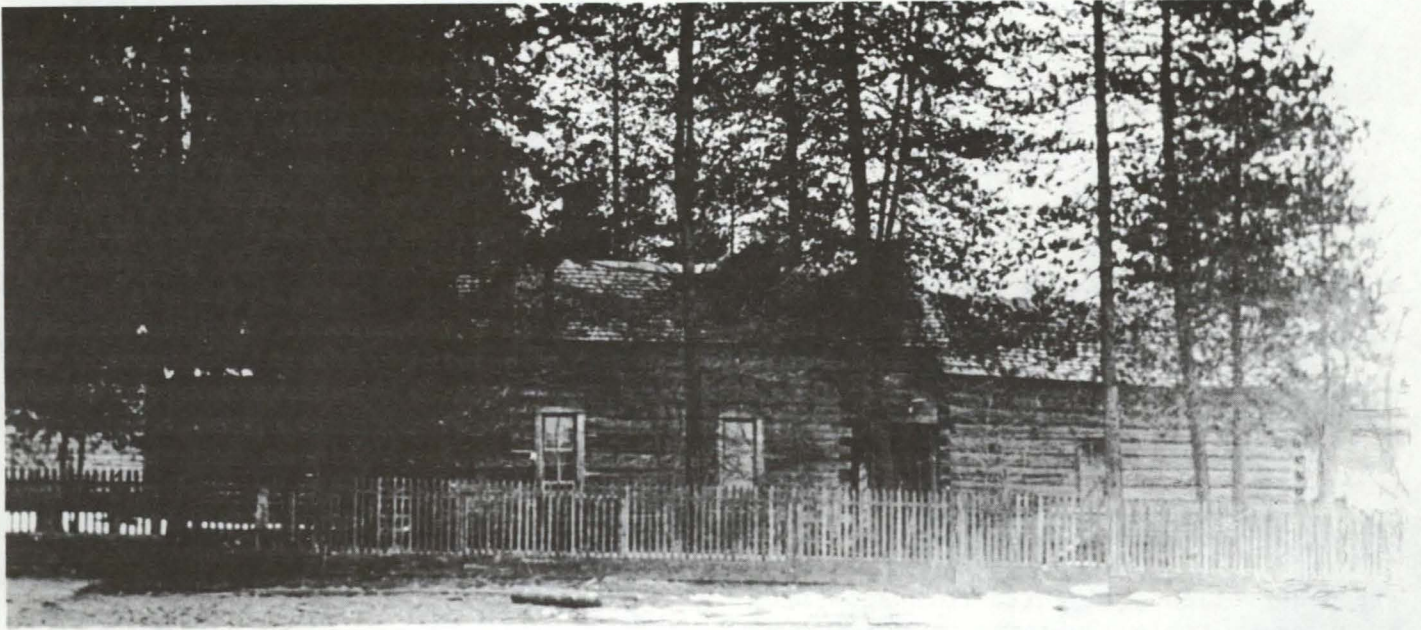
In 1945 the construction firm, with offices in Boise, was incorporated as J. A. Terteling and Sons, Inc. This company built six projects in Washington on the Columbia Basin; the Coulee Dam project; had nine contracts on the Tucumcari project in New Mexico; it worked on the Cambridge Diversion Dam and Canal in Nebraska. Projects in Idaho were Anderson Ranch Powerplant, tunnels for Palisades Dam, and Lucky Peak dam. For the Corps of Engineers, the Tertelings built a rail-

road bridge and overpass on the Yakima River, and undertook a road and railroad relocation at Wallula, Oregon.

Joseph W. Terteling died in August 1954 in Hawaii, leaving a son, Joseph L. This left two Terteling men: Nixon L. and his nephew Joseph L. Late in the 1970s there was a rift in the relationship of the two men and the various aspects of the Terteling business were divided. Nixon was president of J. A. Terteling and Sons, Inc. He kept that as well as Tereco, McGregor Triangle Company, and Tereco Realty, Inc. Joseph took the Terteling Company, Inc., of which he is president, Development Services Division, Eagle Aircraft Company, Geolinear Company, Goonen Business Park, Terteling Marketing, Inc., and Western Equipment Company.

Nixon L. Terteling died in Boise in September 1983. Of Tertelings still living there is Minerva T. Smith, daughter of Joseph A. and Vady Jane, and sister to Loyd, Waldo, Joseph W., and Nixon. Joseph L. and his wife, Carolyn, have four sons: Joseph Nixon, Steven, Thomas, and Andrew. Nixon is survived by his wife Angela, a daughter Angela ("Bibba") and a son Kenneth who has an electronics firms in California. Mr. Dale Babbitt is the present president of J. A. Terteling and Sons, Inc.

For Further Reading: The Latah County Historical Society Archives has two small collections relating to the Tertelings in the Palouse country. Archival collection SC-TER-1 is an article from America's Builders, October 1952, entitled "The Tertelings . . . Builders," and presents a concise business history of the family. Archival collection SC-TER-2 consists of handwritten reminiscences by Pete Terteling which provide good family biographical information and relate the early history of the family in the cattle and brickyard businesses.



WARREN CABIN

A word of correction is in order relative to the photography of the Warren cabin on page 2, 1984 Summer Edition of the Legacy (see article "Warren Meadows" by John B. Miller). And further information is appropriate.

Confusion has resulted in publication of a photograph--truly an excellent winter scene of the cabin--which was not intended as the photo to be used.

The photo used does not fit the information given, nor completely satisfy the purpose of the author. Nor was it taken, as its caption says, in 1901. (Evidently someone was misled by an old notation on the photo which reads, "Only house in Bovill in 1901." This notation says something about the age of the house, but does not date the photograph.)

As construed from several pieces of evidence, the beautiful snowy scene was probably taken in the middle of the winter of 1914-1915. There is an association, as well as visible correlating details, which make it one of three photographs probably taken within a few days of one another. One of these, showing Bovill's Main Street from its west end, is commonly printed on a single sheet of photographic paper and bears an identifying date of

January 1915. The wire fence and sidewalk seen in the cabin photo were there in 1914-1915 but definitely were not present until after 1910.

As intended by the author, the photo of the cabin which should have been used is shown above. Evidently it is a late fall photograph (bushes are bare of leaves and some patchy snow lies on the ground) taken, perhaps, about 1904 or 1905. Its particular value lies in what can be seen, with careful inspection, of construction details around the breezeway and at the junction between the high and low parts of the cabin. The high part is distinctly an addition to the older, lower section. The character of the breezeway and the complicated cribbing of logs around the breezeway and cabin junction are items of historical interest.

Breezeways, which provided pioneers with work space for chores of many types and storage space for household items, equipment, and small stocks of firewood, were rather common in early times. Many were wide and spacious. This one was narrow, but what it lacked in working and storage space was amply made up by the open-roofed area (the "shed"--seen in other photos; just its end seen here, but not clearly) which joined the south end of the cabin.

[The Editor apologizes to Mr. Miller for this error and thanks him for the very welcome clarification.]

Latah Vignettes

by Mary E. Reed and Keith Petersen

The Estes Branch

The Estes Branch line is now an abandoned railroad right-of-way without rails or cross ties, but it is also a reminder of a homesteading family, a pleasant and convenient mode of travel, and a corridor of natural vegetation and wildlife cutting through the wheatfields. It is a story of people, railroads, and a landscape.

