I REMEMBER
THE AGRICULTURE
OF UTAH
WELLS

Many of the valleys of Utah are blessed with a geologic formation that favors the flowing well. That is, the underground structure is layered in such a way that the water-bearing strata are covered with impervious clay or shale that keep the underground water confined under pressure. This confined water originates in surrounding areas that are higher in elevation than the ground surface in the valley. When a well is drilled or driven into the ground through the impervious layer to tap the underlying water, the pressure forces it up the pipe to the surface, resulting in a flowing well. The underground water pressure is called artesian pressure, so the flowing wells are, technically speaking, artesian wells.

But in Utah they are called "flowing wells," which to me is entirely proper. What better term could you find?

The life blood of rural Utah was symbolized by the flowing well. The domestic water supply for many homes in the country came from such wells. Even in the larger cities, where there is a water supply system, I have seen wells in back yards flowing freely or at diminished capacity as they had done for many years. In more recent years, however, most of these have been filled or capped.

While hunting for jackrabbit, I once found a flowing well in the most unlikely place imaginable. It was west of Salt Lake City in a dry, desolate area near the Great Salt Lake. The dry earth of clay was tinged with alkali and interspersed with greasewood, shadscale, and other salt resistant plants. From a distance I could see a patch of green on the horizon which at first I thought to be a mirage.

As I came nearer, it began to materialize into something more tangible. I finally came upon a sizeable clump of tules and water grass rimming a shallow pond. At one end of the pond, I heard the sound of running water. Investigating further, I found hidden in the cattails a square concrete pillar about waist high with a rusty iron pipe projecting from one side near the top. A steady stream of water was flowing from the mossy lip of the pipe. So I cupped my hands and took a taste. Although it did taste slightly brackish with a hint of sulphur, it seemed to be drinkable enough.
Someone had driven a well here a long time ago and had encased the pipe in concrete. There was no trace of habitation within miles. I heard only the running water and the peculiar purring chirp of a red-winged blackbird.

I have often speculated about who had sunk the well there—and why. But I wish him well, trusting that he now drinks cool, sweet water from flowing wells, wherever he may be.

I remember a well in Salt Lake City often referred to as "The Well." It was located in a residential section of the city, and it often took on the air of a public watering place. It was reminiscent of the wells we read about in Biblical times. The water flowed freely, and you had only to hold a container under the pipe to get the water. People would come from the next block, or from places miles distant, to get water from the well. They brought bottles, canteens, buckets, jugs and what-have-you to collect the precious liquid for their home consumption... despite the fact that almost all the people who came here had water in their houses supplied by the city distribution system. What appealed to them, I believe, was the absence of chlorine, the sweet taste of the pure liquid that came up from the depths.
I have a kinship with these people, for I drink water pumped from my own well at my home in the Sacramento Valley.

In my growing-up years in Utah, I remember the well driller going from place to place to sink wells. All those people living away from flowing streams or other surface water needed an underground source for their water supply and were often dependent on the well driller to get the water for them.

The location of a well was sometimes determined by a "water finder" or "dowser," a person who professes to have power to find underground water with a divining rod. A divining rod is a forked stick, often of willow, hazel or peach. The rod is supposed to be attracted by water much as iron or steel is attracted by a magnet. The dowser holds the stick parallel to the ground with the forked ends in his hands.

He then walks slowly around the general area where a well is desired. The pointed end is said to point downward toward the ground when it passes over a location of underground water.

The origin of this practice is lost in antiquity. But it seems that the divining rod was used originally to locate minerals. In the 15th century the Germans were known to use the divining rod to locate bodies of ore in the Harz Mountains. From Germany, the divining rod was introduced to England. As the mining activity declined in Cornwall, this practice was shifted to water finding. Then the immigrants brought this practice with them to America.

Dowsers were very common in the United States during the 19th and early 20th century. In fact, there are still dowsers today who will tell you where to drill your well.
Of course not all the wells in Utah were flowing wells. Some of them were dug wells that were relatively shallow. The dug well may be four feet in diameter or more, and may be deep enough to have water in it throughout the year. This type of well is almost always lined with brick, stone, or some kind of cribbing to keep the walls from collapsing. Water must be drawn or pumped from this kind of well because the water level lies below the surface of the ground.

