I would like to show how, before the establishment of industries, markets and schools in Iowa, the youth of the land were managed, and how they were made into anything but ignorant, thriftless members of society.

"Defense," or some equivalent, is an ancient word. Such works as the Great Wall of China prove the statement. Half way around the earth from, and ages after the time of the erection of, the first defensive structures known, civilized life began in America behind defenses contrived from tree trunks, and "stockades" became the symbol of safety against the American savage. These wooden defenses were pushed on, so to speak, ahead of the establishment of society until they disappeared with savagery itself. In modified form, however, these defenses became merely "fences," with the plain function of protecting and controlling property. Since my youth, passed in Iowa immediately after the abandonment of stockades, and before the erection of fences, greater change has come over the materials and construction of fences, and in the methods of caring for and handling live stock, than probably occurred before. From 1837 to 1842 our family went through a ceaseless effort at "improvement." In daytime the year round the heads and hearts of the elders were set upon the preparation of materials and the erection of fences and cabins, while the muscles of the youth were given no rest from the same plans for improvement. During the winter nights the family joined in the effort at mental improvement which, in the absence of better school privileges, sufficed to prevent relapse into illiteracy among all, and to advance the younger ones in the rudiments even before school came. I have spent nearly seventy years in one Iowa locality, during the greater portion of which I have kept a daily journal of personal and local transactions, and I feel qualified to deal with some of the interesting phases of the two things for which I have seen Iowa celebrated—agriculture and education.
Nearly every settler came into the Chequest Creek settlement by a cattle team, the team often consisting of an ox and a cow. Indeed, it was not rare to see an ox and a cow, a cow and a bull or either of these and a horse or mule coupled together and bringing into the country some family whose name was to become an ornament to the community and State. When father brought us across the Des Moines river in April, 1837, the two yoke of oxen and "Old Jule" constituted the largest collection of domestic live stock then west of the river. Samuel Clayton had an ox, but there were no other domestic animals. "Old Jule" found a colt the second night after we landed, and this was the first in the territory.

After we were settled in our new cabin and had our first crop planted, with my brothers, from almost the smallest to John who was grown, I was put at constructing a "defense." Not a defense against the Indians who were living all around us, it is true, but against our own stock, and that of the other settlers; from the Indian ponies, the herds of deer, and the elk that remained. And the protection of crops, while a great problem, was not the only one. Acquiring, increasing and identifying domestic animals was an immense and important work. A few hogs, for instance, would be brought into this new country and turned out into the open with those of other settlers, where the woods, the streams and annoying enemies encouraged them to shun the settlements; to recover these animals was difficult and required a system of identification forever gone from Iowa. The difficulties increased with the population and with the numbers of live stock.

For the year 1840 and prior thereto, I can find no property lists among the archives of Van Buren county, but I can recall some fifty families who settled west of the river. Let me relate an experience which was had by every pioneer boy, I suppose, of those times. Suppose some morning one of our oxen "come up missin'." "George," from father, "you and Jim go hunt Ol' Buck." That meant that we should call the dogs, take the rifle, and visit all the neighbors. It might mean going into unsettled portions of the country. Buck usually "turned up" near the cabin of some neighbor. But sometimes
even after years had passed, a notion seemed to strike even the most faithful ox or horse to wander eastward out of the settlements. As we lived near the Des Moines river, our stragglers were usually found in the dense timber along its west bank. But settlers who lived just across the river were many times obliged to go to the banks of the Mississippi, along the "big bottoms," for their straying stock. I never heard of stragglers wandering out of the neighborhood westward. When seen to the west, it was accepted as prima facie proof that they had been driven or led by thieves. So, not finding Buck at the neighbors, we plunged into the river timber. Mark the care we were taught to practice in noting any fact or object that might serve some friend as well as ourselves. Striking a pathway leading east and calling the dogs, I, being the older, led the procession. And being more cunning I yield in feigned reluctance to Jim's earnest plea to "let me carry the gun awhile." I know his weariness will increase as we come nearer the best hunting grounds. We go along in single file until the path fades out and the ridge it follows, breaks into many others, dropping toward the river. I "rest" Jim of the rifle and follow down one slope while he takes another running in the same general direction, but some distance away. Presently from him or me in strong falsetto, "Hoo-OO-ohoo," with its hundred diminishing "hoos," from the echoing hills in all directions. "Hey," in jerky response. To that, "Red steer," is yelled back in reply. "What mark?" "Crop off both." "He's Martin's." Then silence again except for the sounds of the woods. I turn toward a clump of brush screening the head of a "holler." Out from the lair of leaves with a crash, and with a gutteral challenge which one would suppose could come only from the hungriest of bears, comes a long, gaunt sow. She advances a few feet from her nest; her bristles up and her snout in the air. The vicious "chomp, chomp," of her great jaws; her quivering frame; the flash from her mean little eyes all look the demon of danger that I know she is—not. "Booh;" and up the hill and away she goes. I knew her trick. I raided her den, and amongst the leaves, prone on their bellies and "possoming" were her off-
spring. The mother had, by showing fight, given me an instant’s view of her big flat ears. “Hoo-OO-hoo,” again rang through the woods. “Hey,” from Jim barely within hearing. “Sow’n pigs.” “What mark?” “Underbit in both.” “Bennie Rucker’s,” and silence again. In time again came the salutation, and to my “Hey,” the answer, “Buck!”