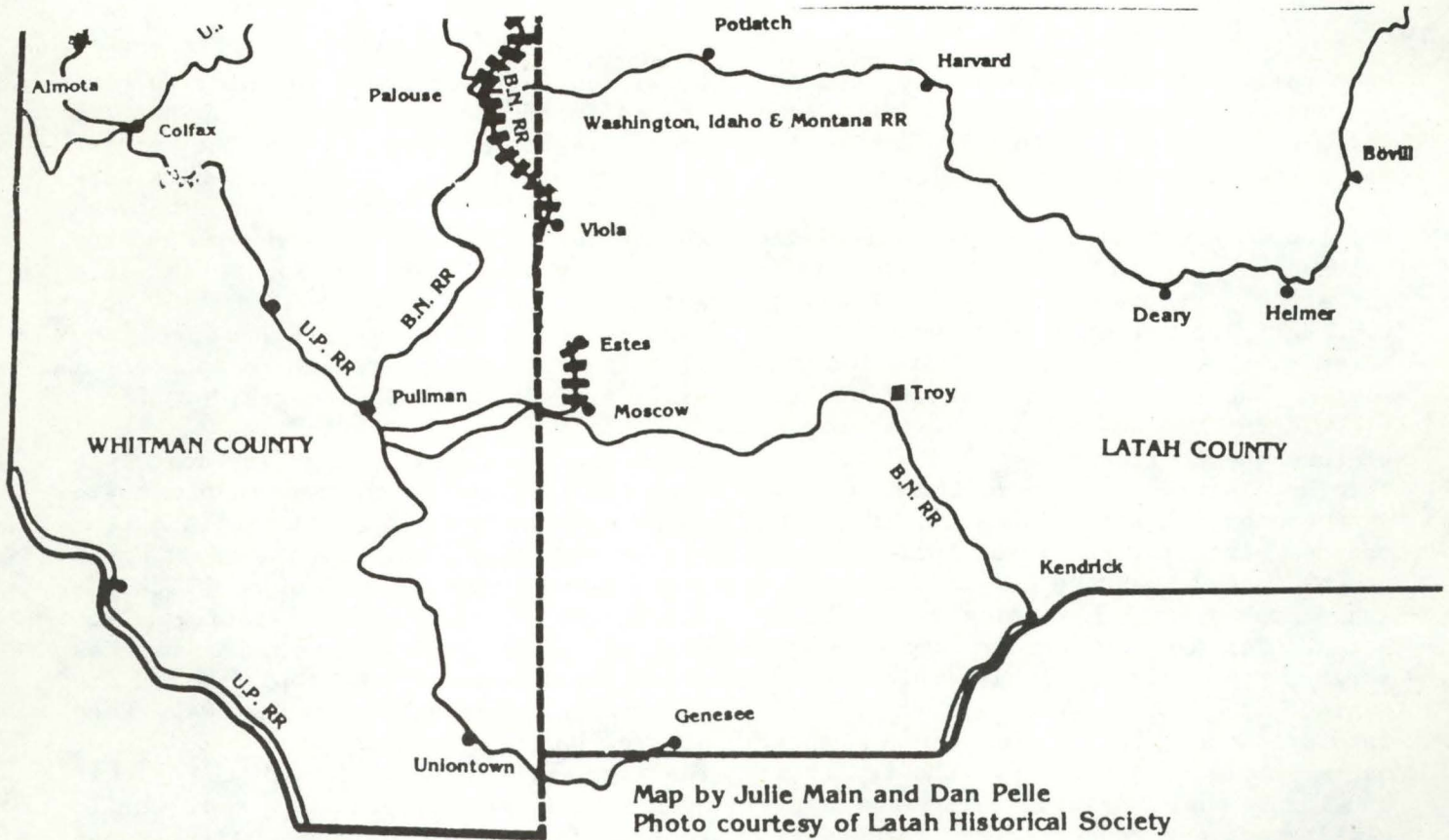
Archie and Sarah Estes, who first homesteaded the land, migrated to Moscow from Arkansas. Archie was born in 1828 near Nashville, Tennessee, the son of a farming family from North Carolina. Apparently the family had some means for they sent their son to a college in the north. Then in 1849 when he was 21, the news of the California gold fields lured him and thousands of other young men west. Unprepared and unskilled in mining techniques, Archie stuck it out for two years before giving up the adventure and returning home to Arkansas. He became a farmer, married Sarah Pine, and with his wife began raising nine children. But like other easterners and some westerners in the settled parts of the Willamette Valley, he had not given up the idea of being a pioneer. In 1874 at the age of 46 he brought his family west, moving slowly with his ox and mule teams. He found a homestead four miles north of Moscow, but first he had to buy out a squatter who had built a log house and barn. Archie broke the land with a walking plow, and cut his first grain crop with a cradle. A few apple trees graced the bare farmstead.

Like other pioneers, the Estes' contributed to civilizing the new country. Archie and Sarah were founding members of the First Baptist Church established in 1876, and Archie taught in the first school house in Moscow. He died in 1890, but his widow remained on the homestead with one son, Jasper. She lived well into her 80s.

The Estes name eventually disappeared from the plat maps, but it remains as a local landmark for the Estes Station, road and grain elevators are a symbol of the railroad era in Latah County. In the early 1800s railroads began reaching into the Palouse, competing for the agricultural and lumber markets. The first to arrive in 1885 was the Oregon Railway and Navigation Company, a subsidiary of the Union Pacific. The advent of the first train into Moscow sparked a joyous celebration with whistles and cannons. Moscow attorney Willis Sweet announced to the cheering crowd, "We are today a part and parcel of the world of commerce, politics and social life, connected by rail and wire."

The OR & N connected Moscow with Portland, and soon its rival, the Northern Pacific, entered Latah County from Spokane, offering a second through line to Puget Sound. By the end of 1889 the OR & N had extended its lines up through Tekoa, and in 1890 the Northern Pacific moved south to Genesee and Juliaetta, cutting a branch line between Moscow and Pullman. A third spur line from the Chicago, Milwaukee, St. Paul and Pacific Railroad reached through the Bitterroots with a branch to St. Maries and Elk River. The new logging railroad built by the Potlatch Lumber Company in 1905 connected with this line at Bovill. Named the Washington, Idaho and Montana, it never completed its route into Montana.

There was one more railroad to come to Latah County. In 1904 some Spokane capitalists sent surveyors into the field to locate a route for a new electric railroad, a popular idea at the time but usually confined to short interurban runs. These plans contributed to the ongoing rivalry among towns in the area. The Palouse Journal, learning that Moscow hoped that the Spokane Inland might build



Solid lines on the map show existing rail lines in Latah and Whitman counties. Broken lines show branches proposed for abandonment. Inset photo is of an electric passenger train that served the Palouse from Spokane from 1907 to 1939.

The Blank section of the map between Viola and Estes is where the actual rail was removed in the '70s.

a line from Viola to Potlatch, announced that Moscow was silly to think it could lure Potlatch's trade away from Palouse. After all, Palouse was the terminal for the lumber railroad, the W.I. & M. The editor predicted that Moscow's unfortunate location away from the lumber mills would be its undoing.

By the summer of 1907 the Spokane and Inland Empire Company had completed lines to Colfax and Palouse, and in 1908 the Spokane and Inland Electric Railway reached Moscow and had a branch line to Coeur d'Alene. This made it one of the longest electric railroads in the nation. There were numerous stations and warehouses along the way, like the covered platform at Estes and the grain elevators that served both passengers and farmers. In the excitement over the possibilities of electric lines, the company anticipated connections with Lewiston, and it

built numerous country sidings and even spurred the formation of the new town of Steptoe in Whitman County. The Moscow Station, now the Great Northern Depot, stands on the corner of Almon and A Streets.

