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THE  
CLAYTON/DEER PARK  
HISTORICAL SOCIETY

# Mortarboard

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## CONSTRUCTION OF THE ARCADIA ORCHARD IRRIGATION SYSTEM DEER PARK, WASHINGTON

By Peter Coffin

### THE ARCADIA ORCHARD PROJECT

From 1895 to 1905, many irrigation projects in the Pacific Northwest were planned, promoted, and constructed. Historian, John Fahey, described these Spokane area projects as, "...speculative schemes devised to sell land otherwise unsalable--and at an immoderate profit." (Fahey, 1993-2, p. 7). Large areas of cut-over, semi-arid timber land, not easily cultivated, or too dry for conventional farming, were available for irrigation projects. The promotion was that irrigation could turn these marginal lands into profitable orchards. The Spokane Valley and several areas near Deer Park qualified for such projects, with the presence of nearby lakes and streams as sources of irrigation water.

The Arcadia Orchards Company, organized by Floyd L. Daggett and his brother-in-law, John D. McIntyre, developed the areas near Deer Park. Daggett was an insurance agent and a mayor of Spokane, while McIntyre was a Seattle engineer who had helped design other irrigation projects in central Washington (Fahey, 1993-2, p. 2). They purchased over 4000 acres

south of Deer Park, and began promoting the project by selling small parcels of land (generally of 10 acres) to be developed and delivered to the new owner, as a complete, irrigated, and profitable orchard.

When Arcadia Orchard Company began promoting the idea to the public, the demand was very strong (Fahey, 1993-1, p. 3-4), and the construction of the irrigation system and purchase of more raw land began. Figure 1 shows the location of the major irrigation canals and the lands owned by the Arcadia Orchard Company in late 1911. Surveyors were hired to lay out the main distribution canals from a source of water to the northwest, in Loon Lake, that would provide water to areas both north and south of Deer Park. A main canal was designed to carry water from Loon Lake to the southward, flowing into Dragoon Creek north east of Clayton, Washington, as well as further east to orchard lands, northeast of Deer Park. This was the "High Line Canal". Dragoon Creek carried part of this lake water downstream from the High Line Canal to a reservoir

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Figure 1: Map showing the lands owned by the Arcadia Orchards Company in 1911 and the locations of both the High Line and Low line canals. (Peter Coffin map from original in offices of Ramer Inc.)

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to the orchard lands, west of Denison, Washington.

constructed just north and west of the town of Deer Park. From this reservoir, the water would be carried by a "Low Line Canal" south

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The photographs in this essay come from the collection of Gordon F. Daggett, son of Floyd L. Daggett. The collection is owned by the Spokane City Library and located in the Northwest Room of that organization. Gordon Daggett was given a job, as an assistant engineer (Fahey, 19??, p.13) for the project, and he took photographs of the canals, flumes, Dragoon Creek dam, and the men who surveyed and constructed the irrigation project, as well as other pictures of northeastern Washington. Almost all of the Daggett photographs are of construction of the Low Line Canal and the Dragoon Creek dam. Nearly all the photographs show spindly trees in the background. These trees are all that remained, after twenty years of logging the forests for lumber and clearing farm land. None of the virgin forests, that covered the land when the settlers arrived, remained in the Deer Park area in 1908.

## **SURVEYING THE IRRIGATION SYSTEM**

The irrigation system was designed to deliver water to the orchards, by gravity, from the hilly terrain northeast of Clayton, Washington across the gently southerly sloping lands north and south of Deer Park. Accurately surveying the land for both the path of the irrigation system and the legal division of the tracts for new owners was necessary. At present, not much is known about the company hired to do the survey. However, Mr. Larry Benson

of Ramer Associates, a surveying firm, has indicated that they were excellent surveyors. Mr. Benson's firm has many of the original survey notes and maps drafted for the Arcadia Orchards Company. Mr. Benson's firm has found the one hundred year old survey work to be very accurate, in contemporary surveying, in the areas around Deer Park.