We “cornered” the ox in the open woods as two agile boys could do by keeping always one in front of him. One held his horn as he stood in mock captivity, while the other “cooned it” up his neck and over his withers. The other, with the boy on top as a “holt,” and he with the gun as counterbalance, made easy work of the last one getting on. The steer knew the way home better than we, and knew quite as well what was expected of him. He would never think of running away or turning around, but he knew and availed himself of every opportunity to scrape us off under grape vine or leaning tree.

Reaching home, we may not have fired a shot, for indeed we little expected to. The gun had served father in securing our quick and willing compliance with his request to go, and rid us of any secret cowardice. In the same way many a family had a gun that served the single purpose of giving courage to the inmates, and dismay to any designing visitor of the cabin.

Detailing the most minute circumstance of our trip it was the family habit to note everything exactly. Each one remembered each animal described; its color, spots, marks, brands and size, and could detail the same with an accuracy equal to the one who personally saw with his own eyes. The first one of our family who saw one of the Martin or Rucker family or any other person, detailed to him the full facts. By such interchange the whole neighborhood kept in constant acquaintance with the whereabouts of each respective settler’s stock, and the presence in the locality of any straggler; and these facts were even passed along from settlement to settlement by “movers.” Thus it was common for emigrants who had come through Fort Madison and were passing west to say to father “I hearn tell of a stray ‘fork an’ under bit in the left an’
FRONTIER LIVE STOCK EAR MARKS.

1. Crop off left; upper and under bit and crop off right.
2. Upper bit in left; under slope off right.
3. Upper and under slope off left; swallow fork in right.
4. Slit in left; upper half crop off right.
5. Hole in right.
crop o' the right' ox as I come by West Point." And it is interesting to note with what ingenuity the ears of stock could be mutilated,* and with what accuracy and readiness all such marks were observed and recollected by each settler. These marks are made by cutting off portions of the ears, or by slitting them in various ways. Each settler adopted a peculiar mode of marking his animals, as cattle, hogs and sheep. Horses were not subjected to those mutilations. Marks were recorded with the same care and by the same officials as land titles were in early days. The traps formed by the Mississippi and Des Moines rivers for the stock straggling back along the routes traveled into the country, were, I suppose, responsible for the most careful observance of the customs as to estrayed stock. They had their influence on the legislation of the new Territory. As illustrating the stringent penalties against conversion of another's stock, as well as inferentially to show the pioneer's relative esteem for his domestic and property rights, I refer to Sections 36 and 84, Acts of the First Territorial Assembly. There it is seen that if a man or woman, being single, take the wife or husband of another, the offender might expect nothing more than a fine of five hundred dollars and a year in prison. But if the man or woman take from a neighbor 'any horse, mare, gelding, mule or ass, he, she or they so offending shall *** be fined not exceeding five hundred dollars, and moreover shall be imprisoned for a term not exceeding ten years.'

