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About the Institute

The Hunt Institute for Botanical Documentation, a research division of Carnegie Mellon University, specializes in the history of botany and all aspects of plant science and serves the international scientific community through research and documentation. To this end, the Institute acquires and maintains authoritative collections of books, plant images, manuscripts, portraits and data files, and provides publications and other modes of information service. The Institute meets the reference needs of botanists, biologists, historians, conservationists, librarians, bibliographers and the public at large, especially those concerned with any aspect of the North American flora.

Hunt Institute was dedicated in 1961 as the Rachel McMasters Miller Hunt Botanical Library, an international center for bibliographical research and service in the interests of botany and horticulture, as well as a center for the study of all aspects of the history of the plant sciences. By 1971 the Library's activities had so diversified that the name was changed to Hunt Institute for Botanical Documentation. Growth in collections and research projects led to the establishment of four programmatic departments: Archives, Art, Bibliography and the Library.

was another life time. She was a little
weakened but still good. Never quarrelled
never fretted; always an optimist. She
lived for us boys (some of us). Self-
sacrificer was her religion. She was
the eldest daughter of ^{Presbyterian} ~~Episcopalian~~ and
his amanuensis and confidante.
To her life was a magnificent opportunity
to be utilized for the benefit of the world
through ^{her} ~~her~~ moral and moral cleanliness,
and Nature was the expression of God
to us his creatures. All the wonderful
adaptations and machinery of plant and
animal structures were illustrations of the
infinite care of the Creator for his creatures.
Everything just exuded God. and it was
all ours for the taking. She loved the
flowers & always had a ^{fresh} bouquet from the
month which she had stimulated us to

Typed
(27)
gather for her. When we were very
little she told us about the burning
Dutchman's beeches (*Coccinellaria*)
the squirrel corn (*Deutacis*) the
blood root a plant that sweat blood
(*Sanguinaria*), the grand not good root
(*Eriogonum*), the squamblers (*Epigaea*)
with little red berries behind them, the
sorens. the trailing Sabots, the Butts
(*Trillium*), the muscain and lady's
slippers (*Cypripedium*), the Golden Rod, of
the fall and the Gentians and asters.
All these she pointed out to us as they
bloomed. She lived before the days of
girls' schools. She was always delighted
to have us bring her freaks. One day
we boys came across some tree roots
that had crossed a gutter and grown
together, and she told us to take

it up to Mr. Olds the pastor of the church to show him. This is one of my earliest remembrances of nature study. My father was a lumberman & owned a saw mill right by the house that ran night & day during the spring months. He was a natural mechanic & could make anything that he wanted. Being his oldest son I was early asked to turn the generator & sharpen the ax and knives and to wash the lumber to green the big mill saw. He taught me to fish in the big mill pond that furnished the power for the mill. & then I learned to swim and to row & skate. Then in busy time he would take the big lumber wagon and some barrels & baskets and all the neighborhood children & go out into the forest roads to

gather nuts (see typed sheet) page gone

^{meadows}
fall down in a stream, Then my young
father would rub in with pails to gather
the nuts. Often we would gather a
wagon load of nuts in a days work.
It was great fun. But it was no fun
for us boys but boys to pick our way
among the chestnut barks to get chestnuts.
My father taught me all about timber ^{typed sheet covers "arguing off"}
and how to tell the different kinds of oak,
hickory, ash, maple and birch. My half-
brother I used to cut ^{of stone} ~~coarse~~ wood and
lath out of the slabs after father put in
a circular saw.

Then father sold the sawmill I moved
to Iowa on the wonderful prairies,
where I grew up from my early teens.

Everywhere were flowers, all strange
except in the natural grass a mile away.
There were some trees and flowers like those

When we moved out on the prairie father built a one-room shack to live in and with his big 4-horse team broke up the prairie. Just at sunrise the great flocks of thousands of prairie chickens used to alight on the smooth sod and have a carnival. The roosters would scratch their necks & pull out the red feathers & then dance their wings & strut before the hens & fight and chase. The breaking would be done with them. If we needed meat father would strike the old muzzle loader right through the window & shoot a rooster for breakfast. In the fall we had to put up much hay for winter. Those days ^{you} could catch the prairie ones

anywhere for a cold day. Our nearest
neighbours was a mile away. The
fall & winter were the school days & we
had to walk a mile to school where a lady
taught her daughters & Mrs. Verbael
Kuthrie winter spelling & geography &
grammar. In the winter we had
spelling matches and parties when the
parties were all ice & snow. These were
terrible days when the blizzards blew
you to the marrow. But it was all a
part of the life. It made us sturdy men
& women. This was my environment.
[To get an education was a part of
mother's religion, and so I was eager to
be old enough to go to college. We had
a one-house boarding college in Germantown
with half a dozen professors, mostly

minuties. Some of them were great men, but none of them looked upon science as anything but an educational Greek. Education meant proficiency in literature, language & religion. So I was converted in the first Moody meetings for fear of Hell. Then I joined the church & became an active member all my life, and spent 7 years as a preacher. In college language took first place, so I became proficient in Latin & Greek & knew German & French, & later on Spanish. I decided to devote my life to Latin. I was elected tutor of Latin in the college after graduation. All this time my recreation was with the wild flowers. My mother was always pressing me on to know more of them. This was so much a

part of my life that I never thought it
any work to study flowers. So at graduation
I knew more about the flowers than any
one else, but that was nothing to me. It
was simply recreation.