The survey performed work in three major areas. A trunk line of main distribution canals needed to be laid out to deliver the water to the two large areas of orchard lands. The contours of the land itself needed to be mapped so that the gravity irrigation distribution of the water could be efficient with a minimum need for pumping. Lastly, and perhaps most importantly, the governmental sections of the land needed to be divided into the ten-acre tracts, that would be sold to the public as finished orchards.



**Figure 2: Photograph of a field survey crew in the Arcadia Orchard project in about 1908. Note that all the men are wearing ties, a sign of a professional at the time. (Courtesy of the Northwest Room, Spokane Public Library)**

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## CANAL AND FLUME CON- STRUCTION

At the beginning of construction, the canals were excavated by horse drawn excavators in the areas where the soil was easy to move. A photograph of the cut shows a large crew of men near the partially dug ditch (Figure 3). These early canals did not prevent water loss into the soil, and later improvements to the



**Figure 3: Photograph of horses and men digging a canal ditch. (Courtesy of the Northwest Room, Spokane Public Library)**



**Figure 4: (Above) Ditch building south of Deer Park. This cut was most likely in the area of Dalton Road and US Highway 395. (Courtesy of the Northwest Room, Spokane Public Library)**

concrete pipe, cast at the Deer Park Ornamental Stone's plant.

In several places, hard basalt rock had to be excavated, so the Low Line Canal could cross a low ridge south of Deer Park. Figure 4 shows about thirty men

**Figure 5: (Below) A water filled ditch cut into difficult ground near Deer Park. (Courtesy of the Northwest Room, Spokane Public Library)**



canals included lining the canals with lumber and rebuilding many distribution canals and flumes with



**Figure 6: A construction crew and a large flume structure south of Deer Park. The writing on the original picture indicated it cost over \$7000 dollars at the time. (Courtesy of the Northwest Room, Spokane Public Library)**

timbers (Figure 6) and looked more like railroad trestles than irrigation canals.

Smaller flumes were originally dug into the dirt as well as constructed of lumber carried water from the main trunk canals to the orchard fields. Figure 8 is a photograph of such a wooden flume filled with irrigation water.

All of the saws, shovels, picks and other

**Figure 7: (Below) A small wooden distribution flume on relatively flat ground. Another, similar flume can be seen in the background. (Courtesy of the Northwest Room, Spokane Public Library)**

in an incomplete rock cut, about ten feet wide and forty feet long with rocks piled on either side of the cut. Figure 5 shows a water filled canal dug into similar rock.

Large flumes constructed of wood carried water across topographically low areas. These flumes were constructed of large



**Figure 8: (Above) Photograph of a portable blacksmith shop used for equipment maintenance during the construction of the Arcadia Orchard canal system. (Courtesy of the Northwest Room, Spokane Public Library)**

assorted equipment needed for the construction project required constant sharpening and repair. A portable blacksmith shop provided this service and is shown in Figure 8.

## **THE FIRST DRAGON CREEK DAM**

One of the largest structures constructed for the Arcadia Orchard irrigation system was the Dragoon Creek dam. In order to get Loon Lake water to the orchard lands south of Deer Park and west of Denison,

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Dragoon Creek had to be dammed and the Low Line Canal diverted from this reservoir northwest of Deer Park. The dam was located just upstream, from where the Spokane Falls and Northern Railroad's trestle crossed the stream. Figure 10 is a picture of this trestle and it doesn't look as substantial as the flume trestle in Figure 7.