We broke twelve acres of land in 1837, and planted it in corn, wheat and potatoes. By 1838 we had three head of horses, five yoke of cattle and twenty-five hogs. Our neighbors had from a single ox to as much stock as we. The land was open to the Pacific coast. Hundreds of deer visited the salt licks, and the springs and streams of the locality. Deer would leave the finest wild pasture to ravage growing crops. So the first two or three years there was serious danger of crop destruction from the small acreage compared with the number of animals named, and from other enemies such as bears, raccoons, squirrels, blue jays and woodpeckers. From the planting to the gathering time, and even after that, the

*See engraving.
settler's crop was preyed upon day and night by a horde as hungry as himself.

So, after the little patch of twelve acres was planted father took his boys into the woods along Chequest. With axes, mauls and wedges preparations for defense commenced. The first ground plowed was the least timbered, and except the few trees standing in the way, no timber had been cut. Now we were taken into the tallest, straightest timber that could be found, and about the middle of May were put at work. We were kept at it until the middle of the next May, then resumed without interruption for another year. The younger ones, charged with the chores, errands and lighter work about the claim, were not kept at it so early and late as those older, but for father and the grown sons there was little respite for the first few years. While we were as honest as the rest, settlers could not tell which land belonged to the government, no surveys having been made. Indeed, after the surveys, it seemed as if the best rail timber stood just over the line from the settler's claim. From on and off our claim, and from the finest growth of oak and walnut we made thousands of rails and stakes. In this way I got my lessons, as many of my neighbor boys did, in expert wood chopping which we put to so much use in later times as "steamboat choppers" along the lower Mississippi.

In making rails as a business we scattered through the woods. Some two or three applied themselves to felling, trimming and cutting into ten foot lengths selected trees, and disposing the "cuts" in convenient places. Then came the two who did the actual splitting. One of these usually started his iron wedge into the top of the cut and mauled it in until the wood began to crack open. The other with an axe split out the crack and severed the splinters still holding, unless the log was large or tough, when another wedge was started toward the butt of the log in the end of the split and driven in. By experience in selecting and skill in splitting, the settlers could work up logs making four, six and often more rails by the sole use of the axe, except in starting the split in the top each time. When the log was finished the rails were
at once hauled to the proposed line of fence, though in after years when rails were made at odd times, they were always carefully laid on their backs to season straight. In our first fencing, it was the task of one boy, often myself, to follow up with oxen and wagon and load the rails as fast as finished. I well remember the work. In bare feet, bare hands and well nigh bare body, how one tugged and grunted with the heavy rough rails; scratching and tearing the skin, sweating, slapping yellow-jackets (wasps), fearing snakes, dodging "pizen" vines and "talking Spanish" to the oxen. This was a boy's part in the fencing of our patch.

On the side of the claim where the fence was to remain, much care was taken to be accurate in locating, and correct in laying up the fence. But as the patch was enlarged each year, and the fence consequently removed so as to surround the added part, the temporary portions were laid up with more haste than skill. A settler dropped down and made a ring of rails. His neighbor did the same. Both enlarged their rings, and so all over the country these rings expanded until they began to "jine." They finally surrounded every acre of improved land in Van Buren county. They were established in the heart of the timber, and on the prairies miles away. They were begun on the plan of fencing live stock out, and they, in time, on the passage of "stock laws," were made to fence stock in. When hedges were introduced about the beginning of the civil war, other fence than rail could be measured in rods. Until the introduction of wire in 1879, fully 95 per cent. of the improved land was fenced with rails. And rail fence was the standard of improvement whether of the little patch like ours in 1837, or the great thousand-acre farms like those of Timothy Day in the 70's, to improve which required 2,500 rods of fence erected from four to six miles from the timber where it grew. Because there were not a hundred rails made last year in Van Buren county so far as I can ascertain, and only as expedients were any rail fences built from old material, I venture to deal with the subject with much minuteness.