Then a year passed and I drank to
the deep the pleasure (?) of teaching a
dead language. Fortunately at this
time the sterility of my teaching had
ruined my health & it became evident
to me that I must get out into the open
air. Then it was dawning on my dull
mind that I was not a linguist for I
did not love it. I had begun to
collect and press & preserve botanical
specimens & to correspond with the
leaders in botany in the east. Then
an Austrian gentleman in Europe

Had to rewrite
this - mgs

Botany as life - work

5

all copied

was anxious I should gather the
flora of the great West and send them
into the world. So my disgust at spending
my life teaching Latin, and my poor
health conspired to suggest to me to
become a real botanist. The moment
my attention was focused on it I
became obsessed with the idea. The West
to me was a wild region of buffalo &
redskins. To go there required courage
but I never feared anything. So I planned
to go.

equipment for Colo. trip

The first thing was equipment. I knew
nothing about what to take, but I had
plenty of good advisers. They told me to
take very heavy cowhide shoes such as
they had for the army, and to fill the
soles with hobnails. These would

6.
protected me against rocks and snarles.
Thosedays we used to wear heavy boots,
and keep them well greased. Then my bo-
tanical equipment required plenty of
drives and sheets to put my specimens,
and specimen books. The only drives
obtainable I made of brown wrapping
paper folded 4-double and stitched on
the edge. These were 12 by 18 inches. Then
for collecting paper I bought large quantity
of tissue paper cut 24 by 18. For my
specimen books I took ordinary manila
wrapping paper folded in quires and the
quires stitched together forming a book
about 6 by 10 inches. Each book held
about 800 pages. On the first page I
wrote No. 1. and beneath this the date
and place of collection and the name

of the plant (if I know it) and a small piece of the plant for identification. Then on each sheet containing the collected specimens I put No. 1. I did this with every number in the collection going up to over 800 that year. Experience taught me that this method was bad. For often a sheet contained more than one kind of flower. I had already discovered that to make good specimens you must throw out your dices in the sun every day today or your specimens blacken or mold. So the opening of your bundles and changing the dices every day is a fearful kind of dishwashing. But must be done. And when you have several hundred dices all working at once the changing is dreadfully personified. I had

early learned that to make good botanical specimens you must dig up the whole plant, and if it is too large for your sheets you must fold it skillfully to fit the sheet and still look lifelike. Then if you do not immediately put your specimens in the collecting sheets in the field they will wilt and then not look good, or at least will be hard to make lifelike. This led me to make a collecting can 20 by 6 inches with a tight fitting lid in which to put the specimens. I soon learned that this was a nuisance, but for some years I carried a can. My fool advisors told me to carry a butcher knife or a trowel to dig up plants. stupid devices, but I did it till I got a little sense and appealed to my own good matter. Then I went to

9.
a blacksmith and had him make me
a light pick, with one end a pick, and
the other a blade $1\frac{1}{2}$ inches wide, each
end being 6 inches long. Then I had
him make an eye large enough to
take in a handle almost as large as a
pick handle. Then I bought a small
pick handle 3 ft. long and inserted it
in the pick, so that I could use it as a
cane for walking and climbing. Thus
equipped I could dig up any ordinary plant
at a single blow, and could kill snakes if I
ever saw any. This was my equipment. As
the years passed I modified it. I found that
heavy sole lemnisc shoes were the best and
lightest foot gear, and that you almost
never see snakes and so need no protection
against them. Then shoes far superior any

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athus for climbing rocks, and are indurated
only in each slide or sarcophagus. A pair will
last six weeks and cost less than half
as much as leather shoes, and weigh only
 $\frac{1}{4}$ as much. People seldom count the cost
of heavy shoes in a day's walk, but to lift
several pounds on each foot at every
step takes a vast amount of energy in a
day that ought to be saved. Thus far
dies are now ^{double faced} ~~made~~ corrugated cardboard
tightly strapped down, which seldom
needs changing. I have gone weeks
without changing my dies once
except where specimens were specially
plunged. A bundle of plants in these
dies hung up in the wind as put out
in the sun will dry quickly without
attention. ^{Photographing 2000 in 100 + specimens 12 x 18 in.} Then the matter of express

is critical. We used to have a
wide board with a heavy rack on it.
But I soon found that when I had a big
bundle of plants lying under a
board the margins would crumple
in dying for lack of pressure while
the center would be crushed by the
weight. This fact has been known
long, and various special presses
have been made to remedy it. One
a slot press that can be stepped
down but this is heavy and soon
wears out. Then some idiot in my
earlier days invented a frame press
made with heavy strap iron frame
with hooks on the end for bear chains
and with bales punched on rods of flat
and wires laced in. This was heavy

efficient and always getting out
of order. but could be used as a
collecting portfolio.

My 60 years experience has taught me
that to do the best botanizing you must go
light and have the least possible baggage.
and must not carry a car, but have
everything needed to get plants. so I take
a first class ^{camera} portland ~~lenny~~ heavy
tripod and a large screen, a ~~fine~~ fine
field glass and binoculars, ~~a~~ ^{at} picks with
~~handles~~ ^{light} and a pocket folding Kodak
lens, a heavy pair of overalls with plenty
of pockets, a wool shirt, a cork hat,
and a pair of heavy socks & tennis shoes
and I let the duds have the rest. If it
is very dry and a foot trip here I also carry
a small canteen. My plants I put at

12
comes in a collecting portfolio made
as follows. I get at the paint brush
or paint shop four (or more) pieces of
tar board no. 14 cut to 11½ by 18 in.
Then go to a dry goods store & buy
usual yards of oilcloth. This I
cut down & cut into pieces 8 in.
wide all around than the tar boards.
Then I lay them face down a table
and cover the cloth side with a uniform
layer of starch paste or Le Page's glue. Then
I set a sheet of tar board exactly in
the middle and carefully fold the
edges of the cloth over them cutting off
as follows under the corner. I treat
each tar board the same way and
pile them up & keep under pressure till
dry. Then I take two of these for a

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collecting porcellais and two each
for a press or presses as I may
need them. For the porcellais I
use a ^{shawl} scarf. For the presses
I get two left. 2 in. strips made of
Solid leather with holes punched 1 in.
apart & a stout buckle. I sit on
the bundles forming the press & pull up
the strips tight daily. For my
collecting sheets I get at the print shop
a ^{blank} ~~newspaper~~ paper cut 2 1/2 by
1 1/2 inches and folded in quires, I
take 2 to a quire for a top and
strip them up in the porcellais. As
soon as I get any plants I sit down
on the ground after my porcellais &
take out a sheet & write on the lower
left hand corner (facing me) the date

and locality and any other notes
about the color of flowers, etc. and
I have the sheet open from the right to the
left (facing me). Then I lay the specimens
down in the open sheet so that they
do not touch each other. Then I fold the
open end back over the specimens I
put a fresh sheet on and repeat till
all are in. If specimens are put in partly
the fls. & leaves usually lie flat and look
like without any pressing over them.
Once in a while a leaf or flower needs
attention. Then I pile up the other
specimens of paper in the filled sheet &
put in *portulaca* and test along for
another picking. When I get all the
plants I want in the trip is made
I go home & without opening the sheets