The Spokane Electric like other western railroads encouraged migration of farmers, business and capital into its tributary lands, hoping to create profitable trading areas for its rail service.

This was usually done through promotional brochures, and the Spokane Electric's was entitled The Truth About the Palouse Country. Illustrated with numerous photographs and a map of the rail route to Spokane, it described a productive land, "The Great Garden Spot," where "it is so easy to simply plow and seed and then wait for harvest time, a bare three or four months' work in the year." The brochure was a

cooperative effort between the company and business organizations in each town which contributed information and money. For instance, Moscow raised \$1,600.

The brochure enthusiastically praised the Palouse country as having "advanced public school systems and the advantages of two agricultural colleges which stand foremost among the universities of the West." There was also the beautiful little city of Moscow with its lovely homes, picturesque environments, and luxuriant farming districts. In addition to the many commercial establishments, including the new plant for the Idaho National Harvester Company and the new federal building, Latah County boasted almost 450,000 acres under cultivation in wheat, oats, barley, rye, timothy, alfalfa, clover, grain, hay, fruits, and potatoes. Their farm products were butter, eggs, hogs, dairy cattle, and poultry. The railroads and local business promoters were especially keen on encouraging farmers to raise fruit. The brochure noted that apple orchards yielded incomes of \$300 to \$1,000 per acre, and it noted that Jonathan apples from J. H. Forney's farm north of Moscow received the grand prize in 1908 at the Spokane National Apple Show.

There were those who greeted these claims with a healthy dose of skepticism. A man from Indiana who read an advertisement for the Palouse in the Cincinnati Enquirer requested a booklet but added: "It strikes me that the description of the country is greatly overdrawn, or the bargains would have been taken up long ago. The descriptions read as tho they were made to get rid of bad bargains. If they are not, yours must be a wonderful country."

Aside from the commercial and agricultural aspects of the railroad, the electric line that connected Moscow and Spokane through the Estes farmland provided a convenient, soot-free, and inexpensive mode of travel that has since disappeared. Ada Hill Crow who lived in Viola remembered, "It was handy. In the wintertime we'd just walk up there to this little depot they had there and go to Moscow and

back. . . . It was handy and nice to have the railroad through there." A network of railroads contributed to the social life of Palouse towns. Special cars were added to trains for football games between the colleges at Pullman and Moscow and for special events like the Fourth of July and dinner dances on New Year's Eve. Moscow residents like Carol Ryrie used the electric railroad to travel to Spokane to visit friends, attend concerts, or shop.

There was another quality, a nostalgia that still clings to the memory of a train whistle, the small stations, and the tracks and trestles. When the adult Carol Ryrie Brink wrote of her Moscow childhood, she described the little stations, hot and stuffy in winter with hard benches and a smoky stove where people waited for the trains delayed by heavy snows. Each station had its wooden sign proclaiming the name and elevation, and the ticket agents with green eyeshades and pencils tucked behind an ear tended to the passengers and the telegraph wire. The tracks had a special purpose, too: "I remember the unpaved streets of my childhood, dusty in summer, frozen into ruts in the winter, and such a welter of mud in the spring that we used to do our romantic strolling on the railroad tracks. The trains were few, and the tracks led into buttercup and pussy-willow country impossible to penetrate by road."

Despite its promotional efforts, good service and popularity, the electric railroad was never profitable. There were too few passengers to compensate for the lack of cargo. The main reasons for its demise, however, were the paved highways and private automobiles which came in a few years after the line was completed. In 1939 Burlington Northern took over the line, and by 1966 rail passenger service ended in the Palouse. Around ten years ago, the tracks between the Estes elevators and Viola were removed, and the truncated, three-mile stretch to Moscow became known as the Estes Branch. Then in 1984 Burlington Northern decided to close this section, and it pulled up the rails and ties and sold them as scrap.

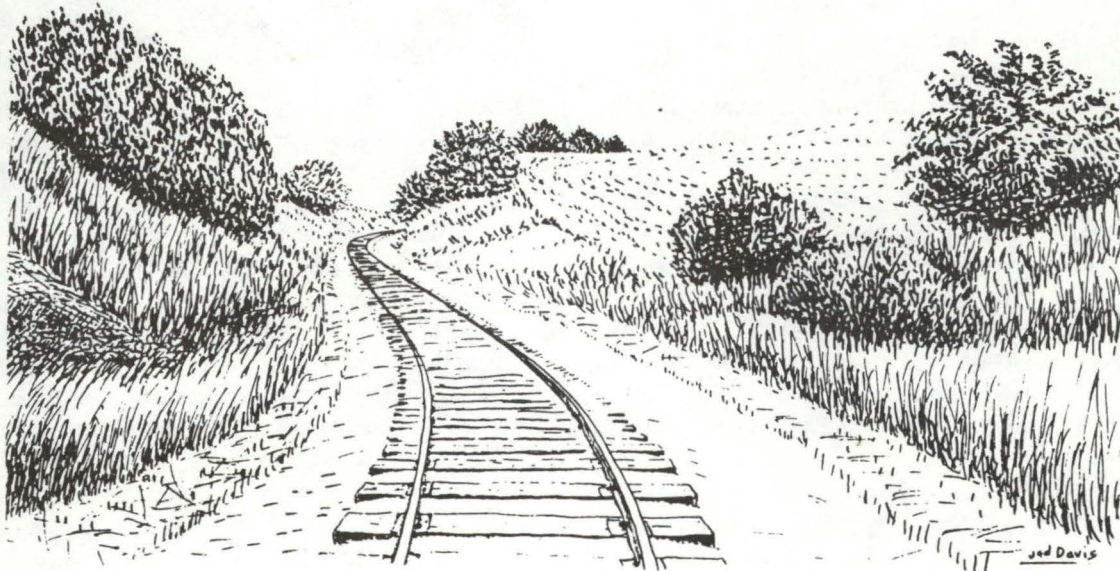
The next step would have been selling the land to adjacent landowners, but some Moscow residents like Jed Davis are working to preserve this property for public use.

There is now a flat roadbed bordered by native plants that makes a pleasant and restful walk into the country. Unlike the adjoining fields and farmsteads, the species of grass, wild flowers and fruit trees have not been disturbed for 75 years. Birds and animals like marmots, badgers, coyotes and deer can be seen along the branch. Davis, an artist who has drawn and painted many views of the Estes Branch, has proposed to the city of Moscow and the Burlington Northern that the land be used for a nature trail. Moscow is interested, and the Burlington Northern office reports that it is considering the idea. In the meantime, Stepping Stones has added its support to the plan as the former railbed offers handicapped people access into a natural area.

If all turns out as these people hope it will, we may, like earlier Moscow residents, enjoy romantic strolls into pussy-

willow and buttercup country from the edges of the city limits.

For More Information: Material on the Estes family came from the History of North Idaho, 1903, p. 644; background on railroads from Donald Meining, The Great Columbia Plain, 1968, pp. 382, 434, 458, 473.; Inland Empire Railroad, The Truth About the Palouse Country, 1909, reprinted in 1979 by the Rosalia Citizen-Journal; Lillian Otness, A Great Good Country, 1983, p. 51; Palouse Republic, April 20, 1906. Other sources were transcripts of interviews with Ada Hill Crow and Carol Ryrle Brink in the Latah County Historical Society's oral history collection. Descriptions of train stations and quote from Brink, Snow in the River, 1964, pp. 29, 30; and Buffalo Coat, 1980 reprint, p. 20. Letter of inquiry about the Palouse Country was written in June 1909 and is in the files of the Palouse Businessmen's Association at the Boomerang Museum in Palouse. Other information came from conversations with Jed Davis and Jim Prall, and an article by Jim Wright in the Idahonian, March 5, 1983.