But to return to the fencing of our claim. Along the side of the patch which was to remain, a "stake-and-double-rider"
fence was built. This was the standard rail fence then and so remained. Other kinds, however, were in frequent use for special purposes and will later be described.

The course of the fence being designated by markers or guide stakes, often by blazes on the trees, a "worm-stick" is provided. This was a perpendicular staff, sharpened at the lower end to admit of its being stuck into the ground when so desired. The fence-builder sighted across the top of this staff and shifted it into line. It marked the middle of the "worm" or foundation. Near the bottom of the staff, and inserted in a hole through it, was a stick two feet two inches long which, turned to the right or left, at right angles with the course of the fence, located, at its outer end, a "corner." Taking up the worm-stick, and moving it forward some eight feet, and turning the horizontal piece to the other side, located the next corner. The one of us who laid the worm placed a stone or "chunk" at each point thus located as a corner, and on this was laid the ground rail. The one who laid this rail selected the largest and heaviest, and used great care in placing it so as to insure a good foundation for the rails placed later, and so the fence could be made tight. The big end of the rail was always placed forward, the smaller end on the top of the rail last laid. If there was a crook in it, it was turned up because the large crack necessarily made by the crook could more easily be stopped by laying a chunk on the ground than by fastening anything between the first and second rails. The worm thus laid was in a straight course, yet made of ten-foot rails, each overlapping the other about a foot, described a zig-zag of panels and each two rails or double panel formed a rod in the length of the fence. Returning to the place of beginning, five or six rails are laid up, the smaller and straighter ones at the bottom. Before the next rail is laid on the fence is "staked." That is, at each corner, and two or three feet on each side, a piece is inserted in the ground some ten inches, and being eight feet in length is leaned across the corner, the two thus forming an "X" over the corner and resting on the rails. In the cross thus formed is laid the

* See engraving.
Laying the worm.
Buck fence.
Shanghai fence.

Post-and-rail fence.
Stake-and-rider fence.
smaller end of the next rail, the larger and forward end upon
the next corner. Then, this corner is staked and so on.
Again going back to the beginning, the largest, roughest and
heaviest rails are laid in on the "riders," forming the
"double-rider." This is the fence which, when "pig tight,
horse high and bull strong," was the "buncomb" fence of the
rail fence age.*

There were two other "worm" fences with their special
uses. The "lock" or "rough-and-ready" and the "shanghai."]
The first* of these was constructed exactly like the "stake-and-
fighter," up to where it was staked, and instead of "staking"
it, the rider, or often a long heavy pole, was laid lengthwise
of the fence on top, and stakes leaned into the angle formed
by this rider and the rail it crossed, thus locking the rider
against rolling or slipping off. It was more hastily made, but
was not as secure against wind. The "shanghai" fence* was
a stake-and-rider fence, but instead of a "ground chunk"
there was set up a block or fork three or four feet high on
which the corner rested, thus dispensing with the first four or
five rails. This was proof against the larger animals only, and
was used in hastily protecting grainstacks or as a temporary
restraint for horses and cattle.

Besides the worm fences, there were two styles of rail fence
commonly used, and many others rarely. Of the two, one was
the "buck" fence and the other the "post-and-rail." Of
these, the first* was in use in connection with the stake-and-
fighter, but on steep places or where for other reasons the stake-
and-rider might not stand. It was started by crossing stakes
over a log or stone, and into this cross placing the smaller end
of a rail, the larger end resting on the ground in the direction
the fence was to take. Across this rail as was done over the log
or stone, and some four feet therefrom, other stakes were
placed, its end also on the ground in the course of the fence.
Continuing thus, a fence was completed that could not be
thrown down. It presented the appearance of cheval-de-frise,
was made of refuse timber, and was a useful and effective

* See engraving.
"defense." The "post-and-rail"* was formed from selected rails, so hewn at the ends as to admit of their being inserted into slots mortised through posts at suitable intervals from the ground up. Single panels, with the rails so hewn as to allow them to slide through the slots at one end far enough to release them at the other constituted the universal gateway through all fences of the rail character, and known in song and story as "the bars." Posts were sometimes devised of stakes set up in pairs, being joined at their tops and at other intervals by withes, or by wooden pins driven through holes bored through both. This class of fence was used where ground-space was limited, or where an ornamental effect was sought. Indeed, if a settler's premises were entirely enclosed with a post-and-rail fence it was a badge of thrift and consequence, noted by friend and stranger.

