



THE HEDDLESTON-SIGLER-COLTRAIN MILL, CEDAR TOWNSHIP.

The only one remaining of thirty pioneer mills on the minor streams of Van Buren county.

FRONTIER MILLS.

BY GEORGE C. DUFFIELD.

While James Duffield was leading his family into what is now Van Buren County, Iowa, in April, 1837, there were thousands of settlers on the move toward the same country. Coming from Pennsylvania and Ohio, they were leaving actual or prospective improvements of vast importance. Canals, mills, factories and steamboats were everywhere. They were joined on the way down the Ohio by movers from the Carolinas, Kentucky and other states, and all were afloat in keel boats, "broads" and steamboats. "Times," the nation over, were "hard," which was the reason for a great part of the crowding to the west. The people literally poured across the Mississippi and up the Des Moines, in '37, '38, '39 and '40, and all with the full sense of the contrast between improved localities such as they had left, and the unimproved like that to which they were going. The people as a class were of excellent stock, though of indifferent or reversed circumstances. It is clear, then, that among the scrambling claim hunters, there were the most progressive, hopeful and provident of men. They anticipated the vast commercial importance of the running streams; and, as legislators, not only gave mill grants along the Des Moines and Skunk Rivers, but along Big Cedar Creek. In those grants they required the construction and free maintenance of locks and gates for the passage of "steam, keel, and flat boats and other water craft" in the first two streams named, and fixed the dimensions of the Skunk River locks at 75 feet in length by 15 in width. (Statute Laws of the Territory of Iowa, 1838-1839). While others thronged along the Des Moines timber and up the minor streams staking out "eighties" and "quarters," these men were threading the channels locating mill sites. Indeed, mechanics, especially mill-wrights, were in numbers out of proportion with other

tradesmen. Aside from farmers who had served apprenticeships at trades, I think there were more millers and millwrights than all other tradesmen combined. And so it is easily understood how the Des Moines Valley and its minor streams came to be so quickly and thickly settled. And, bearing in mind that the river, as it flowed out of Van Buren county, washed a slave shore on the right, and the Half Breed Tract, with its uncertain land titles on the left, it is clear how there came to be in territorial days, along the river in this county, such a wealth of manufacturing cities; along the minor streams nearly thirty water mills. By naming the cities, their history can be traced in our county records. But these old creek mills, vastly more important to the homebuilder, arose, ran for the first few years, and vanished, leaving scarcely a trace of their sites, and seldom a line of record as to their location or significance. None now run, and only one is standing. I would like to set out the settlers' needs of these old mills, and by showing the efforts of the old millers to meet those wants, make tardy endeavor to fix their place in the story of the early days. Of the "cities" to which I refer as having had an actual existence, there were, Farmington, Plymouth, Harrisburg, Watertown, New Lexington, Rochester, Meek's Mills, Rushville, Columbus, Alexander, Portland, Mechanicsburg, Newmarket, Philadelphia, Pittsburg, Hartford, Bentonsport, Winchester, Parkersburg, and the less ambitiously named, but quite as ambitiously planned, Rising Sun, Van Buren, Hedvolante, Salubria, Black Hawk, Napoleon, Iowaville and others. I can add nothing to prove more surely from whence the settlers actually came, nor whither they were, in imagination, going.