This pen and ink sketch © by Jed Davis in 1982 is available on note paper for sale at the Museum

Ella Letitia Olesen

Latah County recently lost another old-timer in the person of Ella Letitia Olesen. Ella, who was a life member of the Latah County Historical Society, was born in Moscow March 12, 1894. Her father, Peder C. Olesen, came from Esbjerg, Jutland, Denmark; her mother, Margaret (Teare) Olesen, came from Ramsey, Isle of Man. Her father came to Moscow in the 1880s, working first on the farm of Boyd Martin's grandfather, later for the Moscow Flour Mill, at 6th and Asbury Streets. Olsen [sic] Street in Pullman is named after him.

Ella attended school in Moscow. After completing her sophomore year at the University, she took typing and shorthand at Moscow Business College. In 1918 she became secretary to President Brannon. The following year, because of the crush of returned servicemen, the position of "Recorder in the Office of the Registrar," which at the time was under the administration of Dena Elder, was created for her. In 1925 she was named Registrar, which position she held until her retirement in 1944. It is interesting to note that both Grace Wicks and Senator Norma Dobler had been her secretaries. When the University established its Junior College in 1938, Ella was named its secretary.

As a child, Ella lived on the family farm near what was until recently the Dutch Boy Dairy. When she was ready for school her parents moved into Moscow where they lived at 223 East Seventh Street. In 1926 they moved into their new house at 115 South Polk Street. In 1961 Ella, now alone, moved into her last, and most beautiful, house at 482 Ridge Road. This house was distinguished by many of Ella's personal touches, such as solid ash paneling throughout, many specialized closets, cupboards, etc., and a very large picture window facing north towards Moscow Mountain.



Ella was always fond of traveling, both with her parents and, later, alone. Her first major trip was in 1922, when she went alone to Britain and the Continent, visiting her mother's relatives in the Isle of Man and her father's in Denmark. On that trip she flew across the English Channel in an airship. She took many automobile and train trips across the United States and Canada. Later, after I had moved into her rental apartment and was able to assist her with her financial affairs and house maintenance, she was able to travel in earnest, always by freighter and nearly always alone. She roamed the globe both north and south and circled it four times. Her last major trip, when she was in her eighties, was to mainland China. Although Ella never

cared to cook--her mother was an excellent cook--she enjoyed good food. One of the most memorable meals she had was a Chinese banquet in Zamboanga in the Philippine Islands. While on these trips she purchased many interesting and beautiful things: trays from Egypt, Morocco, and Hong Kong; an exquisite crane and crab, carved out of one piece of wood, from Indonesia; an oil painting from Buenos Aires; and a large collection of teaspoons from all over the world. Ella tailored most of her own clothes, so she bought bolts of silk, wool, nylon, etc., wherever she traveled.

When she was in Moscow, Ella found time to be active in various groups: the Historical Club, the Fine Arts Club, the Drama Club, and the Order of the Eastern Star. She was a member of the First Methodist Church. Ella had inherited two farms, and with the income she was a generous benefactor to many causes. The organ in the Methodist Church was given in memory of her parents. She established a scholarship fund for girls from foreign countries to attend the University; most of

them have been from the Island of Man and Denmark. The Idaho Youth Ranch and various other charities always received generous checks from her. Her largest benefaction, in which I was able to play a part, was a trust fund to the University Library of \$300,000, the income of which would be available after her death, to be used for the purchase of library materials.

Last year, on the occasion of her ninetieth birthday, Ella received the congratulations of several dozen friends who dropped in to visit her. She also received greetings by mail from many friends and relatives who live out of town, as well as from the White House, the Governor's Mansion, the Congress, the Legislature, and the University. Ella had a wonderful day reminiscing with old friends. Now, as usual, about a month before her birthday, and a few days before a blizzard, Ella has left us to go on another trip. We'll miss you, Ella; goodbye and bon voyage.

--Ralph Nielsen

* * * * *

BOOK REVIEW

Mining Town: The Photographic Record of T. N. Barnard and Nellie Stockbridge from the Coeur d'Alenes. Patricia Hart and Ivar Nelson. Seattle: University of Washington Press, 1984. 192 p. \$24.95. Cloth.

Every enthusiast of the Coeur d'Alene mining district is familiar with photographs from the T. N. Barnard studio, established in Murray in 1887, moved to Wallace in 1889, and operated there continuously until 1964 when Barnard's partner and successor, Nellie Jane Stockbridge, closed it because her health was failing at 96. Said Nellie, who ran the business 56 of its 78 years, "I have always stood alone." True. And the Barnard pictures are as

much a tribute to this resilient woman as her chronicle of the mining district.

At the urging of Wallace historian Richard G. Magnuson and Henry L. Day, Stockbridge's heirs gave more than 200,000 nitrocellulose and glass-plate negatives to the University of Idaho Library and Day, the noted former president of Day Mines, Inc., who has been in the forefront of efforts to preserve the area's heritage, led a campaign for funds to transfer the best of the negatives to archival film. Since then, a book epitomizing the Barnard-Stockbridge pictures has been eagerly anticipated--so eagerly that Mining Town's first printing of 3,000 sold out and it went into a second printing of 5,000 copies.

Mining Town is the first, but not the de-

finitive book based on this unique collection. It contains 110 plates from 29,835 photos available to the authors. As we have come to expect from the University of Washington Press, the book is handsomely produced on heavy glossy stock for fine photo reproduction. In its 10 x 10 format, this is a coffee-table volume. The pictures remind us of Barnard's and Stockbridge's technical skills; they achieved depth by foreground and cross-lighting and exposed for shadow detail without washing out highlights. Authors Hart and Nelson balance "people" pictures with scenes, and their captions are generally informative. On the other hand, an 1891 Aulbach map (pp. 170-171) seems less edifying than a clearer one, keyed to pictorial content, could have been.

As an introduction to the Barnard collection and a conversation piece, Mining Town is eminently successful. As history or the hoped-for showcase of the jewels of the studio, it is less so. The writing is clear and entertaining but the authors emphasize many of those eccentric episodes neither historically significant nor typical that furnished transitory newspaper sensations and town gossip. The result is an episodic narrative that does not illumine the photos and is open to question as history. As examples, one doubts that Cornish miners, important in other mining areas, played a significant role in the Coeur d'Alenes (p. 28), or that a wage differential was "the major cause of the mining wars" (p. 32), or that the Coeur d'Alenes' need for supplies "stimulated a major agricultural industry in . . . eastern Washington (p. 64).

The mining district is 100 years old and the Barnard studio lasted three quarters of a century but Mining Town virtually stops at 1935 leaving unsung the notes of nearly half a century and one third of the studio's life. In a preface, the

authors acknowledge this neglect with the opinion that the most pronounced social changes took place between the 1880s and World War I. But even if one accepts this dubious assertion, such pioneers as Amasa Campbell, John Finch, Patrick Clark, and Stanly Easton do not appear, although Mrs. Easton is pictured, while mining wars, prostitution, and prohibition are amply represented. In sum, a juicy story takes precedence, distorting the real course of events. One is tempted to conclude that Mining Town should have more pictures and less narrative.

Mining Town is divided into 11 chapters, the first on the Barnard studio (where we learn that in 1890 photography was not an unusual female profession) and the eleventh on the collection. The other nine are devoted to gold mining, silver mining, the mining wars (but not unionism in World War I or later), town beginnings, isolation of the district, local entrepreneurs (the merchants), a settled community, national pride (Teddy Roosevelt came calling) and local vice (prostitution, etc.), and studio photography. The book is not annotated and the critical bibliography lists popular, scholarly, and technical works--some, read carefully, should have guided the authors to different conclusions in their narrative.