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I transfer them to the press putting a sheet of ~~card~~ board between each sheet, and I never open the sheets till dry, usually plants will dry in 2 days to a week. Never open the sheets till dry or you will crush the delicate parts. When your sheets are dry they will feel warm to the touch, not cold. Then they can be taken out of the press, stacked in a pile and strapped up in an empty press. But it is best to see if the stems are dry before you finally strap them up, if not dry then leave half a day or sheets and set them out in the sun tied up for an hour or so. This is the whole secret of making good botanical specimens. Don't let anybody fool you by saying that

that that as the celtus is the which ¹⁷ is
of doing things. Just use your own better
sense. If you can make good
specimens standing on your heads as
clumping along in heavy boots then do
that. Yet there is the motto of a botanist.
I find it best to do my work with the
least possible effort and to save my
energies for more important things and
so at nearly 80 years of age I am
still climbing the mts. with the young
falks.

My first remembrance of school is that when I was four years old father took me out to the north school to an evening exhibition to speak a piece before a jammed school house, I was a little chunk of a boy and was loath to get up and speak because I had done a job in my panties and did not feel like moving, but all the same I had to go for father did not know what was the matter with me, and thought it was diffidence. So I went through my part and got a great ovation.

Father owned quite a piece of ground half a mile north of the center of Jefferson on the plank road that led to Ashtabula which was a lake port on Lake Erie and 12 miles from our town. Just north of our place the creek that supplied father's mill crossed the plank road, and flowed on to the Grand river a few miles to the west. There was quite a drop crossing the creek and the road had been built up some 25 feet in an embankment that ran clear across the depression. In the center of this embankment was a wooden bridge which had rotted out so that it had to be replaced. I was then about eight years old. I remember one night in the fall when this bridge was all out and the road filled with big timbers a foot or more diameter and many feet long, which were ^{to} be the stringers of the bridge were laid parallel with the road and in it so that there was only a little space of a few inches left on the track where the wheels of the trucks went in hauling the timbers in place. The builders had set up a warning board to keep all vehicles off the bridge and across the track. The night in particular to which I refer was rainy and ^{pitch} dark. Father for some reason wanted to go to town that night and asked if I did not want to go along. I was his oldest son and he took me almost everywhere he went, leading me by the hand. When it was proposed ⁹⁰ Carl, my next younger brother began to squall and wanted to go along. He was always wanting to ^{go} along, but father did not want to ^a take both of us. Finally I compromised with him by offering to give him a handful of chestnuts if he would stay at home. Father took a lantern along to light the way and an umbrella and I kept close to him to keep out of the rain. While we were gone a young man with a young

2 lady
driving a team and buggy came along and in some unknown way drove through all the timbers and over the brink and down 25 feet vertically into the creek, nearly killing the team and injuring himself and the lady somewhat. He yelled lustily for help and the Daniels family living next heard him and went to the rescue. George Daniels, the only son and about my own age immediately posted across the road to our house and told mother that father and I had fallen off the bridge and got killed. Then Charl broke out and wept and said "Now I wont get my chestnuts".

Mother was very religious and was very anxious about bringing up her family under the best of religious influences. My parents considered the religious influences of Jefferson to be very bad, and so to avoid as much as possible the evil sent all us children to the north school instead of the town school which was twice as near as the other. This school was a mile from our house and on the plank road. It was a little one-room building capable of holding fifty pupils, and was heated by a big drum stove set in the middle, and burn-in wood. There was a rather large central aisle and two rows of double seats with slanting tops and board benches to sit on. Then there were two long benches in the aisle for the little ones to sit on and for classes. Every pupil had his own books bought by his parents. There was a little shelf under the top of the desks for keeping the books when not in use. There was also an ink-well in the top of the desk. There was an aisle all around the desks next the wall, where the classes stood while reciting. Each class had a set time for recitation each day, and the pupils promptly filed out of their seats and took their places along the wall or in front of the long benches facing the teacher. Every pupil was expected to know every part of the lesson set for that day, and was called on by the teacher to recite whatever part called for and to explain it if needed. Sums in Arithmetic were put on the board and done in the presence of the teacher. Spelling was taught by beginning at one end of the line and spelling each word in order. If a word was missed the speller was sent to the foot of the class, and if too many were misspelled by the same scholar he was kept after school to learn the missed words.

3 . When I was very small scholars were allowed to study out loud, but before I was grown this was changed and absolute silence required, and without any whispering which was severely punished. If a pupil wanted anything he had to hold up his hand and wait to be recognized by the teacher before he could speak. At first girls and boys were allowed to sit together, but they were soon segregated as more conducive to study. At last girls were put on one side of the room and the boys on the other, but at first girls often sat on seats in front of the boys. But the pranks of the boys on the girls made this an unacceptable arrangement. There was a hour's recess at noon for dinner, and 15 minutes recess in the middle of each (morning and afternoon) session. All pupils were expected to be out of the room during recess except in rainy weather. No pupils were allowed to go off the school grounds during school time unless sent by the teacher. Punishment for infractions of the rules was by various devices according to the gravity of the offense. Girls were often made to sit with the boys for slight offenses, or sit off on some isolated bench, or stand up in a corner, or stay after school. Tattling on another was considered a crime by the scholars and was punished by boycotting, and taunts. The boys were treated a little more severely than the girls, and whipping was often resorted to by means of green switches. Pupils were often jerked around or slapped by the teacher, according to her favorite method of punishment. I was one of the worst offenders, for I was always full of pranks and inventing new stunts, and usually got whipped once a day. We used to make spit balls of chewed up paper and throw them or spit them at the ceiling or on the bare necks of the girls. We used to make bent pins with the tip standing straight up, and putting them on the seats for others to sit on. We used to jerk the long braids of the girls, and otherwise annoy them in every way we could, but always when the teacher's back was turned, but we were often caught. I was generally compelled to sit separate, but was for a time stood in a corner facing the school. Then at the opportune time I would draw a face or strike some grotesque attitude and set the whole school in a roar. Then the teacher would turn my face to the wall. Then at the proper time I would contort my body so as