From 1837 to 1842, it then seemed to me, father's only thoughts were of brush, timber, fence; chop, chop, chop. Laborious, drudging, toilsome youthtime in Iowa! From it all I took my flight and began life for myself. How far I ever got away was in point of distance less than two miles; in point of the character and amount of labor I would like to acknowledge by drawing a few facts from my diary. In presenting the following figures, I trust they will be considered entirely impersonal, and only as throwing light upon the enormous outlay and income in the conversion of an ordinary timbered section of country into agricultural land. Every acre of ground in this vicinity, could its accounts be examined, would be a duplicate of mine, if, indeed, it presented no larger transactions. Happening to have kept an accurate account for a long lifetime of the transactions upon one piece of land, I am able to exhibit some almost startling figures. From four hundred acres of river bottom and upland, originally covered, as the entire Des Moines valley, with heavy forest, there has been supplied fire wood for two households, and rails for the entire enclosing and subdivision of the farm for sixty years. At a cost approaching the receipts there have been sold by me the following:

* See engraving.
Wood delivered on steamboats tied up to my trees $1,500.00
Lath, shingles and clap-boards, split and sold on the land 500.00
Hoops, shaved on the land and shipped to St. Louis, Chicago, and Milwaukee 3,600.00
Timber, ties and piling sold to Rock Island R. R. 1,500.00
Rails, logs, lumber, piling and fence posts to Van Buren County and other parties 1,500.00
Fire-wood, cut on land and delivered at retail to residents in Keosauqua, names, dates, amounts, prices and payments shown in detail, over six thousand cords, for which I received over 20,000.00

Having shown this, I leave the reader to conclude how far I fled from the drudgery of my youth.

Youthtime in this section would be inadequately considered with its schooling omitted. Our annals contain ample accounts of frontier schools, scholars and teachers, but I know of no account of learning before the advent of schools. Before the "Martin" schoolhouse was erected, as the first west of the Des Moines river in the present limits of the State, we had lived here five years. That house was built by father and his neighbors, Jacob Ream, George Lewis, Josiah D. Minton, Erastus Fellows, Peter Mort, David Ferguson and James Martin, in 1842. Father had eight "scholars," and each of the others almost as many. From its settlement, each cabin, like our own, was, in the idle moments of its inmates, a schoolhouse in itself. Of our family, some had had a little schooling in Ohio. They and others a little in Illinois. But some had had none. To understand the way these minds were urged along in winter, as their muscles had been in summer, I will ask that you go with me (in imagination) on a snowy night in the late 30's, to the cabin of James Duffield. Within its walls are to be found the only forms of recreation, and all the comforts the settler has. Tracks and marks outside the door show that "Old Jule" has lately dragged a large "back-stick" into the house. I also ask you to observe that the newest tracks of the horse lead out of the house. We open the door and to our left the end of the cabin seems almost afame. In a moment you can distinguish the figures of the settler's family grouped about the hearth, and the form of the huge
wood-pile against the wall. With his back to the wood, his long legs stretched out into the circle of light, his clasped hands supporting the back of his head, sits father, next to the fireplace jamb. Between his knees, sitting on the floor, is a child of five. To his left sits his mainstay and eldest son John, who from his lithe, strong form and black shiny hair and eyes might almost be mistaken for an Indian. Next to John a younger brother or sister, and so around the circle, the rest of the children on the floor, except Maria, robust, plain, modest daughter and companion of mother, as John is of father. Maria has a chair, and in her lap is a baby brother of perhaps three. Between Maria and the jamb to her left, opposite father, sits our mother. I wish the picture of an ideal frontier mother might be placed on canvas. The only rocking-chair the cabin boasts is hers. A child asleep at her breast has dropped his head back upon her left arm, to support which she rests that elbow on her knee, and this, with more of comfort than of grace, perhaps, she has thrown over the low arm of the chair. The left hand holds an old worn "blue-back" Webster's Spelling Book. The other holds a greasy, flickering tallow candle. Its little flame adds nothing to the fire's glow upon her face, and takes little from the shadow on the page before her eyes. As she rocks to and fro she pronounces the words. Father on his side nods and half sleeps until some member of the circle becomes inattentive, or the fire burns low. The lesson began with half a quarrel between the elder and younger children as to whether mother should commence to "give out" words at "baker," or from some easier or harder page. Such quarrels always ended the same way, mother discreetly commencing at a point no one had chosen. The class began with Maria. Then William, Joseph—I might as well tell it as it was—it was Maria, Bill, Jo, George, Jim, John and even little Harry, who, in this manner, learned to spell every word of one syllable in that old book, without knowing one letter from another, and before he ever saw a schoolhouse. Round and round that circle would go the words. At first the short, easy words, missed by no one for perhaps half an hour. During all this time each boy and girl may have been crack-
ing and picking "goodies" from his hoard of nuts hidden in the fall, each in his own secret place, "under the bed where no one can find them." Nevertheless, all attention is fixed on voices of mother and speller, and an error in the spelling of a word was detected instantly; likewise if mother skipped a word or pronounced them out of their order on the page, it was known at once. No playing or visiting was tolerated. A breach of the rule, and "Bill!" "Libbie!" or "George!" was shortly accentuated by a heavy but not painful stroke from father's open palm. In an evening while the words flew round that circle, its lines would be driven outward by the greater heat and glare or the flying sparks from new chunks thrown on by father. Or the line might be driven in by the cold upon our backs as the fire died down. One from the line might hustle up the ladder to his store of nuts and back again. Another might skip to the water pail and back into his place, but never a word be dropped in the lesson. True, a word would often be misspelled. But no one ever missed his turn at trying. The system involved no persistent application, nor did it cover a great range of learning. But with such a teacher, such an enrollment, such a course of study, and such a house, the frontier settler had to put up until the schoolhouse came. Even with the poor light, the crowded hearthstone, the differing proficiency of the children, and that single text, wonders were accomplished in nearly every cabin.