While scholars will find Mining Town wanting, for the general reader who wishes to sample the Barnard pictures and the flavor of mining life, it is handsome, pleasing, and stimulating.

--John Fahey.

JOHN FAHEY, professor emeritus from Eastern Washington University, is the author of The Days of the Hercules and is currently writing a history of the Hecla Mining Company.

The Uncovered Wagon (Cont.)

by Alma Lauder Keeling

Part 6 (Chap. 22-23)

CHAPTER 22: TWO PIONEER CHILDREN OF THE UNCOVERED WAGON

Of all the eight children of the William Taylor family, I knew only two besides my Mother--Libby and Tom. Aunt Libby was twenty-one when they made that historic trek from Ogden, Utah, to then non-existent Moscow in 1871. Her husband, who accompanied them, Warren Robbins, was later divorced by her (after having several children by him) in the day when divorce was a pretty ticklish matter.

Strangely, however, her two daughters, Lena and Ina, followed in her footsteps, both divorcing their husbands before they became Christian Science practitioners in Portland, Oregon, where Libby died at age 93--just a few months before my Mother--in 1943.

Ina's little boy, Paul Sutton, was drowned here in Paradise Creek at age four, in 1908. I remember my Mother taking my hand and laying it on Paul's forehead--to take from me, I suppose, any fear of the dead. The funeral was in our home.

As a child and young person I knew Aunt Libby only as Mrs. P. H. Clayton. In her younger days she had been one of the charter members of the Methodist Church here, and at her death there appeared an extensive article in our local paper describing in some detail her coming to Moscow in the "uncovered wagon" in 1871. (The article said she was the last surviving charter member of the Moscow Methodist Church, which was organized in 1881.) She had come from her home in Portland just a few months before her death, to see the old home town again, and her sister, Minnie, who, she had heard by the "grapevine," had been down with a heart condition for some time. We did not correspond, and we were unaware of her own activities after she moved away following Mr. Clayton's death. She is buried beside him here in her own lot next to ours.

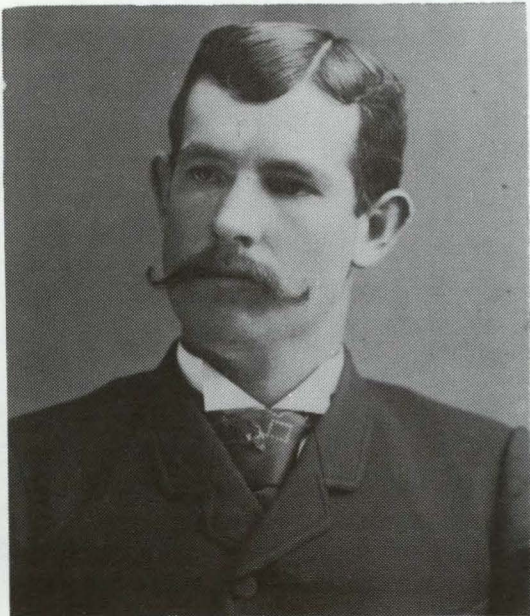
As for Tom, Mother's favorite brother, I should have known him well, but, strange to say, I did not. I know he was handsome, and dignified, but I saw him only on those rare occasions when the two families got together for a special gathering of some kind; after all, with no cars to whiz one to his destination in a few minutes, folks did not "hob-nob" together every few days as they can now. But I have some interesting family group pictures of those times when we did get together, taken by my Mother's own faithful little camera in our brick house across the street from my present home.

When Tom and my Father decided to go into the brick business together, and form the Taylor and Lauder Brickyard Company, Tom moved here with his family from their home in Salmon City and lived in a nice house on Polk Street, a few doors north of our present St. Mary's Catholic Church. At this writing that house is still there, and easily distinguishable from its neighbors by the unusual round front window with inserts of colored glass above and at the side. I hope future owners will cherish that window and not tear it out to go "modern," with a big picture window for it dates far back in Moscow history.

Uncle Tom married a Moscow girl, Fannie Driskel, daughter of a wealthy farmer, D. W. Driskel, living near what is now the Elks Golf Course. "D. W." was later our State Representative. Fannie was only sixteen when she married Tom and left for Salmon City, so when they returned it was a sort of home-coming for both of them.

Soon after the building of the two university administration buildings--here and in Pullman--a real financial panic swept over the country, and Dad and Uncle Tom went flat broke in the brick business. Once when we were discussing the so-called Great Depression of the 30's, Dad grinned and said he guessed a lot of people thought this was the only depression that had ever struck our country, but he himself had been "dead broke" three times in his life, from just such a depression! Moscow saw many flourishing businesses close their doors in those early days. So Taylor and Lauder closed out their brickyard and Tom went to Orofino where he managed a lime kiln; and Dad went into the produce busienss. Some years later, Grandfather Taylor invited Tom to come back to Moscow to live with the old folks and inherit the home place at their death. That is when I first became acquainted with him.

In preparation for the ticklish matter of three generations living together in one house, Grandfather wisely built separate living quarters for himself and Grandmother, adding to the house their own sitting room, bedroom, and an east porch where they could sit on long summer evenings. The two families shared the kitchen, and cooked and ate together, so there was "togetherness," but not too much of it! It was a very satisfactory arrangement for the old folks getting along. Here they could have their peace and quiet, for even the best behaved youngsters can be pretty noisy at times.



1863-1907

Thomas J. Taylor, Mother's brother, two years older. Lemhi County Sheriff when he left Salmon City with his family to return to Moscow to live with the old folks and inherit the family home.



Fannie Driskel Taylor, Tom's wife, daughter of wealthy Moscow farmer and Idaho State Representative, D. W. Driskel. Dates unknown.

While Tom was digging out an old abandoned well on the home place, he was stricken with typhoid fever, from which he died--a strong man in his early forties. Although my Mother had a home and family of her own to care for, she made the trip over that hill every day to help nurse him in his fatal illness. She was usually up and gone before we children left for school in the morning. Three months after Tom died, his wife, my Aunt Fannie, gave birth to a lovely little baby girl whom she named Josephine in honor of her Father, Thomas Joseph.

Again, Mother did not escape! She herself came down with typhoid fever and was very sick for a long time. Grief over the loss of her beloved brother, so close to her since childhood, and the long strain of caring for him in his illness, had taken their toll.

Aunt Fannie lived on with the old folks, according to the bargain, and she now had a tiny baby to care for which partially diverted her mind from her own loss. When the old folks passed on she sold the place to Joe Collins, co-owner of Collins and Orland Hardware Company, then located between Hodgins Drug and The First National Bank on the corner of Third and Main, but not until her eldest daughter, Anita, had finished college here and was married to the fine young civil engineer she had been "going steady" with for the past five years!

Banks Kinnison was a strapping big football player whose name was a sort of household word among the sports fans then. (His younger brother, Frank, brother-in-law of Guy Wicks, followed in his steps as a football star on the U. of I. campus.) Banks and Anita had met at church when he was a freshman in college and she was a senior in high school. After Banks graduated from the University and had a good job, and Anita had finished her college work, they were married and moved far away to Boston, Massachusetts. Then it was that Aunt Fannie, who had been studying nursing by correspondence, sold the old homestead to Joe Collins and moved with her other four children to Eugene, Oregon, where she entered the big Christian Church Hospital there and trained as a surgical nurse. In due time all four of the children graduated from the University of Oregon and went into careers of their own. Forrest, next to Anita, who graduated from Moscow High School with me in 1914, became a teacher before Uncle Sam called him into his service in World War I. Edward, named for his Uncle Ed just younger than my Mother, went on to train as a doctor at Oregon Medical College in Portland, and is to this present day a trusted physician in the West; he was a classmate of Dr. J. G. Wilson of Moscow. The two younger girls, Marian (recently deceased) and Josephine, married well after finishing college at U. of O. and seem to have plenty of money to go gallivanting around over Europe whenever they wish. Uncle Tom would have been proud of his young widow who raised a family of five children without a Father, and put them through college. It can be done!