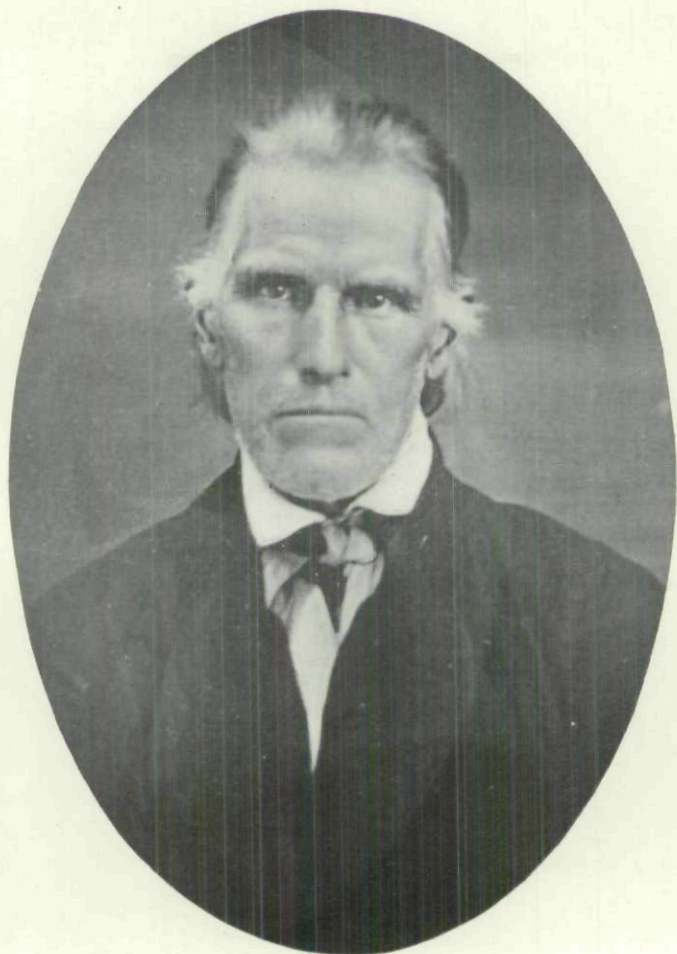
Now our family, and that of each other settler in the first few years, possessed very little more than the clothing they wore to the new home. True, a little meal, flour, salt, and a few dishes and tools, were brought. But the country over, finding these, you had the whole supply. We happened to have stopped in Illinois two years. The little grain and a

few other necessities we could save, had been left there when we came away. In the summer father made a trip or two back to get these things. Otherwise, for the first season, before a crop was made, we would have been in actual want. There were settlers who came from farther east, with whom we had to share. Not a cabin had what could be called plenty, and many were scant of supplies. Food was not the only question bothering us. Imagine yourself setting up housekeeping with a family and neighbors without the item of ordinary boards. Not a single board of any character was to be obtained for any purpose. Not a shelf, stool, door nor anything else to be made from lumber, unless, indeed, you first made your lumber. Obtaining this, or substitutes for it, and putting in a crop that first season, took genius in each and every settler equal to that required to make a statesman or a general. As I was then a boy, only, I am not speaking self-praise. It may be interesting to know just how they did manage.

We were here, and here we stayed. Therefore, though at first there were no mills and no commerce, yet we had food and shelter. Indeed, had bread and boards, homemade from the ground, so to speak, to their conversion into life and habitations. Father brought with him an axe, a frow, an auger, a plane, known as a "jinter," and a broad-axe. Nearly every settler had the same. A mill-wright, in addition, brought a crank-iron and a saw blade and almost no other tools. With the axe, the cabin was raised; with it and the broad-axe, it was floored; with it and the frow, from the prettiest of red oak timber, the roof and door stuff were made; with it and the auger, the doors were hinged and hung, the bedsteads and other furniture manufactured. But so great was the need of plank, that two inch boards of more than five or six feet length were hewn from the tree trunks, and such skill and nicety was often developed, that, after the axe was laid aside, a plane had little to do if the board needed to be smooth. This was very slow and tedious work.

A quicker method was "whipsawing" it. A platform would be reared on the side of a hill, a pit dug beneath, and a log rolled on it. A man in the pit and one on the log, with a saw like the common crosscut saw, would rip the log up into half a dozen nice planks in a few days. But this was also slow and hard work. Those old millers saw a better way. They all agreed as to the value of the running streams, but applied this power in various ways.