The Daggett collection of pictures



**Figure 9: The Spokane Falls and Northern Railroad's trestle on Dragoon Creek just below the dam. A portion of the dam's wooden flood spillway is seen in the foreground. (Courtesy of the Northwest Room, Spokane Public Library)**

shows this early dam construction to be of dirt filled timber construction. As part of the dam, a dirt filled timber levee had to be built on the southeast side of Dragoon Creek, as there was little topographic



**Figures 10 and 11: Two photographs of the wood timbered levee south and east of the Dragoon dam spillway. In the background are some of the houses north of Deer Park. (Courtesy of the Northwest Room, Spokane Public Library)**

separation between the courses of Spring and Dragoon Creeks, and the levee was needed to impound sufficient irrigation water.

The dam itself is shown in Figures 12 and 13 to be of a similar dirt filled construction across the main creek channel. The photographs show, the shoulders of the dam being constructed by a large number of horse-drawn scrapers, hauling the fill dirt to the top of the structure. In the center of the picture is a timber structure housing the valves controlling the flow of the water into Dragoon Creek.

In Figure 14, the finished dam is partially shown with a lumber covered flood spillway, just to the north of the dam proper. This dirt and lumber dam was replaced in 1913 with a concrete structure still in existence. A 1913 *Deer Park Union* newspaper article described the completion of the concrete dam replacing this structure

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**Figures 12 and 13: Photographs of the Dragoon Creek dam and spillway under construction. In the top picture the town of Deer Park can be seen in the background. The dam structure proper is the horizontally timbered structure in the center of the photograph. The function the steam tractor and the drive belt had is not clearly shown. (Courtesy of the Northwest Room, Spokane Public Library)**

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and indicated that portions of the old wooden dam were in danger of being washed out.

### CONCLUSION

Gordon F. Daggett's photographs show portions of the Arcadia Orchard Company's irrigation system under construction, in approximately 1908. Most of the pictures have no captions so their exact location is unknown. Fortunately, the photographs of the original Dragoon Creek dam and levee can be easily identified, and three others in the set of construction pictures do have writing on them identifying them as



**Figure 14: The finished Dragoon Creek dam with the flood spillway in the foreground with the dam and valve works behind it. (Courtesy of the Northwest Room, Spokane Public Library)**

being "...south of Deer Park...". Many of the pictures show large groups of men (and horse teams!) indicating how hand labor intensive the construction of this irrigation project was in the first decade of the twentieth century.

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Peter Coffin (2010)

## Calendar of Events

Event	Date & Time	Location
C/DPHS meeting	May 8, 2010 9am	Clayton Drive-In
Zion Hill Cemetery Cleanup	May 22, 2010 9am	Mason Rd, 1/4 mile West of Spotted Road
Friends of the Library Book Sale- <i>Set Up Sales</i>	Week of –June 2-5 June 2 & 3 10am to 4pm June 4 & 5 9am to 5pm	Deer Park Auto Freight Storage Building, 2405 E Crawford, Deer Park
C/DPHS meeting	June 12, 2010 9am	Clayton Drive-In
Raspberry Ridge Field Trip	To be determined	Near Fairchild AF Base
Old Settlers Picnic <i>Display at Mix Park</i>	July 24, 2010	Deer Park Mix Park
Clayton Brickyard Day <i>Display of Memorabilia</i>	August 7, 2010	Clayton School
<i>Eagle Dedication</i>	August 7, 2010 1pm	Clayton Drive-In
Leno Prestini Show <i>The Heritage Network is presenting three congruent shows of Leno's paintings, sketches, memorabilia and life as a Terra Cotta modeler.</i>	August 7-22, 2010	Main Street, Colville, Stevens County Historical Society
	August 14, 15, 21,22	Loon Lake Museum, Loon Lake Historical Society
	August 14, 15, 21,22	Clayton Grange, C/DPHS
Clayton Fair	August 27, 28, 29, 2010	Clayton Fairgrounds



**SCENIC COLVILLE AND ECHO VALLEY  
IS EASILY REACHED BY MOTORISTS  
This Trip Is One of the Most Beautiful Near This City.**

**By Allen C. Klein**

Originally printed in the *Spokane Daily Chronicle* on Jun 9. 1914

One of the many beautiful auto trips from Spokane is the one through the Colville and Echo Valley.