The drilled wells are usually much smaller in diameter than the dug wells, and they are usually deeper. Their size is governed by the size of the drill and the capacity of the equipment used by the well driller. These drill holes are usually lined with a steel tube (casing) to prevent the unstable materials in the walls from slumping into the well. The casing may be perforated where it makes contact with a water-bearing stratum. Some of the drilled wells may be flowing wells, while others may have to be pumped.

The driven well, which is very common in Utah, is sometimes sunk by driving a casing or pipe which is provided with a conical point designed for this purpose. Water passes through the point or through perforations in the casing immediately above it. More commonly, however, an open pipe is driven directly into the ground, and a smaller flush pipe is placed inside the driven pipe. Alternate driving and flushing bring the pipe to the depth where water is found. Many of the flowing wells in Utah were driven in this manner.
Wells pumped by the power of the wind.
Barns and Farming

The early Utah settlers were remarkably flexible people. Regardless of their occupation before coming here, to some degree through necessity they became farmers. Their existence and that of their neighbors depended on the food and feed that could be wrested from the dry and barren soil. Even the homes of those who plied a trade or followed a profession often included a farmstead. And with the establishment of farms came the construction of barns.

Each farm and each farmer seemed to be an individual entity. Apparently there were no barns that could be called "Utah" barns, for there was no single distinctive architectural form that evolved during the early years of settlement. Many of them reflect the ethnic origins of the owners who came from various parts of Northern Europe and Britain. Others were built along the lines of the "Western" barn which had an extended peak at each end of the roof, with a ventilator at each peak. The common denominator among them, however, seemed to be that almost all of them were built of wood.

It seemed to me that the barn was often the most important building on the farm. All the agricultural activities centered on it. I was impressed by the huge size of some of them. They could store animals, hay and machinery. The dark interiors seemed to offer protection and security from the outside world.
The Red Barn near Farmington
In my growing-up years, I would occasionally visit with some of my parents' friends who lived on farms. Thus, in an indirect way, I became acquainted with various buildings of the farm, particularly the barn.

In the late '20's and early '30's, the gravel roads leading from community to community were paved with concrete or asphalt. Those who drove their cars along these highways quickly became potential targets for advertisers who began placing billboards of every description along the roads. The advertising age was being ushered in. Some of the advertisers convinced farmers that it was to their mutual benefit to paint signs on the barns.

In the process, it was reasoned, the owner would get his barn, or a portion of it, painted without cost to him. Obviously, there were many who took advantage of this offer. Thus, many barns close to highways began to serve as billboards.

I remember these "billboard" barns. There were many of them. They served as landmarks along the roads we frequently travelled. Although I had never set foot in them, they seemed like old friends. Large signs often covered an entire wall. Some could be read a half mile away. Among the most popular of these signs were ads for patent medicines and all kinds of tobacco.
It seems incredible that a few of these barns, bearing the faded signs of yesteryear, can still be seen along the Utah highways. It is also remarkable that many other barns, lacking repair and maintenance, have survived the ravages of time to remain in an upright position to this very day.

However, like many old structures that have outlived their usefulness, countless old barns have disappeared or now stand in a condition of decay or imminent collapse. Their ranks have been sadly depleted, but those that remain stand as witnesses of an earlier and simpler time when most of the people depended on the soil for a livelihood.
DAIRY BARN at MIDWAY
ENGLISH TWO CRIB BARN
at WALES
The Long Barn
near
Spring City
TYPICAL WESTERN BARN

at OAKLEY
The Utah haystacker is unique to Mormon country. It was developed in Utah by the settlers who needed an easier way to place hay in stacks for storage. Operating on the principle of a derrick, the boom could be revolved, allowing bundles of hay to be lifted by rope and pulley from hay wagons and deposited on the stacks with a minimum of effort.
A Hay Fork (Jackson Fork?)

↑ to close or grasp
↓ to open or release

used with the Mormon Haystacker
Among the most fascinating structures of the Pioneer era were the picturesque water-powered grist mills. As an essential part of early American agriculture, they were found wherever people settled. Thomas Jefferson once wrote to a friend: "There is no neighborhood in any part of the United States without a grist mill for grinding the corn of the neighborhood."

In 1840, when the population of the country was 17 million, the census showed that there were 21,661 mills operating on a toll basis, the miller earning a percentage of the grain.