4. cause a laugh, for I could imitate anything. My punishment usually ended in a whipping or being kept after school. I was never vicious, but always the band leader of the teacher. Our recreation during school recesses was Pullaway, town ball, jumping and running and wrestling, or playing tag. Fighting was also a very frequent amusement. If one of us wanted to fight he would go up to another and call him a liar or son-of-a-bitch. Then they would grapple till one was down on his back and called quit. If he did not say that he was beaten up till he did. The big boys never used to fight. I soon became the leader of this cult, for I was very wiry and strong, and quick. After I got the reputation of being the king-pin of our crowd this caused the envy of the bully of the town crowd, and so he sent me word he was going to lick me the first time he saw me. One day we met in town and he jumped me. I at once grappled him. He was about my size and weight and build. So we tugged and wrestled for half an hour till we were completely exhausted but too proud to acknowledge defeat, and so were standing there panting and tightly gripped when an old lady came along, one of those old and skinny kind with thin lips and bloodless, who have it in for red blooded folks. She took hold of us and separated us and scolded us for the great sin of fighting, and we slunk off, each in his own way and never met again, and tickled to death for the chance to get out of it without acknowledging defeat.

The girls used to play drop the handkerchief, or some simple and not boisterous game like it. They were supposed to be very demure, and not imitate the boys in anything. If one did imitate or wear a boy's hat or the like she was called a Tomboy. This would be named Flapper now. The girls always wore their hair in long braids down their necks and tied at the ends with a ribbon if they could get one, or with a string. The big girls were supposed to lace and stuff their bosoms if flat chested and otherwise disguise their lacks. Their dresses were mostly in two pieces, a skirt and waist which fastened at the back with hooks and eyes. The skirts came down just to the ground, and they always had one or more underskirts and a thick petticoat., and split drawers, mostly of white cotton. The drawers came mostly down to the knee or

5 below and were often frilled. Thwir stockings were mostly white cotton and came up to or above the knee and fastened there by a elastic garter of some fancy design, just above the calf of the leg. Their ^{shoes} ~~shoes~~ were of soft leather and low heeled, but often long legged and laced up in front, particularly in the country. The waists always had long sleeves, and rather tight ones. Women and girls were never expected to cross ~~the~~ their legs, and only their toes were allowed to show beyond the skirts. Mostly they wore hoop skirts though once in a while the fashion would be to go without any hoops, but this made them look so skinny that they drifted back to the hoops. Skirts were seldom plane, but flared much at the bottom and were flounced or pleated. The little girls wore short stockings on their bare legs and skirts coming down half way between the knee and ankle and no drawers. They wore shoes. Hoods were the style for all females. They were mostly crocheted, and very beautiful. The women vied with eachother in needle work. And every girl was supposed to be a good cook and housekeeper.

In the fast sets dancing was the prevailing thing, but among church people this was a sin and not permitted. Card playing was also taboo. The better class did not drink nor gamble. Most of the men smoked but the women did not. We boys had for dress a heavy pair of all wool pants which were tucked into the legs of our boots. we wore no underclothes, but had heavy wool shirts. Our pants were held up by suspenders. We had heavy wool coats. We also had wool or fur caps with laps for the ears. We also often had heavy wool comforters about six feet long and a foot wide that we wrapped around our throats. We also had wool mittens, or rarely fur ones with fingers. We all wore heavy cowhide boots with tops coming up nearly to the knee, and with outside lifts for pulling them on. These boots were supposed to be kept greased with tallow so that they would not leak water. We wore heavy wool socks. There was little difference in the kind of wear for the different seasons, though we boys often went barefoot. The state of morals was high those days, girls seldom went wrong. The social side of life was very active during the long winter nights. There was a general air of comradeship among the people.

I stated that father's place was half a mile north of Jefferson on the plank road. You will ask why the ~~road~~ ^{plank}? When Jefferson was settled it laid in deep woods, and it was difficult to get to the lake shore because much of the way was swampy, and was hard to negotiate by wagon, but the traffic was considerable. So grandfather Jones, Joshua Giddings, and the other leading men conceived the idea of building a grade through the huckleberry swamps and lining it with oak plank, and making it a toll road. Lumber was a drug on the market those days, for there were several mills wherever there was a chance to build a dam to hold back the abundant water that flowed through the many gulches. Father's place followed along the creek on the ~~xxx~~ north side as far east as the graveyard road which was a quarter of a mile away, and was bounded on the north by the road that came in at right angles to the plank road. Father had cut down all but a few magnificent hard and soft maples on the upper stretches where the ground was level, and had planted it to a young orchard which was fenced in from the creek bed, by a worm fence. Our house was built in the angle between the two roads and a hundred yards up at the top of the slope that led down to the creek, and this left a large area which he planted to grass after filling it in. Close to the plank road was a huge soft maple tree that the fill endangered. The original house in which I was born was a kind of log cabin, one story and with a room or two. Joining this and covering it father built a two story modern house on the west forming a T. This was done a little after I was born. Next the house on the east was the garden, then a great big two story oak barn where he kept his horses and cow and stored his hay and grain for the winter. Father also had a cellar under the house where he stored vegetables and apples for the winter. On the south the town side the bank of the creek dropped down in a precipice some 20 to 40 feet deep to the creek. This was bordered by soft maple trees. Just about opposite the barn on the creek father had built a big dam going full across the creek to each wall which was probably 100 yards long. Just in the middle of the dam and just below it was a great soft maple tree. Adjoining the precipitous side of the creek and on the end of the dam next our house father had had built the mill which stood on tall beams resting on the level bedrock,