Samuel Clayton built his cabin at the mouth of Chequest Creek in 1836, raised a little patch of corn, and was joined by his family in 1837. That year, with his sons Henry and Harvey, he built a dam about a mile above, on Chequest. He was the first settler, and his was the first mill west of the Des Moines, in the present limits of the State of Iowa. The Clayton boys were our playmates, and such idle time as we could get was spent around that mill during its construction and use. The mills on all the little streams were almost alike, the difference being in the dam, the wheel and in the fact that some were only saw mills, some grist mills and some saw and grist mills combined. In describing the Clayton mill, I will have described all the rest, except where I note differences. The Claytons felled trees on both sides of the creek, cut them into the longest logs possible, hewed them on two sides, and laid them end to end, spliced and pinned, clear across the creek on bed rock. Three or four such lines laid down, two or three feet apart, notched every four or six feet and cross ties laid in and pinned, made the foundation frame. The pens thus formed were filled with clay from the hillside and stone from the creek-bed. This was the start, and with two more lines of timbers, notched and laid down on the ends of the cross ties, and over the outside timbers of the foundation, then other cross ties, and more long timbers, formed a row of cribs, and gave the dam its name of "crib dam." It was raised some two feet higher at the down-stream side than the up-stream. The cribs filled with stone and clay, and roofed with plank, or logs



Samuel Clayton

SAMUEL CLAYTON.

The first settler, and builder of the first mill west of the Des Moines river in the Territory of Iowa.

finished the main part. To prevent the back wash from undermining it, there was a row of secondary cribs built along below and pinned to the main dam. This, filled and roofed like the main dam, the roof slanting from a couple of feet under its comb to a few inches of the bed of the creek, was called the apron. The whole structure was 14 or 16 feet through, 8 or 10 feet high and some 60 or 65 feet long.

Brush dams were made by commencing with the same foundation, then upon this laying the tops of trees, the butts up-stream. These were weighted down solid with clay and stone, then another layer of brush, the butts a little further up-stream so as to raise the limbs a little steeper, and this weighted as before. Then another layer of brush, and so on until the proper height was reached. This was a quickly made, cheap, and sufficient dam. Though not so enduring as the crib dam, it was used a great deal more often, in the little streams. Both brush and crib dams were finished like the Clayton dam. A trench, somewhat wider than the thickness of the dam, was dug into the south bank of the stream. The foundation was built into it some 12 or 14 feet, and the cribs continued up some five feet, while the rest of the dam was raised to full height. The apron stopped at the place where the low place began. This low place was now floored with plank, the end of the dam finished up with the same planking, and a plank wall raised against the bank opposite the end of the dam. This plank floor and walls formed the race. Wickets at the upper and lower ends let the water through upon the wheel.

The old water wheels all ran with a horizontal shaft. No turbines were in use for several years. A "screw auger" wheel was in use in some of the river mills, but on the minor streams only the undershot, overshot and flutter or breast wheels were used. The undershot was a large wheel, 16 or 18 feet in diameter. It received the force of the water on its under edge, turned very slowly, and could only be used with gearings, a rare and expensive equipment. The over-