A few years later, when the Mormon pioneers made the long journey from the Missouri River to the Salt Lake Valley, Brigham Young, with great foresight, saw to it that millwrights were among the first to arrive. They immediately set to work constructing mills to produce flour and lumber for the rapidly growing body of Saints.

The mill often became a community social center. Farmers brought in grain (grist) and stayed to exchange market news or to gossip. A lot of good would come from the grinding of a neighbor's grist, for most of the miller's customers were neighbors. The miller became prominent in the community, building a business often handed down for generations.

The word "grist" is not commonly used anymore, and many people do not know what it means. Actually, it has a double meaning: grain that is to be ground or grain that has already been ground. In the old grist mills, the grain was ground between two flat circular stones up to three feet in diameter made of granite or a type of quartz. The top stone was called the "runner" stone and was rotated by power derived from the mill wheel. The runner would turn against the stationary lower stone called the "bed" stone. The fineness of the grist depended on the distance or space between the two stones. In their settings adjacent to streams and millponds, the grist mills projected an aura of romance and tranquility.
But the apparent leisure of the sloshing water wheel was deceiving. Within the mill, the wheel brought to life a surprising amount of activity.

The runner stone driven by the wheel created a loud grating noise as it revolved against the bed stone and caused vibrations that shook the whole mill.

There were also rotating shafts and gears that groaned and squeaked as they turned, and pulleys and belts that added to the din.

**MILL STONE**
Made completely of one piece of stone — a type of quartz or granite

**MILL STONES**
Made of smaller stones, shaped and fitted, held together tightly with iron metal straps.

**A MILL PICK**
Was used to groove and "dress" the mill stone to properly grind the grain
HOW A GRIST MILL WORKS

A - Grain Supply
B - Grain Hopper
C - Rotating Stone (Runner)
D - Stationary Stone
E - Grist Receptacle
F - Bolter
G - Flour Chest
M - Mill Wheel
The active water mills of Utah are gone now. They were silenced by the advent of electricity and the steel roller. But here and there a relic remains of those days when harnessed water produced remarkable energy for the mills.
There were grist mills...
The old E. T. Benson Mill was still operating with water power when I was a youth. Having passed through a period of advanced deterioration, it still stands adjacent to Highway 139 (old U.S. 40) near Mills Junction in Tooele County.

The mill is a three-story wooden frame structure with a stone basement area. As nearly as I can determine, it was powered by a ten-foot overshot wheel.

The mill was noted for its honesty and integrity. A favorite expression of the early settlers, when the safety of their possessions was in question was: "As safe as flour in the lower mill." The deed of sale reads as follows: "June 23, 1866, E.T. Benson to Brigham Young: the sum of $3,333.33 for all claims to the grist mill known as Benson's Mill located on Twin Springs, consisting of an adobe dwelling house, sheep sheds, cattle and sheep corrals, pig pens, hen house and all other out houses; also water rights."

I first saw the mill in the late twenties, when my father worked for a time at the salt mill at Burmester, near Grantsville. Since then, I have seen it countless times. As you travel toward Grantsville, the mill can be seen to the right and the pond to the left of the road. The pond and the mill seem to be idyllic companions in an otherwise dull setting.
The pond connected with the mill covered about 30 acres and had a slight milky appearance with a tinge of turquoise, probably due to algae or mineral constituents of the water.

I also remember an old house that stood near the edge of the pond, where a few willows were growing. The house is now long gone, but I suspect it may have been the old adobe house that was on the property when the mill was acquired by Ezra Taft Benson in 1866.

Due to its location on "Twin Springs," some say this mill had the most reliable water supply and best mill stream in the state. The springs which fed the pond provided a steady flow of water that didn't seem to vary the year round. In recent years there has been considerable encroachment by residential development and there have been some alterations to the pond itself, but as viewed from the road a good portion of the pond's character has been retained.
The E.T. Benson Mill
about 1960
The Brigham Young Mill

I remember another old mill that stands in Liberty Park in Salt Lake City. There is neither a wheel nor a mill-race to connect it to the past, but the nearby lake was obviously a millpond at one time—and may have been fed by Emigration Creek. A plaque on a granite stone identified it as the Isaac Chase Mill, constructed in 1852. Later acquired by Brigham Young, the mill is now generally known as the Brigham Young Mill.