and its floor was level with the top of the dam. This was ^crambling one story building with a shop for carpenter work and grinding the tools and had a big stove in it, and was fully enclosed. The rest of the mill was open on the side. Running up the slope from the mill to the barn was the log yard and runway. people who wanted lumber sawed would haul their logs into the yard and unload them in a line so that they could rolldown to the mill in their turn to be sawed. Once some boob did not properly control his log and it got away and rolled down into the pond where it remained many years the delight of us boys when we went in swimming in the summer time. It soon got waterlogged so that it kept the same side up all the time. We boys would get it out into deep water, climb up on it and stand up and begin to teter it back and forth till it rolled over, then we would keep it rolling till the last boy was spilled off. The one who stayed on longest was king. Father had two big gates built in the spillway for letting the excess water out during the spring runoff in order to save the dam from going out. He had also built a square penstock about three feet diameter to carry the water to the overshot wheel that furnished the power. The wheel was just a big paddle wheel against the paddles of which the water rushed from the pen^pstock. This wheel was probably ten feet long by six feet high, and had on one end a big crank, on which a big sweep was fastened which ran up to the floor above, and on the end of which the saw frame was fastened. The power was frunished by raising a gate and letting the water on to the wheel which caused it to turn over, this made the crank turn around and this made the sweep go up and down a foot or two at each turn. The saw frame was made of oak or hickory, and very strong and was square and probably aix feet high by four feet wide. This slid in upright ~~grooves~~ grooves which wre kept greased to enable it to slip easily up and down. In the center of the frame a mulay saw was fastened. this was made of very hard steel and about 1/4 inch thick and a foot wide and six feet long. with teeth an inch lon on the cutting edge. The logs were run out of the runway on to skids made of strong logs, and from there carefully rolled by canthooks, one at a time on ^{to} the the carriage which was a, long frame running on little wheels back and forth on a track and having no bottom. One end of this frame had a move^{le}able

table so as to be adjusted to the length of the log to be sawed. The other ^{end} ~~end~~ of the frame had a similar fixed table. Both tables had several steel dogs made by bar steel bent at right angles and sharpened at the ends. When the log was in position these dogs were driven in by a sledge to hold ^{the} log in place while being sawed. The log was also placed at each end on a plate sliding on the ^{table} and run by a ratchet worked by a lever so that the log could be moved any distance from half an inch or ^more at the will of the sawyer. Each table had the same kind of ratchet, and each end of the log had to be moved separately. When all was ready father started up the saw and the carriage was forced up against the saw by a gear which could be regulated according to the ease with which the saw was cutting. This gear carried the log up against the saw till a cut was made the full length except the last four inches when the saw stopped automatically. Then a lever was thrown and the carriage was brought back to the starting point. Then the sawyer would shift the ratchet an inch or more according to the width of cut desired and run it up against the saw and made another cut of a board or plank or beam as desired. Generally after the first cut was made the dogs would be released ^a and the log given a half turn (a right angle), and a new cut made, then turned again and so on till all four slabs were cut. Then there would be left a square timber ready to be cut up into boards. When all the cuts were made father would release the dogs and with a canthook roll the cut log off on to the board way and take hold of the cut end and flip it up so as to break the selfedge on the other end. This ^{he} would do with each cut. Then he would take an adz, which is an ax with the blade at right angles to the handle as in a pick, and carefully chip off the selfedge on each board or cut. Then the lumber would slide off the runway ready to pile up or ~~take~~ carry off. The slabs would be thrown out on the slab way and either burned up or cut into firewood on a circular saw, or made into lath. In later years father had put in a circular saw run by a beffel wheel and it was the job of Will and ^{me} to cut the slabs into lath and firewood, and it was a picnic for us, for in making lath there were always strips of wood not suitable for lath which we would drop down on the top of the saw when father was not around to prevent it. The saw teeth would catch the strips and shoot them

with tremendous speed clear across the mill. We would banter each other to see which one could hit a certain mark. Father did not like this kind of play fearing we would get hurt. All kinds of lumber were sawed, but it was mostly hickory, beech, ash, maple, and white oak. there was some cottonwood called whitewood, and a little basswood (Tilia). The preferred maple was hard maple though some soft maple was cut. Oak and hickory were seldom cut those days into boards. The ash was mostly cut into oar stock. The plan was those days to spend the winter days when nothing could be done but tend the stock, put your tools in shape, and carry out manure on the fields, to go out into the woods, pristine woods, and clear off all the dead timber and pile it up and cut the larger pieces up into wood, and trim out the trees where they were too thick, and cut down the big trees for wood and lumber. We burned wood for fuel exclusively, for coal had not yet come into general use, and was also too dirty with soot to be good kitchen fuel. So when the snow began to be deep the farmers went into their wood lot, and every man was supposed to have a wood lot, and cut down such trees as they required for fuel and lumber, and cut them up into suitable lengths for hauling out on to the home place or to the mill. Ox teams were the only means of hauling those days, except an occasional case where the farmer owned a good horse team. Later on the wood lot was used in the summer for pasture, but in those days was too far away for that purpose. The woods were wet and soggy all the time, and it was quite a stunt to get the timber hauled out. They used four to six ox teams. Loading the logs on the sleds was a very hard job, and required several men to do it. Then the oxen were not quick but steady and hard pullers, and it required great strength to get a log started after it was loaded, for the runners of the sleds were frozen to the ground by the time the logs were loaded. Since my father was an up-to-date man and engineer he knew all the little kinks of woodcraft, and in addition had a spanking good team of black mares ^{which} ~~also~~ just enjoyed the fun of hauling logs. So father would drive the team and bob sleds up parallel with a log of any size, and put skids from the sled to the ground after taking out the bolster stakes. Then he would go to the middle of the log and dig a hole under it enough to slip a chain through it. Then he would take two or three turns with

the chain around the log and hitch one end to the sled and the other to the doubletree of the team, and have the team set at right angles to the sled. At the word the team would jump into the work with a bang and unroll the chain as they pulled the log up onto the sled. Then at the word they would stop as the log hit the center, and father would unhitch and drive the team in front and hitch them up ready to start out of the woods with the load. Father would fasten the log to the sled so that it could not roll off at some sidling place, and by a chain and binder. Then when all was ready the team would be all a-quiver to start. Father would ease them back so that the tugs were limp and then at the word they would spring into the harness like a shot and either the load would start or the tugs would break. When once started it took no effort to keep it going till they got out on to a good road, where they could be halted to get their breath. I remember father loading an ash log four feet diameter and 15 to 26 feet long, weighing several tons, and hauling it out when a six ox team could not start it. This was father's glory, to do the impossible, and it is likely that this early experience was the inspiration that has led me to do the impossible all my life. Nothing ever inspired me more than to have someone say a thing could not be done, when I would undertake it and do it. Most of our inhibitions are bugaboos.