You leave Spokane by way of North Monroe Street and Country Club Road to Dartford on the Little Spokane, thence north on the new state road through a canyon bordered with pines and enlivened by a noisy stream hurrying on to Dartford, thence across the fertile Half Moon Prairie and through the Arcadia Orchards to Deer Park.

From Deer Park there are two routes—one by way of Clayton, where the extensive manufacture of white brick and all kinds of terra cotta is a matter of interest, and from there a run of six miles to beautiful Loon lake. The other route goes north on the old Colville stage road, much traveled in early days by the Hudson Bay Company's trappers.

On this road, seven miles from Deer Park, you pass a white clay mine, from which clay is shipped to Canada, and there manufactured into dishes. This clay deposit is said to cover 40 acres. The run from there to Loon Lake is about seven miles.

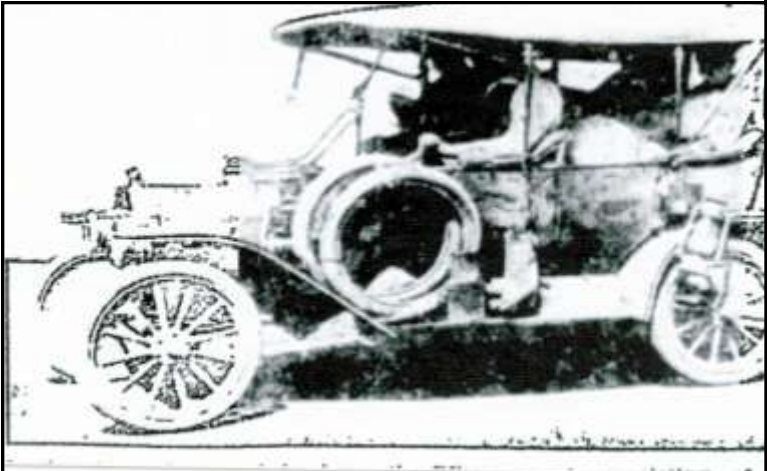
**Beautiful Colville Valley**

From Loon Lake you go by way of

Jump-Off-Joe Lake and strike the Colville Valley at the little town of Valley. The next 32 miles are in the Colville Valley, whose beauty, fertility, and potential wealth are admitted by all who know it.

Eight miles from Valley, you come to the town of Chewelah, nicely located in the east side of the valley. Chewelah is regarded by many as the most promising town in the valley. The Chewelah copper mines, which are now attracting so much attention, are located four miles northeast of the town.

Going north through the valley from Chewelah to Colville, a distance of 24 miles, you pass through the town of Blue Creek and Addy.



This Ford car, pictured next to above article in the *Spokane Daily Chronicle* was driven from Oklahoma to Spokane. The occupants planned to go on to Peaceful Valley, Alberta, Canada. This is the vintage of car available for our scenic ride in 1914.

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### **Good Trout Fishing.**

Going north from Colville along the foothills about four miles, you come to the mouth of Echo Valley. Here you strike Mill Creek, a fine mountain stream with good trout fishing. Eight miles from Colville you come to Echo post office, a very attractive spot, turning north from here a distance of eight miles over the old stage road, that crosses or follows numerous small streams and passes many inviting camping places, you come to the end of the valley. The natural charm of Echo Valley is very striking. The mountains are nearer and more abrupt than elsewhere on the trip. The numerous streams with their changing scenes and green borders delight the eye.

On the return trip, you take the Douglas Falls Road at Echo and pass Douglas

Mountain, a very high peak, and also Douglas Falls, a most beautiful spot on Mill Creek. About two miles further on you cross Mill Creek again and pass where old Fort Colville once stood. The historic associations of this spot make it a place of great interest to all who are familiar with the pioneer history of the northwest.