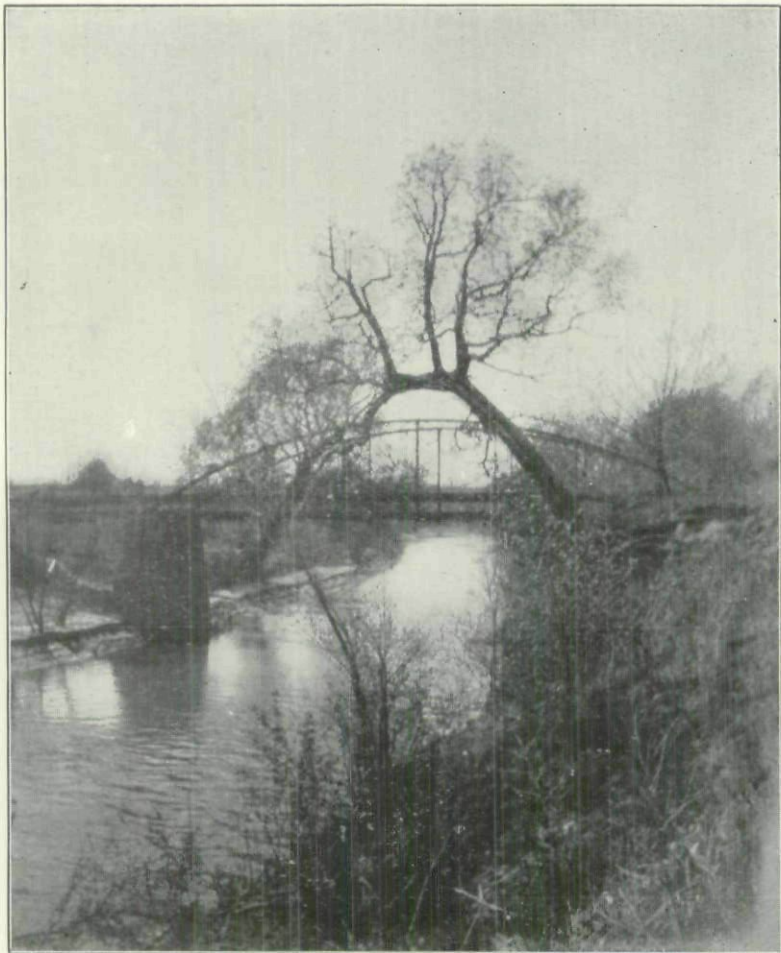
shot was a big wheel, about the size of the undershot, which received the water at the front and top and revolved very slowly away from the current of the stream. It was only found where a dam was built a long ways above the mill, and the water led out from the race into a flume along the bank, gradually gaining fall, and being discharged over the wheel back into the creek. The flutter or breast wheel was the standard wheel in this country. It was simple, used small head of water, and needed no gearing. It was constructed upon a shaft that was about a foot in diameter, long enough to carry the wheel and give a bearing on each end. Holes were mortised through, say a foot from the bearings, not intersecting, and about three by six inches. Through the holes were driven tough scantling, which, being sawed off two or three feet from the shaft, formed the two ends of the wheel. It was completed by pinning to each pair of spokes a plank three by twelve or fourteen inches, and of the length of the wheel as designed (Clayton's flutter wheel was six feet). Boards were then pinned with their flat sides toward the shaft, in the angles of the spokes, and some 18 or 20 inches from the shaft. This gave something the appearance of a headless drum with vanes or flanges extending out of its eight corners. The shaft rested on bearings cut into logs left projecting from the underside of the race for that purpose. It was held down by cap bearings fitted over it, and pinned with long tough pins. The shore end of the shaft was fitted with the crank iron, the largest, and almost the only piece of metal in the structure. The water struck the wheel a little short of its top and revolved it toward the dam. When not attached to machinery it ran very rapidly. The crank was about 18 inches long, and its bearing, or wrist about 3 or 4 inches in diameter. Upon it there was slipped the pitman shaft. This was a tough piece about 2 by 4 inches, 6 to 8 feet long, with one end concaved to fit the crank, and with a pliable, split hickory bent into the shape of a U slipped over the crank and pinned to the sides

of the shaft. This bearing and those on the main shaft, when lubricated at all, received a coat of soft soap, or a bushing of pork rind. Often they ran dry, and the noises which came from them can be imagined. The pitman shaft was attached at the top, almost above the crank, to the bottom of the saw sash, with a pin joint. This saw sash was arranged exactly like an ordinary window sash of two panes, the partition between the two panes representing the saw blade, and the finger-lift the pitman attachment. The saw blade was about eight inches wide, with teeth about 2 or 3 inches long, slanting so as to cut only when coming down. To feed the log to the saw, there was a series of rollers at the front and back of the saw, turning on journals made stationary. The rollers had notches around them near their ends. In these notches ran the sills of a frame on which the log was rolled, fastened, and then pried forward with hand spike or crow bar. Of course it was not long until automatic feed was arranged. But as described, this was away ahead of hewing or whipsawing boards.

I have described no building, for up to this point none had been erected. In fact, many of the old mills sawed their lives away without shelter of any kind. To this mill father hauled the first logs that entered into the building of a house in this section. It was in the fall of 1837. I am not sure as to the stage of water, but many times I have seen a log started into that saw and the boards ripped off at a speed that now seems marvelous. Then again, I have seen the saw start in with a will, slack its speed and stop before the length of the log was made. Then the gate would be shut down until the pond would fill up, then a start, a short run, another start and so on. A slow and tedious process compared with that of modern steam saw mills.