My father was his own mechanic and did all kinds of jobs about the mill. One of the hardest jobs was to keep his big saws sharp. This generally kept him busy half a day filing them down so that they would cut. The first job on the big mulay saw was to gum it. This was done on a powerful steel machine that bit pieces of steel out of the saw to make the teeth longer so that they could be filed sharp. He would set the saw in the right place and then I would grab the big and long iron lever and put my whole weight on it and often jump up and down on it before it would cut the bite out. Then the next thing was grinding the teeth on a grindstone, which was a big job and a long one and I had to turn the crank while he held the saw. Then the last job was filing the teeth sharp. This was an excruciating job for the teeth could be heard squeaking for half a mile. Often the teeth had to be set in a special machine

But this was an easy job.

There was not enough water in the creek to run the mill except in the spring runoff, and so the mill was idle most of the time, but when the water was high it had to run night and day, and during the high water period it was very dangerous, for if the water got over the crest of the dam and began to run off it would soon cut the dam out and spoil a year's work. Therefore eternal vigilance was required to keep out of trouble, and the millmen were at high tension all the time, and all was excitement. I would hear father come up hurriedly for a meal, and bolt it down and tell mother of the events of the day, and hurry back. I would run back with him and go out on the dam at the gates and look wonderingly down at the swirling and roaring mass going through the gates, or watch the water creeping up toward the top of the dam in spite of the great runoff caused by the open gates. Then I would call father and he would rush out and lift the gates higher to prevent the threatening tide. To me it was great fun, for I was a rollicking kid. I would drop a piece of a slab down in front of a gate and it would be sucked down and crushed like a pipestem as it went through. The waste water from the mill made a big river below the dam, frothing and tumbling along in a mad rush.

During the winter the mill pond which was a mile long was frozen over and we had fine skating except when the snow was deep. I learned to skate when I was eight years old, and soon could do about everything that any skater knew, particularly fast skating. We boys used to skate all day and half the night during the holiday season, vacation time. We used to choose sides and play pull-away, or banter each other to go across dangerous places or places where we had chopped out the ice into blocks loosely floating in the water. Some one always got ducked and had to be fished out. I had made it a specialty to learn how to cross such places and so had the pleasure of getting the other boys in bad, but once in a while I would miscalculate and get it myself.

In the summer time we boys would get on planks and float all over the pond before we learned to swim. It was one of our chief pleasures to carry sticks and flat up near frogs basking on the bank and knock them over and cut off their hind legs and cook them in butter in an old frying pan.

The winters in Ohio then were very severe and ^{lasted 16} ~~last~~ two four months with snow on the ground. Many days it would bluster and snow so hard that it would be difficult getting around, and the snow would drift clear over the worm-rail fences and block the roads. This was a great picnic time for us boys, for on the way home from school we would burrow into the drifts and make small rooms or snowball each other or tease the girls by washing their faces in snow.

During the spring runoff was sugar time when they made maple sugar out in the ^{woods}. Every farmer had a sugar grove where he tapped the hard maple trees. They used to cut down elder bushes and cut the stems into lengths of a foot or so and run a wire through the pith, and sharpen one end. Then they would bore a hole about four inches deep in a tree with an inch augur and then drive the elder bush spout in the hole. The sap would soon run out in a stream and be caught in a twelve quart water pail. In half a day or more the pail would be full, Then the farmer would come along with a yoke on his shoulder carrying two empty pails and would take the full pail and leave an empty one in its place, and go back to the boiling place and empty the juice in the boiler or storage barrel. This often took the work of several men or boys. There was a man kept at the boilers to keep the fire burning and the kettles well skimmed. The sap was usually boiled in round open castiron pots two or three feet diameter. After an all day boiling the sap would be down to the sugaring off stage. Then all the boys of the neighborhood and girls would be there to enjoy the sugaring off, and to fill up on hot sugar. The sugar when just ripe would be ladled out with a big wooden spoon into molds set in the snow. It was a ticklish job to boil down the sap and keep in from burning as it got the last stage. The sugaring off stage generally lasted two weeks according to the weather. If it was hot the period was less but if cold it took longer. But at last the sap would sour and cease to flow and the work would be over ^{for} ~~for~~ that year. Many farmers made it a great event and had hundreds of wooden pails they had made for the occasion. A pail did not last longer than one season. As I got older I used to tap our trees and make sugar cakes and take to my best girl.

Perhaps I should say something of school. I was sent to school when I was six years old. There was nothing to do but sit on the front low bench and learn my letters and recite twice a day. The alphabet was given first, capitals and small letters. When we had each letter so that we would recognize it anywhere, we took up monosyllables like cat and dog. We were just told that those letters meant cat or dog as the case might be and that was all there was to it. Years afterwards they began to put pictures of the animals in. There was no phonetic spelling. I had always been a great lover of pictures and learning what they meant. The first studies I now remember were geography and arithmetic. About the first thing I had to learn after I got the numerals up to ten was to add and carry, but it was not explained we simply did that we were told to do, for the book was law. Then came the greatest bugbear of my life the multiplication table. I learned it and as quickly forgot it, time after time. It meant nothing to me. But the class went on and I always kept my finger in the table place so as to find out what any number by another was till we got to complex fractions, then I had absorbed it so that I got along better. Geography was a little book of a hundred pages more or less. All in the class but myself had been over it twice before and been put back to learn it over. At the end of the term I was sent into the intermediate book, a big thin folio one, with a few of the brighter ones in the class. The next term I was sent into the high school class with the big boys and girls and all the rest sent back again. I never had to learn geography, I knew it by simply reading it over. Once in a while I would have to refer to some cape or river to refresh my memory. I did not care a rap for history. Arithmetic was my hardest study. No explanations were ever given for the reasons for anything in that study. The only remark ever given was "That is the rule". Grammar was a bore. We tried to make something hard out of it and succeeded. I generally got my lessons in a few minutes and the rest of the time had nothing to do. So to keep busy I would pull the hair of the girls within reach, make spitballs and shoot them up to the ceiling, or at the heads of the girls, or I would once in a while put a bent pin on some seat to see some boy rise. I was a great person to make faces and keep the scholars in a roar. For these things if I did not get whipped once a day I felt that the teacher was

If I did not get whipped at least once a day I felt that the teacher was too chicken-hearted. They used to stand me up in a corner and I would make faces at the girls till there was too much laughter, then the teacher would make me face the wall. But that was soon abandoned and a whipping substituted. When a girl teacher had to good a gad and hurt me I would set up a blood-curdling howl as though I was being killed, and so escaped getting all that I deserved. This continued till the second year in Grinnell when I was too big to play these stunts, and really began to study for its sake.