The return trip from Colville to Springdale can be made on the road covered by outgoing trip without loss of interest. From Springdale, you should return by beautiful Walkers Prairie, as the landscape at this point will attract even with the beauty of the Colville Valley and Echo Valley fresh in the mind.

From Walkers Prairie, you reach Long Lake and Nine Mile bridge, both points of interest whether already familiar or not. Thence a short run lands you in Spokane.

## **Clayton/ Deer Park Historical Society Minutes, April 10, 2010**

In attendance: Bill Sebright, Mark Wagner, Sharon Clark, Grace Hubal, Rob Higgins, Warren Nord, Lorraine Nord, Bob Clouse, Mary Clouse, Sue Rehms, Ella Jenkins, Lonnie Jenkins, Pete Coffin, Marilyn Reilly, Karen Meyer, Roxanne Camp, Jeff Lilly, Don and Lorraine Ball, and Paul Erickson.

Society president Bill Sebright called the meeting to order at 9:03 AM.

Treasurer Mark Wagner reported that there is \$3,489.03 in checking. Account activity: \$26.73 for supplies. Deposits: \$281.00 from last meeting, \$1,500 anonymous donation for the eagle, and \$100 donation for the eagle. He is compiling a membership list with addresses, phone numbers, and email addresses.

Don Lindh's memorial service was really nice. Donations are coming in to the Society, per the Lindh family's request.

Marilyn Reilly reported Don and Carl's mother, Thelma, cooked for many years

at the Deer Park Hospital. Warren Nord said she worked at the Terra Cotta Plant many years ago.

Grace Hubal presented an American flag to Taffy and Randy for the flag pole to go with the Eagle. There is a framed certification which says the flag was flown over the White House on November 4, 1991. She also reported on the recipe book project which she is working on. Recipe submission forms are available. She will donate the first 100 cook-books. Grace will also keep the cost down so that we can make a profit.

Sharon handed out Mortarboard #24. She delivered our publications to Northwest room of the public library. Friends of the Library at the DP Library will give 75 percent of the book sales to the Society. Tentative dates June 4 and 5, Friday and Saturday. Sharon has a signup sheet for Society members who will work setting up the week before or for the sale

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Friday and Saturday. Sharon found an article dated June of 1914, which tells about a trip from Spokane to Colville to Echo Valley using two routes, one by way of Clayton. The Terra Cotta Plant was mentioned as an interesting place to see. The other route goes on the old Colville Road. On this road, 7 miles from DP is a white clay mine, the Gardenspot Clay Pit.

Bob reported our website had 417 fewer hits in March. Bob gave us an update on the Eagle project. We have received the Stevens County building permit. Jessica is our contact person at Knight Construction. She manages every project that comes through Knight Construction. We hope to powder coat the pedestal in black, that Knight Construction will start on about April 26. Knight Construction will do the concrete. Jessica couldn't get Jim to give us a bid right away. Knight Construction gave us a tentative bid of \$1,500, which will include all the rebar and cement. Sherwin Williams does powder coating. Bob brought the plaque which was paid for by an anonymous donor.

Pete made us current with the Veterans of WW II lists. He has a *Deer Park Union* hand out which includes numerous articles of interest---Peaceful Valley area,( perhaps west of Clayton), Snake Creek area (maybe between Clayton and Gardenspot,) White Pine, (a lumber camp north of DP somewhere), Windy Point, (West of Clayton.) All had columns in the Deer Park Union. He also has a binder of the 1891 Open Door Congregational Church Collection Book.

Bill reported on the Prestini Project. Arrangements have been made for the Prestini Display to be at the Clayton Grange. It would be a \$200 fee. Howard Richards showed Bill a storeroom with a locking metal door where valuable displays will be kept when not being displayed. This will take care of the security

problem that Tom Gardner brought up at the last meeting.