Sixty years have not effaced from my memory the way such an evening ended. When mother thought it time to go to bed she skipped along to the harder words. Tired little heads droop over upon others' shoulders. The youngest in the laps of elders have gone to sleep. Mother and Maria have carried their sleepy burdens to their proper beds. Father has heaped the greenest, wettest sticks upon the fire. Maria draws the chairs into their proper nooks, and into the fire, darkened and crackling with the fresh wet fuel, sweeps the shells and litter from the evening's play. These flash into a brilliant flame. Within the shadows are the elders, and out in the full glare the youngsters racing to be first denuded. With the sputtering of the last shells, Maria tucks the covers tightly round the chil-
dren’s forms. With chattering teeth we are “spooned up,” three in a bed, hoping to keep from freezing. It was in fact to steam and sweat until frost fringed the edges of our covering.

In 1862 the board of supervisors of Wright county contracted to sell to the American Emigrant Company the swamp lands belonging to the county for the sum of fifteen hundred dollars. This contract was submitted to the people at the general election in 1862 for ratification and nearly all of the voters of the county voting, voted for the contract. In fact, only one vote in the entire county was against the proposition. In pursuance of the vote, deeds were executed conveying about eighteen thousand acres of land, which today must be worth not less than half a million dollars, and probably a million dollars is nearer its actual value. In those days swamp lands were not regarded as valuable. They were looked upon very much as some of our people regard franchises. However, the people of Wright county afterward recognized the enormity of their folly and after long and expensive litigation, recovered a part of the property they had so recklessly given away. —W. J. Covil, in Webster City Freeman-Tribune, July 13, 1904.

PRAIRIE FIRES.—There have been prairie fires in all directions, for the past two weeks, which have done an immense amount of damage in some localities. As far as we can learn, the fire which occurred on the west side of the river, last Monday, extended for a distance of 25 miles down the river, stripping nearly every farm of its fences.—Fort Dodge Republican, Nov. 5, 1861.
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