As to the trip west from Jefferson Ohio in 1864, there may be a few other things needed to explain before beginning on the trip.

I suppose you know that father and grandfather Burton went to Iowa about 1850 and bought together two quarter sections (as I remember it) east of Grinnell, and a mile north of the Bateman farm. Father also bought some lots in the town of Clinton at the same time. I think at the time the land was bought it was a speculation on their part, never intending to live there. But as father's family increased, and he came to consider bringing up the boys at Jefferson, he and mother seriously considered the problem, and finally decided that it was not right to bring us up under the corrupt atmosphere there. The moving element was the moron George Daniels, whose mother lived across the street from us. This boy was thoroughly bad. It is evident to me that father had the roving spirit inborn in him, for he never was so happy as when out in the wilds. In the year 1862 he took a band of eight horses from Jefferson to Rochester Minn. which horses he had bought for uncle Charles to stock his farm with there. I went with him. We went either to Ashtabula or Geneva and there took a boat to Detroit Mich. I remember being seasick on the boat. At Detroit we disembarked and took the train for Chicago where we disembarked and father bought a studebaker wagon and drove to La Crosse by way of Madison Wis. I remember Madison for its beautiful situation between two lakes, in the woods, and because we had to cross the R.R. tracks, where father sent me ahead to see if any train was coming so that we would not get caught crossing and kill some of the horses. I reported all clear and we crossed. Hardly had we got over when a train came along with a roar, and my hair stood on end to think how close we came to getting hit. Then we stayed some days at La Crosse, and I climbed the first hill I ever saw, where we boys killed a sting-tail snake. I went up the hill with the local boys. The river was about three miles wide then and at high flood, the first big water I ever saw. We were ferried across. Then we drove from Winona which is opposite La Crosse to Rochester and to the farm about six miles out. There uncle Charles gave me five cents a day to feed with bran a starved mare with a little colt. One day the colt kicked me in the chest and knocked me down, my first knockout. After staying there some months father took me back to Winona and then down the river from there in a boat to Dubuque where we disembarked and took the train for Marshalltown where uncle Levi Giddings lived. I remember he had a raft of children and at the supper table everybody was talking at once. Reed, who now lives at Pasadena was the baby. He sat in a high chair and asked for bread by simply saying "bread". Nobody heard, so he repeated it louder, but no response, each time he put more force on it till at last he yelled till he took the roof off, then he got the bread. The next day uncle Levi, father and I got in the buggy, and uncle drove that old horse 35 miles to Grinnell and the land and back, 70 miles, that day, and father shot all the chickens we could carry as we went along. They would jump up from the dust in the tracks and fly off a little way and alight. I never knew what father took the trip for, but it was evidently intended to look the ground over preparatory to moving there. I don't remember anything else on that trip.

The next spring father started west on the 14th. or 15 of April with the family, having sold the old home to uncle Cowles. The reason I remember the date is because the next morning we were sidetracked waiting for another train to pass us when Will and I got out and walked to the head of the train early in the morning and saw the locomotive all draped in black and we asked the engineer what it was for and he said Lincoln was assassinated, and it was Charles's birthday the 15th. I remember we took the stock with us and rode in the caboose of a freight train, after driving to Geneva. I don't remember much of the trip on the cars to Grinnell. I remember another thing about our trip to Minnesota. When we got to Geneva on the way out we stayed there over night and I had a good squall because I was homesick. It was the first time I ever was away from mother in my life.

As Carrie says I remember we stopped some days at the old Grinnell house. It was packed every night with travelers who came in on the train. Grinnell was the end of the transcontinental railroad, and all the freight wagons load