Karen Meyer presented the CDPHS two wonderful artifacts during the meeting this month. One is a time clock from the old Brick Plant. The clock was carried by the night watchman. The time clock is owned by Art Stelting and was once used by his dad, Jim Stelting. The heavy time-piece was passed around. The other is a sign from the Prestini Memorial Museum. Karen purchased the sign at the auction back in the 1980's.

The Heritage Network Celebrates the Life and Art of Leno Prestini---Clayton, Washington at the Clayton Grange on August 14 & 15, 21 & 22---10am to 4pm; Colville, Washington at 200 Main Street on August 7-22---10am-4pm; and Loon Lake, Washington at 4000 Colville Road on August 14 & 15, 21 & 22---10am-4pm. We need help with making and setting up displays.

Bill picked up a box of northwest history books from Tammy Hill at DPHS library; Pioneer Days Reviewed by Nancy Fisher and Etta May Bennett and a book on the history of the Open Door Church were of the most interest for our area.

There have been more than a dozen donations made to the Society under the name of Don Lindh. Thank you notes will be sent out and a list given to the Lindh family.

Marilyn Reilly gave us an update on Justin Peterson's project. He is raising money to send WW II Veterans to the Memorial in Washington, DC. Money is coming in from all over, including an anonymous donation of \$1,000. So far, they have raised over \$9000.

Florene Moore couldn't make the meeting but wanted all to know that the totem pole at the Spokane Fairgrounds was done by Leno. Also on lulu.com it is possible to self-publish books at little charge. They print them as ordered, once the book is on file. Friends of

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The Library meeting will be on April 15. Final plans for the book sale at the Deer Park Auto Freight building will be discussed. Don Ball talked about the Happy Home Church book.

The church is over 100 years old. Mark will bring the book to the next meeting.

Next meeting- May 8, 2010

Meeting adjourned at 10:05 AM.

Respectfully submitted by Grace Hubal,  
CDPHS Secretary

## Editorial Policy Regarding Correcting Errors and/or Omissions

Information published here is compiled from many sources, including personal memories. It is often difficult or impossible to verify such recollections through outside documentation. Our editorial policy toward the veracity of personal recollections tends toward the casual – since little harm is normally done by such errors. But our editorial process also invites public review and input regarding the accuracy of the information we publish, and when such review either suggests or reveals errors or items open to dispute our “Letters” department will act as a forum allowing the airing of such disagreements in an effort to ascertain the truth and correct any probable or demonstrated errors. We also believe it’s important that such disagreements be recorded, even if they can’t be settled to the satisfaction of all parties.

We encourage everyone to submit any arguments as to fact to the editor in writing — since the written form reduces the chance of further misunderstandings. As is standard policy, all letters will be edited for spelling, word usage, clarity, and — if necessary — contents. If advisable, the editor will confer directly with the letter writers to insure that everyone’s comments and corrections are submitted in a literate, polite, and compelling manner — as best suits the editorial image of this society’s publications.

## Society Want Ads

**WANTED:** Leno Prestini artwork. If you have or have access to any paintings, sketches, or sculptures created by Clayton artist Leno Prestini please contact the Society. We would like to feature either the original artwork or photos of the same at this year’s Prestini Project showing. For security reasons, the current owners of the materials may remain anonymous if that is their wish.

**WANTED:** Photos of local summer events such as the Old Settlers Picnic and Clayton Days. The photos

can be old or new as long as the submitter includes a caption for the photos and has the authority to permit reproduction of the image in the Society’s publications or on the Society’s website

**WANTED:** Old family recipes for inclusion in a future Society recipe book. Recipes drawn from any given family’s heritage are particularly desired — especially if accompanied by related family stories. Please submit to Grace Hubal, Society Secretary.

**WANTED:** Any stories, photos, or examples of traditional methods of quilt making.

**WANTED.** Your family’s story of settlement and early days in Clayton/Deer Park area.

Photos and stories of Clayton and Deer Park World War II veterans

**WANTED.** Information and photos regarding the history of Trysil/Zion Lutheran Church.

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