Aunt Fannie herself, after a long career as a surgical nurse, died in California of cancer of the lungs. Of course, she had never smoked a cigarette in all her life, and did, in fact, belong to a generation that looked with considerable contempt on a "bold, brash woman smoker." But she had for years breathed the fumes of chloroform and ether in surgeries not equipped with air conditioning as they are now, and the result--irritation of the lungs--was the same.

Banks Kinnison also died of something as unlikely for him as lung cancer was for Aunt Fannie--leukemia, of all things! I had seen him in Los Altos only a few years before, when he and Anita were building a beautiful new home in the surrounding hills. Banks was a big, handsome, six foot, outdoor man--the very picture of health! But he left Anita some lovely children to be proud of, who will look after her.

Not long ago when I wrote to thank Anita for the generous gift and birthday card I had just received from her, I told her I was writing this pioneer history of her Grandparents and mine, and solicited her help in refreshing my mind on a few points. She wrote back a letter that made me laugh, and brought to mind again this modern "generation gap" we have been hearing so much about. I am sure she would not mind my telling this, as one of the main characters in this little drama is our own pioneer grandmother!

As a matter of background, Aunt Fannie was always one of those "neatnicks" who looked like she had "just stepped out of a bandbox." (As often as I heard my Mother use that expression, it never occurred to me to ask her what a "bandbox" was. I still don't know!) Fannie, also, always dressed her girls in the very latest. In those days all girls and women wore those horrid, thick black cotton stockings, as rayon and nylon had not yet been invented. When ladies wished to be especially dressed up, they wore black cotton lace ones! I still have a pin cushion my Mother made out of an old black lace stocking over bright silk, so lace stockings are not quite so "new" as some of our modern generation seem to think! But, styles change, and, when Anita and I were little girls, white cotton stockings began to come into fashion. However, I cannot recall that my ultra-conservative Mama ever got any for me! Aunt Fannie was the first to dress little Anita in white cotton stockings. I understand our Grandmother was shocked! This was just "too utterly utter" and she expressed herself very frankly about it. But Anita loved her white stockings, so wear them she must. A way to bridge the generation gap was hit upon. When this little girl left for school in the morning she was very properly dressed in her heavy, black, cotton stockings. But down in her school bag, nestling against her books, was that precious pair of white stockings! On the way to town, when privacy was assured--there were no cars then to go whizzing by--Anita would sit on a bank by the side of the road and change into her beautiful white stockings, arriving at school all dressed up! On the way home again the same change-over was accomplished and she arrived back under Grandmother's roof properly clothed in her black stockings! The fearsome generation gap had been bridged and everyone was happy! I really had to laugh when Anita wrote me this little story of those early days with Grandmother, because I had never heard this one before.

Anita and I were but seven months apart in age, so we sometimes got together just to play, as two little girls will. I especially remember the day she was visiting me at the brick house and we discovered a big wooden packing box that we thought would make a wonderful "store"--I can point out now the very spot where the box stood! We secured an apple box for a counter and took turns selling each other beautiful pink pencils made by wrapping ten-penny nails in pink tissue paper. Our medium of exchange was money cut from a pasteboard shoe box. It was great fun! I do not know why this particular performance stands out so clearly in my mind, but perhaps it is because it was such a thrill to be a store clerk for the very first time! And those pink pencils were awfully pretty, we thought.

Anita has cordially invited me to visit her at Los Altos, and maybe sometime I will do so. I know we would have a lot of fun seeing how many childhood memories we can recall!

CHAPTER 23: CAPT. EDWARD TAYLOR--WEST POINT

The youngest child at the time of the uncovered wagon trip to Walla Walla in 1871 was little "Eddie" who was about three years old and just younger than my future mother, Minnie. But he was not to hold the distinction of being the baby of the family long.

When the wagon pulled out of Walla Walla, headed for what is now our Moscow, little month-old Baby George had taken his place.

One time while visiting with Mrs. Jay Woodworth before her death at the Latah Convalescent Center, I happened to mention my Uncle Ed. Oh yes, she remembered Ed well! She said he used to play the harmonica at school "for us children to march around the room by." I learned the interesting fact that this first Russell School was a two-room affair, with the upper grades in one room and the lower grades in the other. Ed was in the upper grades and she, tiny Lilly Lieuallen, in the lower. So in the wintertime, or in otherwise inclement weather when the children could not play outside at recess time, they got their exercise and fun by marching around their rooms to harmonica duets by Ed Taylor and Cliff Cochran. Lilly, who was herself musically inclined, looked up with much admiration to handsome young Ed and his skill on the mouth organ. When weather was such that the children could play outside--the girls on the swings and the boys pitching horseshoes, their only playground equipment, Ed and Cliff again played those duets to march in by. Since I was told this I have wondered if this stirring martial music as a boy may have planted in Ed the seed-thought of becoming a soldier when he grew up. Maybe so, for he did just that.

I could find no record of Ed's having attended the University here, but that was explainable when I looked up dates. There was no University here when he left for West Point! So, I do not know how he was chosen for the Military Academy, but probably through political recommendation. Prep School, as we called it, opened here in 1892, and Ed graduated as a first lieutenant in the United States Army in 1893. An old Military Academy yearbook at our University library lists him as follows:

Edward Taylor
Born in Illinois
Entered from Idaho
Graduated in class of 1893
First lieutenant in 121st infantry
Died in Philippines Dec. 26, 1899

I know that he was married while still at, or just leaving, the Academy and that he and his wife and child were living in St. Louis when the Spanish-American War broke out. What he was doing as a military man in St. Louis, I do not know.

Here on my University campus stands a statue dedicated to the first University of Idaho volunteers who lost their lives in this Spanish-American War, Second Lieutenant Paul Draper and Sergeant Ole Hagberg. As all who have seen it know, it depicts a life-size soldier at rest, his gun beside him and his eyes turned toward the mountains beyond our town. (The tall trees have obscured that view by now.) It has suffered from vandalism again and again, been toppled from its pedestal, breaking its arms, and been painted in wild colors. I hope that some day those broken arms will be replaced. Although these two men, in whose honor the statue was erected, were the first University of Idaho volunteers to forfeit their lives in the Philippine Islands, neither one died in battle. Lieutenant Draper was drowned while trying to rescue some of his men from a swollen, turbulent jungle river, and Sergeant Hagberg was stricken with the everpresent typhoid fever in the Islands and died in a Manila hospital.