While the Claytons were building their mill, our family was producing its first crop. Scarcely had we got our household goods into the house, before a little cleared ground was plowed, and the precious potato eyes planted. Such was the

scarcity of food, especially of potatoes, that no one thought of planting the whole of the potato. I have known of the peelings selling for two dollars a bushel, for seed. The plowing was done with the oxen and the rudest old wooden mold board plow, with John doing the work. John scarcely got a rest, except when the ground was frozen, for several years. Settlers without force to break their ground were numerous, and oxen, plow and boy went for miles around to help. Our own ground was barely cleared of the brush, the smaller trees cut and burned and the grass roots scratched up, before spring wheat was sown and corn planted. The larger trees were cut and removed, and fences built after the planting. Ground once broke, got no further attention except from four or five boys and girls with hoes. The new clean soil had no weeds, and grass and sprouts were subdued with these hoes. These, like nearly every other farming tool were hammered out by the frontier blacksmith, from almost any piece of metal he could get. We brought ours with us. They were heavy blades with an eye about an inch in diameter welded on, through which was driven a tapering hickory pole with the bark on, the butt being driven into the eye tightly, and wedged. The bark wore hard and slick from the hands. This implement became smooth and bright, and all over its surface showed the irregular edges of the welded pieces much like those on fine modern gun barrels. As the season advanced, the contents of meal "chist" and flour "bar'l" vanished, and even when new potatoes, wild fruits and meats in abundance were at hand, yet the question of bread became a serious one. I have heard, and told, tales of "hard up" early times. Such are usually accepted as funny. But I almost shudder to think of those early settlements strung along the streams, with the chance of bad crops, no stores of provisions, no way to reduce grain to an edible state, and no roads across prairies from one stream to another. The trails to and from the Mississippi at times were impassable. That there was no famine is due to the



A BEAUTIFUL IOWA SCENE JUST ABOVE THE MOUTH OF CHEQUEST CREEK, ADJACENT TO THE
SITE OF CLAYTON'S PIONEER MILL, AND NEAR THE PRESENT
RESIDENCE OF MR. DUFFIELD.

oversight of a kind providence, and the combination of the almost more than human effort and adaptability of the settler. Julys, Augusts and Septembers of the first few years found the grain supply very low, money always scarce and resources almost exhausted. So at the maturing of that first crop of corn, I shall never forget with what satisfaction Father was met when he came in with the first arm load of "roasting ears." It may have been a Sunday, anyway it was a day of change from the monotonous round in the way of food. The milky ears were stripped out of their husks, these tied back, and the silks removed, and all strung on the "jerk stick" over the fire. Hot, crisp and brown, we munched it off without stopping for seasoning. Of course after the first few meals we craved it less, and after a while the eating of it became as much a duty as delight. We soon began again to wish for the baked pone, but the meal was gone. The settlers used many ingenious ways of adapting new corn to the making of bread. Some "gritted" it. Others, including our family "jointed" it. That is, inverting a long carpenter's plane, called a jointer, over a tub, they would take the corn just out of the milk, and by passing it a few times over the plane which was set to cut a thin shaving, a nice quantity of "meal" could soon be made. Indeed, a boy with a "jinter" could make more meal in an hour than he could with a "gritter" in twice the time. "Jinted" meal made the best of mush. Baked, it made our old "woolly" cake, whose surface bristled with the shredded hulls and bits of cob. I sometimes think of it on looking at an inferior tasting product of my daughters' skill, which they call cocoanut cake. The "woolly" cake or pone made the sweetest if most scratchy diet of my boyhood days. When the corn got hard enough to shell and bother about "jinting," it was soaked to toughen and soften it, and still "jinted" and served for bread and mush.

If, then, the scattered settlements could raise grain enough the first season, the people could not subsist upon

it unless it were changed from its natural state. Corn only could be prepared by hand; wheat must be ground. So it is easily seen with what joy the settler welcomed not only the starting of the saws, but the starting of the buhrs.