The mill has a basement of stone and upper walls of adobe. The walls are now faced with bricks made to simulate adobe, which helps to preserve its original character. It has a clerestory monitor roof with fan motifs at the gable ends. It is said that this mill had a heavy free-standing interior timber framework that supported the shafts and gears. The frame, called a Hurst Frame, was not attached to the structure of the mill building. Its purpose was to support the machinery without transmitting the damaging vibrations to the building itself.

The mill was in operation until about 1880, when it was purchased by the City of Salt Lake. Since 1937 it has been leased to the Daughters of the Utah Pioneers, who are seriously determined to restore it.

The first time I saw this mill was when I was in about the fifth grade attending the old Saltair School. In our isolated location, we were sort of "stepchildren" within the Granite School District. Nevertheless, there was an outing for the kids of the district held in Liberty Park, and we were a small part of the festivities.

I well remember being given thirty-five cents to spend as I wished. I nursed those thirty-five cents for all they were worth, but was disappointed to learn that it cost fifty cents to hire a rowboat for an hour. Some of the other kids had a lot more money to spend, and were able to ride in the boats. One of these was a boy named Wayne who soon grew tired or bored and brought his boat to shore where I was standing with one of my buddies. He said that he had had enough and asked if we would like to ride out the remainder of the time. I was delirious with joy, and carefully savored the time rowing back and forth across the lake before we were called in. Everything thereafter seemed anti-climactic.
A short time later, while exploring the other wonders of the park with my school mates, I came across an old building set among a grove of trees close to the lake. I was told that this was the old Brigham Young grist mill. The door was open, and I peeked inside. It was dark and uninviting, a dreary depository for a few dusty tools.

As inconsequential as it may seem, this experience remains vivid in my memory. I also remember thinking, "This was President Young's grist mill, a building that had nothing to do with churches, temples, or other church functions." In my young mind, it brought the prophet down to earth. It made him a real person like myself.

I have often reflected on the practical side of our forebears who needed things like grist mills for survival. The fact that the Brigham Young Mill has survived these many years, with excellent prospects of restoration, gives me much satisfaction. Today it appears much as it did five decades ago when a young boy peered inside the door to meet Brigham Young.
The Bicknell Mill

About two hundred miles to the south, in sparsely settled Wayne County, I once came upon a grist mill along the Fremont River. It was situated against the colorful sandstone cliffs cut by the Fremont River at the foot of Thousand Lake Mountain. It sits north of Highway 24 between Bicknell and Torrey and is known as the Bicknell Mill. It is younger than the Benson Mill, having been built sometime between 1890 and 1895. Like the Benson Mill, it is made of wood and located in an area where desert shrubs are growing. There were no trees in the area except for a row of Lombardy poplars growing adjacent to the building on the north side.

The water for the mill came from the Fremont River, was diverted some distance upstream and conducted through a canal to the mill, where it dropped through a pipe for a vertical distance of about 20 feet to propel a turbine type of wheel, similar to a tub wheel.

The mill was no longer in operation when I first saw it in the late forties. At last report it was still standing, but the foundation is gradually giving way, and the building in time will collapse. The old mill is now standing alone, doggedly resisting the elements to postpone inevitable destruction.
The
BICKNELL MILL
Ca. 1946
LEHI ROLLER MILLS

From an aesthetic point of view, the old water-powered grist mills had an inherent charm and attraction. Artists have illustrated scenes with water mills almost from the beginning of our country's history. But the newer mills that operate with electric power seem to lack this intrinsic quality. Once in a great while, however, you may find one that comes very close. Such a mill is the Lehi Roller Mills.

Built in 1905 to supply the needs of the people living in the Utah Valley, this compact mill uses steel rollers in the wheat-grinding process. It has been a family operation since 1910 and has retained its character of "quaintness" or "cuteness" that sets it apart. Enlarged with storage silos and various conveyors, it is operated today to produce the "Turkey Red" and "Peacock" flours for which the mill is well known.

Until about 1960 the mill had little exposure to other than the local residents. It was then that Interstate 15 was built through this area, and this obscure building was suddenly exposed to the view of every motorist that passed through Lehi in the direction of Provo. The elevated section of the road here offers a panoramic view of the mill and its semi-rural environs. This landmark is now enjoying a reputation that extends beyond the boundaries of Utah County; it has been the subject of numerous artists' canvasses and has even had a role in a movie!