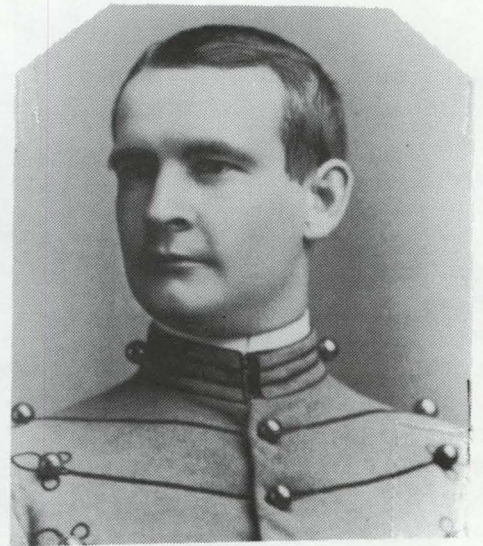
Uncle Ed, too, lost his life in a most unmilitary way. He was crossing a high bridge on his beloved horse when an unscheduled train came thundering down upon them. He could have dismounted and saved himself, but he tried to save his horse, also. Just as the train reached them his horse shied and threw him across the tracks in front of



Ed Taylor graduated from West Point in 1893. Sword with name engraved now in Latah Co. Pioneer Museum.



Laura Taylor, Ed's widow, with Mother after Ed's death. Erickson Studio, Moscow.



Edward Taylor, 1868-1889, was Capt. Edward Taylor when he lost his life in the Spanish American War.

the engine. He was horribly mangled and lived but a few days in the hospital there. His body was shipped to America and is buried among "the honored dead" in Arlington Cemetery. At one time my parents and I visited this cemetery and were directed to Ed's grave. I took a picture of the marker. I assume that he is buried in the same portion of the cemetery as Draper and Hagberg and all other victims of the Spanish-American War.

At the Capitol Building in Boise there is a beautiful memorial plaque dedicated to all the Idaho boys who lost their lives in the Spanish-American War. Heading the list is Captain Edward Taylor, followed by a Lieutenant "Somebody"--suggesting that the list was composed in order of rank rather than in sequence of death. Mother had told me that Ed had been promoted to Captain while serving in the Philippines.

About a year-and-a-half after Ed's death his young widow, my Aunt Laura, came West from her home in St. Louis to visit his parents and relatives, bringing with her their beautiful two-year-old girl, Lucille. They were guests for some time in our home at the brick house.

It happened that while they were there my seventh birthday in August was coming along, so Aunt Laura conceived the brilliant idea of throwing a birthday party for me! Mother thought that would be very nice, as I had never had such a party before. So she furnished Laura with the names of all the children of her friends who were in my age bracket, and Laura wrote neat invitations to them all.

Before this gang of enthusiastic children arrived, Lucille came to me while I was pumping water at the well by the kitchen door and held up to me my birthday present from her and aunt Laura. It was the most beautiful bisque doll I had ever seen! She was dressed in pink "China silk" with black patent-leather slippers, and had long blonde hair and blue go-to-sleep eyes. I immediately named her Lucille after my adorable little cousin. The only dolls I had ever had up to then were my beloved

rag doll, Allie, and that cold, staring-eyed china doll, Mabel, that I was not particularly fond of. But this little Lucille was a beauty. I could comb and braid her hair and watch her go to sleep in the little wooden cradle my adoring papa soon made for her. (I still have her--and Mabel, too.)

But back to the birthday party! While the other children were having a wonderful time playing on the big lawn--drop-the-handkerchief, ring-around-the-rosy, blind man's bluff, and other games, the guest of honor was feeling very much out of place! I had not been used to playing with other children, as we lived far from town with no close neighbors, and we seldom had company for there were no cars in those days. My only playmate since I was five years old when we moved from town had been my brother. So during a change in games I slipped away from the others and went to lie in the woven-string, black-and-white hammock, hanging on its standard in front of the big dining room window. There Mamma or Aunt Laura spied me and came hastily to see what was the matter. Was I sick? Not knowing how to explain my unseemly conduct in being such a poor hostess, I latched on to the word "sick" and the little imp on my shoulder whispered in my ear that I should tell them I had a "headache"--Fine! A good way out. So I told them. They were very sympathetic, of course, and hoped it would soon pass. It did, miraculously, just about the time the delicious birthday cake and equally delicious home-made ice cream were about to be served! That is my first remembered "little white lie," and like the starved red bird, it has been on my conscious ever since!

The only child I remember in that little birthday party was fiery-haired Leon Owings, son of my parents' friends, Mr. and Mrs. Sam Owings. (Mr. Owings was the editor of a Moscow meekly, The Times Democrat.) I have since wondered if I remember Leon at this party (and previously as a small child at Kindergarten on Main Street) because of his bright red hair or because he was such a little "dickens." Both, I suspect! Leon carried those distinguishing characteristics through high school where he was known as "Sody" and was the bane of all his teachers. I never could understand how anybody could be so "ornery"! Once he unscrewed something under the desk chair of my favorite teacher, Miss Minnie Smith, a rather plump lady, and when she sat down in it, over she went backwards! But that little trick was mild to what Leon could conjure up. He had the brains, and just had to be doing something out of the ordinary!

Anyway, Leon or not, this birthday party for me was a huge success--for the rest of the children! For the bashful little guest of honor it was a painful ordeal. But, somehow, she lived through it.

One of the trophies which Aunt Laura brought my Mother was Uncle Ed's Military Academy dress-suit with its engraved sword bearing his name. But the moths worsted the suit before the days of evil-smelling moth balls--a great grief to Mother! However, no well brought up little pioneer girl ever threw away something that could be made out of, and Mother was a past master at this art. So she cut up the suit and made a chair cushion out of the good parts. (I still have that cushion.) But the sword was not moth fare, and it is intact for the Pioneer Historical Museum.

Another one of Ed's very personal things was a large family Bible-sized photo album with its beautifully engraved leather back and big brass clasp. In this are many pictures of the Academy campus and Ed's buddies in the military. Also, many pictures of his encampment in the Philippines, which he had sent home to his wife. The loveliest gift, however, was the elaborate, ceramic-lined silver pitcher swinging on its beautiful silver frame and engraved with the insignia of his company at West Point which the fellows had given Ed and Laura as a wedding present. A valuable antique now!

Laura explained that she would soon be leaving St. Louis and did not want to cart these heavy things around all over the country with her; she may even then have been engaged to marry the Naval surgeon who later lost his life with yellow fever during the digging of the Panama Canal.

One thing Aunt Laura did not forget, however, when she came "out West" to visit her husband's sister and his parents, was that there was a little girl out there who might benefit from some of her lovely clothes. Among these was a gorgeous yellow ball gown, which must have been beautiful on her with her expressive brown eyes. Mother was happy to receive it, and later hired a dressmaker to make me the prettiest dress any little girl ever had! With the ball gown was a pair of beaded black satin dancing slippers which she offered to me if I could wear them. Of course I could--and would! But I didn't realize at the mature age of seven that Aunt Laura's dainty little feet were just about a half-size smaller than my seven-year-old ones! But I wore those slippers, pinch or not--around the house, of course. I felt so dressed up! What was that about pride going before a fall? I have had a tiny corn on each little toe ever since!

Lucille herself became a writer particularly interested in Indian lore, and has sent me from California an autographed copy of such a book which shows much historical research. Although she had at one time married, she chose her pen name, L. Taylor. This book is also slated for the Latah Pioneer Historical Museum.

A LETTER HOME

The following letter to Mother from her brother, Edward Taylor, mailed at Mattoon, Illinois, on November 9, 1888, following their brother Abe's death, was found in her velvet-covered photo album. I think it should be included in this family history. The poem is without doubt his own.

Loxa, Ill. Nov. 9, 1888

Dear Folks

I received the sad news of Abe's death tonight, I got the letter Monday stating that he was sick and indeed it was a shock to me. It does not seem possible that so short a time could make such changes. The news though heart rending became much more so when received in a distant land with no sympathizing friend to go to for comfort. There is but one consolation, that during his last illness he was at home and loving hands cared for him. Tonight it is raining and if ever man saw a dreary night I do see one tonight. And as I look back over his past life I can say he has always done the best he knew how. No man can say Abe wronged him in any way. I have often thought he would not see ten years more but I expected to shake him by the hand again when I went back home.