The Claytons cut trees from the hillside and made a road from the trail to the mill. These trees they sawed, to make the frame and siding for the millshed. They had the mill enclosed by the winter of 1837, and by spring had a gear rigged to the main shaft, and a perpendicular shaft rising above the floor of the shed was fitted with a run of buhrs. These, like the most of the first ones started in the county, were of native material. That is, of the round "niggerheads" found in the neighborhood. Some, it is true, were cut from the limestone found along Chequest and other creeks, but gave out because too soft or fragile. They were all rough shaped, but were scarcely attached until they were pressed into service. Indeed, the first grain ground for our family in Iowa, was ground by Samuel Clayton feeding it into the buhrs with his hands, regulating the feed so as to get the best results, and stopping now and then to brush up the cracked particles. There was no bolt. You simply took your corn, shelled and carefully dried, awaited your turn and went home with as good meal as any made in this country. But if it were wheat, of which Father took some as soon as the mill started, it was to receive a product no housewife in the present state of Iowa would recognize, much less dare make into bread. It was merely cracked on the corn buhrs, not cleaned or bolted. From a cause I can not explain, it was almost as black as soot. I can only say that for a few years our spring wheat yielded well, flailed out fine, and when separated from the chaff looked like first class wheat. But frequent grains were filled with smut. With no way to distinguish a poor grain from a good one, and no way to separate it if we knew, and being surfeited on Indian corn, we simply cooked, ate and actually relished this black bread.

So much for our first mill, miller and milling. Like it were those of the settlers all over the county. The absence of all reference to these thirty creek mills in the records, speeches and writings of the pioneers, so far as I know, is the excuse for my attempt. I have been too long on the mechanical part to admit of relating more interesting features, as might well be done. For it must not be thought that the settlers' troubles stopped when the old mills started. Indeed, since each settler must await his turn with his grist, whether he were one mile or twenty from his home, whether in need or not, it was common for travelers passing cabins to be hailed with the question, "Is the mill a runnin'?" And quite often the response was, "Creek too high," "Creek too low," "Froze up," "Shaft broke" or other such discouraging news. From the structure described, it will be seen that a variation of three feet in the state of water would clog the wheel, or run it dry. But when the answer was "Yes," it was but the work of a few minutes for father to mount old Jule, take a bag of grain "aboard" and trot off down the trail toward Clayton's. There it was usual for many other settlers to be congregated and the mill to be "throng." This situation would be seized upon by the politician, newsmonger, claim-trader, horse tracer, wrestler, jumper, fisherman or swimmer, and so on.* I can not well close this sketch without relating a story current in the early day, at the expense of Woods' mill, on Fox, where Mt. Sterling now stands. I will say with positive assurance that many a settler's family has from hunger stood in the place of the dog in this story, and every one of the old mills is personified by Woods', in the tale.

Woods Brothers, great hunters, were the proprietors of the mill. Whenever a settler with a bag of grain came in sight, a pack of hounds set up a chorus of bawling until one of the proprietors came out and kicked and cuffed them into

*Opportunities for congregating being few, the mill became the place, above all others, for public intercourse among the settlers.

silence, thus the place became known as "Dog town." "Old Toller," the choice of the pack, was the only one allowed to follow his master to the mill. And he received his name in the following way: When the settler alighted and threw his bag into the mill, Mr. Woods would go around, lift the gate and start the buhrs. Old Toller would gravely amble up in front of the meal box and seat himself on his bony haunches. With the first thin thread of meal trickling down, his face would lose its gloomy look, and when enough had fallen to warrant the effort, he would rise, run out his long red tongue and lap the box clean. As if it only served to whet his hunger to a point of agony, he would gravely resume his seat, raise his tear stained face toward the lazy buhr and let go the most pitiful "Boo-oo-oo," for more meal.

THE YELLOW, Turkey, Volga, Maquoketa, Wabesipinicon, Cedar, Iowa, Des Moines, Boone, Skunk, Boyer, Maple and Little Sioux rivers traverse the State from the central and northern counties, flowing into the Mississippi and Missouri rivers at different points from the extreme north to the extreme south. Besides these rivers, a thousand streams meander the State, furnishing an unparalleled and never failing amount of water power. Innumerable springs also pour forth their limpid streams.—*Dubuque Herald, March 28, 1860.*

THE MAN who first unfurled and flung to the breeze the Star Spangled Banner in Iowa, was an Irishman by the name of Nicholas Carrol, living in the vicinity of Dubuque. The flag was run up soon after twelve o'clock on the morning of the 4th of July, 1834.—*Dubuque Herald, March 7, 1860.*

Copyright of Annals of Iowa is the property of State of Iowa, by & through the State Historical Society of Iowa and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.