But I suppose it is all for the best for he never enjoyed good health and would perhaps after a few short years of suffering died away from home and friends; and now we know he is free from pain and the disappointments which this life brings, it must be lonesome at home now but do not be uneasy about me I am in a healthy country and the change of climate is good for me. I feel as well as I ever felt in my life.

I hope this letter will find all the rest of you enjoying good health. I was afraid some of you would get sick when I left. It was so unhealthy there this fall. I did not feel well for a month before I left there but I feel allright now. Well I must close as I said before do not be uneasy about me. Give my best regards to all.

Yours with love,
Edward Taylor

O Brother slumber on in peace
Close by thy home and kindred dear
The trials and cares of life have ceased
And thou shalt rest through coming years.

No more the furrow shall you turn
Nor reap the harvest's golden grain
Never on earth shalt thou return
Unto thy mountain home again.
No more the coming of the morn
Shall rouse thee from thy peaceful bed,
No more the echoing of the horn
Shall call thee to thy daily bread.

Though thou art dead thy memory dear
Will still remain and cherished be
Until the lapse of few short years
Shall bring us each to rest with thee.

BOOK REVIEW

Northern Pacific Views: The Railroad Photography of F. Jay Haynes, 1876-1905.
Edward W. Nolan. Helena: Montana Historical Society, 1983. 206 p. \$24.95. Cloth.

Historical research in the Pacific Northwest has been greatly enhanced recently with the acquisition and processing at historical societies and libraries of several large and significant photograph collections. More and more frequently these archival depositories are assisting in the publication of handsome books highlighting some of the photographs from their collections. A case in point is the recent publication of Mining Town by Moscow's Patricia Hart and Ivar Nelson, which publicizes photographs from the Barnard-Stockbridge collection at the University of Idaho. Another is this book by Edward Nolan, archivist at the Eastern Washington State Historical Society in Spokane, which highlights over 200 of the 9,500 photographs in the F. Jay Haynes collection, donated to the Montana Historical Society in 1978.

Frank Jay Haynes (he preferred F. Jay) was born in Michigan in 1853 and became fascinated with photographs in 1874 while working for a photographer in Wisconsin. In 1876 he moved to Moorhead, Minnesota,

on the Dakota-Minnesota border. Moorhead was an important terminus on the Northern Pacific Railroad, and the NP at this time was rapidly pushing west in its effort to complete a transcontinental line. The railroad was interested in photographing areas along its route so it could promote settlement. Haynes, a skilled photographer and a better entrepreneur, negotiated with the NP and began a lucrative business arrangement with the company that lasted until 1905.

Haynes followed the railroad west, at times traveling in his own Pullman Palace car gallery, taking photographs in North Dakota, Montana, Idaho, Wyoming, and Washington. He is particularly well-known for his "National Park Views" of Yellowstone, which helped to spread the fame of that natural landscape in the 1880s and 1890s. For nearly 30 years he supplied the vast majority of publicity photographs utilized by the Northern Pacific. Haynes provided the railroad with pictures to be used in advertising, and thousands of large mounted photos which railroad officials hung in public offices and exhibited at county fairs. All could then readily view the glories of "Northern Pacific Country," and it is no exaggeration to say that Haynes helped to populate the West. My grandfather, for one, was intrigued by NP advertising, which no doubt featured some of Haynes' work, and

took a one-way \$11.00 excursion from Wisconsin to North Dakota on the Northern Pacific in 1905, settled and raised a family--just as the railroad hoped people would when it hired Haynes and other publicists.

Even while working as the self-appointed "official photographer of the Northern Pacific," Haynes maintained a private studio--first in Moorhead, and later in St. Paul. Between the time he stopped working for the railroad and his death in 1921 he continued as a studio photographer, adding thousands of images to his collection. Upon his death, Haynes' photographs became the property of his son Jack, also a photographer. When Jack died in 1962 his widow, Isabel, became caretaker of the massive collection, which had grown to over 23,000 negatives with the inclusion of Jack's work. Often such photographic collections are merely thrown away by heirs. Luckily for Northwest historians, Isabel Haynes donated the entire collection to the Montana Historical Society, as well as family and business papers to Montana State University. Burlington Northern, Inc., provided a grant to the Historical Society which made publication of Northern Pacific Views possible.

The photographs in the book were printed from Haynes' original glass plate negatives and are generally of excellent clarity. There is wide diversity in the 210 images selected for publication. Of course, railroad buffs will find the most to be pleased with, as the volume has excellent photos of locomotives, interiors and exteriors of cars, depots, and some fine views of railroad construction. But there is more here, too--agricultural scenes, natural wonders, town and city photographs.

The Haynes collection at the Montana Historical Society contains images of Moscow and the Palouse country. Haynes regularly traveled the Northern Pacific route with railroad publicist E. V. Smalley, whose "Pullman, Palouse City and Colfax," published in Northwest Magazine in 1892, remains one of the best early descriptions

of the Palouse country. The NP reached Colfax in 1883, Genesee in 1888, Moscow in 1890, and Juliaetta in 1891. It is likely that Haynes, like Smalley (and perhaps with him), visited and photographed all of these towns and places in between as well. Unfortunately for Palouse residents, none of these views appear in the book. But there is still much here of local and regional interest, including photographs of Burke, Rathdrum, Spokane, Missoula, Ellensburg, Coulee City, and the Columbia River Gorge.

Haynes was not an innovative photographer--not an artist with a camera. His primary interest throughout life was to make a comfortable living from his craft, which he did. He left an estate of more than a quarter-of-a-million dollars when he died. His primary significance lies in the fact that he provided excellent historical documentation of places throughout the West. Still, while not a W. H. Jackson or Ansel Adams, Haynes was a skilled practitioner and some of the photographs selected for inclusion in this book are extremely moving and of first-rate artistic quality, such as the ones of Muir Glacier in Alaska, Gibbon Falls in Yellowstone, and Snoqualmie Falls, Washington.

The photographic reproduction in Northern Pacific Views is excellent, but this is more than just a handsome coffee table book. Nolan has provided considerable text which gives background not only on Haynes, but also on the role of railroads in settling the West, and of how photographic entrepreneurs fit into the railroads' plans. It is not, however, a history of the Northern Pacific, and as Nolan acknowledges, such a history still desperately needs to be written.

Northern Pacific Views has a sturdy sewn binding, an index, and a brief bibliography. At less than \$25, it is a relative bargain by today's book pricing standards.

--Keith Petersen

KEITH PETERSEN is book review editor of this journal.

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In 1968 interested individuals organized the Latah County Historical Society to collect and preserve materials connected with the history of Latah County and to provide further knowledge of the history and tradition of the area. Every person, young or old, who is interested in the history of Latah County and who would like to assist in its preservation and interpretation is cordially invited to become a member. Subscription to this journal and a discount on books published by the Society are included in membership dues. Dues for the various classes of membership are as follows:

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The Society's services include conducting oral histories, publishing local history monographs, maintaining local history/genealogy research archives and the county museum, as well as educational outreach. The Society wishes to acquire objects, documents, books, photographs, diaries, and other materials relating to the history of Latah County. These are added to the collections and made available to researchers while they are preserved for future generations.

The Society is housed in the William J. McConnell Mansion, 110 South Adams, Moscow. The museum is open from 1:00 to 4:00 p.m. Wednesday through Saturday. Visits to the museum or research archives are welcomed at other times and can be arranged by calling (208) 882-1004.