loaded up there, and the overland stage coaches started there. The next year the road was built on and all the traffic left us. It was winter when we got there. For I remember a man had a spanking good team of bay mares and used to drive up in front and swell around with it. He was something less than seven feet high and might have been an inch or two thick, at least he looked like a bean pole. One day when he was out in front his team started up suddenly and he laid back on the reins to stop them and the reins broke and he somersaulted back over on to the ground and the team ran away. Another thing I remember about our stay at the hotel. All the old bullwhackers and plainmen and bunco steerers and sports made their headquarters there. I remember one sharp-faced man with long flowing hair coming down over his shoulders as Ivan Wheeler used to wear his, had a lot of Indian scalpies hanging from his belt, and he used to tell of his hairbreadth escapes with the Indians. He had a 20-foot blacksnake whip which he handled with great skill. One night he was playing checkers with the men. Father was an expert, the best player I ever saw, and so he sat down to try the man, but the man sewed him up in a bowknow in no time. He must have been an expert of high class to beat father as he did. Those days the mud was often hub deep in the streets. That summer or spring as soon as we got on the place, father began breaking up the prairie sod with a four horse team. It was some job, for the red root *Ceanothus ovalis*, and prairie willows *Salix humilis*, were hard to cut off. Then when the sod was turned up father had Will and me take axes and cut slit in the sod and drop corn in for sod corn. As Carrie says early in the morning just at sunup thousands of prairie chickens would congregate on the sod to have a general roundup and love feast. The hens would sit on the ridges of the sod and the cocks would strut, swell out the red pouches on the necks and drum with their wings and say oo oo oo oo oo and stick down their heads, and fight with each other. While the hens sat by and said sic 'em. Then father would softly open the window and stick out the old rifle and shoot. He was a crack shot. I remember how he used to take the old gun out into the woods at Jefferson and bark gray squirrels out of the high trees. That is, shoot between the bark and the squirrel and then kill it, without breaking the skin. I used to think it was some trick, but I have done it myself since. That winter, or the next was the great blizzard on the 14th. of Feb. when most of Phil's sheep were smothered in snow drifts. Father and mother had gone to Mar shalltown on a visit. The wind blew a gale and it was 14 degrees below. The house father built first was the one-room shack with a little loose floor just under the eaves where we boys slept. We climbed up on a ladder. I don't remember just when father began the new house but it was soon. About the first thing father did was to build a wire fence around our property to keep the stock in and others out. I remember every night I used to ride Maria out on to the prairie leading the other horses to pasture. One night father had extended the fence across the path that I used to go over, and Maria used to run as fast as she could while I was on bareback and without a bridle or rope to guide her. Well, she was going like the wind right for the fence and I saw that the chances were I would get killed if she failed to see the fence in time, and even if she did I would get thrown into the fence, so I slid off and landed on my feet and then on my head, somersaulting till my head was jammed back somewhere near my hips, or I felt like it. That was some throw and made me sick. Maria stopped at once and saw the fence and went around it. That first year Phil. and Ed. came out with the sheep and built a sheep barn or sheds and boarded with us. Phil. was a dirty snob, and always insulting to us boys, and I vowed then that when I got grown that if he ever tried to get those dirty remarks on me I would like him till he could not see. Well, when mother died, when I was up town after she was buried he started in on me and I turned on him and told him what I had vowed to do. He shut up like a clam. Now I would have enjoyed wading into him. I would have punched those false teeth down his throat and then some. Ed. was always a gentleman. Theodore came with his mother the next year and used to herd the sheep. He used to take very long steps and nod his head and orate to himself. Then father sold out to Will. and bought the Gardner's grove property. He told me he either had to lick Phil. or sell out, but for mother's sake he sold out. He was a wonderful man those days, had a great shock of black hair.

in fact his whole body was shaggy with hair. He had great knots on his arms like apples when he crooked his arms, and he could lift almost anything. He was a natural mechanic, and could make anything. He used to specialize on axe helms and bob sleds. Then he had the finest singing voice I ever heard. He could go two notes below lower C. and had a range of two and a half octaves. I remember he sang once or twice in the Messiah at the church when John Walker was chorister, had the leading part. As you know he used to teach singing school winters around in the districts.

This covers the immediate period of our moving to Iowa. What flood of things comes up as I look back, but you did not ask for others.

Marcus.

I shall be obliged if the last one who gets this will send in time for me for I want to send it to Nabel, as a part of my autobiography.

Logging Antiquities.

There are some things that should be known about pioneer
 in this in the first part of 1800. New England had become over-
 populated and the state had sent out companies of young people to
 settle the wilderness of the west. Teachers and hunters, however,
 their eyes were turned to the great forests and the great lakes,
 which let young men to form companies to emigrate, their own John
 possession of the back of the forest, where they could make homes for themselves.
 The greed of the benevolence led them to lay claim to large tracts of
 the land, as part of the statutory commitment claimed all the land
 occupied by its founder settlers & was called the Western Reserve
 of Ill. This land was in the same course of this from the period
 since the land was given. My grandfather's grandfather and his
 cousin father R. Giddings were the leaders of a company that went to this
 to form a settlement, and they with their wives took up homes in
 the timber bearing Lake Erie, and settled on what is now North
 Co. at Wayne, 15 miles from the lake and there my father was born.
 and grew up. There were the days before the time of the R.R. and they
 traveled by ox teams, their heavy ox loads and they had
 to cut their way through the forests, and passed as best they
 streams, all they had to watch with were their eyes and
 ears, and so they were never alone. They all had old time
 maps, each with a map which to fight off Indians and
 wild animals and all came to eat. Every man had to be
 a jack of all trades and rely on himself to carry on.
 when they reached Ohio each man laid claim to certain
 tracts of land, and they found some of the land was a
 home, and a timber lot, all was getting back there days as
 spruce. The first task was to clear off the timber so they could
 plant crops of grain and corn, for themselves and their stock.
 they were called logging. They had wagons covered with canvas
 to live in on the road. Their first task was to build log cabins,
 which was done with axes. Various kinds of cabins were the
 young, with they were usually made of logs cut the same
 length, after cutting generally four or five down they then would
 cut, making in the sides of each log so that when fitted across
 each other the logs would bound so that they were airtight. A well
 built cabin was made of 12 or 14 logs, when they were cut off
 and the ends were made so that these would be filled with straw
 to be done to keep out rain & snow & wind. Then the roof was made of

small logs set a few feet apart & tilted up at an angle
across the stream and the ground with grass or brush
up from so on to third water. doorways were cut in the logs
and doors & windows put in windows were made of green paper
they had no nails and nothing but the logs and branches and high
logs of wood to support them. furniture was made of logs and
wood from deer trees cut in strips and twisted & from
them with splits to tie the parts together. They had to make
themselves comfortable by using saws, with the saw they brought with
them, splitting and making by using a log and making a bench
high enough to stand under, and putting the legs on the logs and
beating with it there so that it could rest on the ground
and had a log on the legs, as they had no iron knuckles, the saw
during they would begin getting off a log in this way. It was
very slow and hard job to make a board in this way, but was
the only way to make boards. As time went on they would build
dams across the stream and put in water wheels by which to run
sawmills. The people very much liked the early part of the
winter, because they were able to get out from the snow
and attached to the logs of each wheel and to the tree. They had
logs which were attached to the water wheels which were placed in
beams made to slip up and down the saplings with wheels
again used to ease the logs so that they could be pulled up against
the same logs to cut boards. Very much ingenuity was exercised
to make dams to cut lumber all the winter, but they used oxen
beams to run these saws, and cut lumber for the settlers. These mills
were used by the town at first and then sold to other men to
operate and the price of lumber was according to the quantity of timber
and the quality of the wood. The best timber was white
and ash, finishing lumber was made of such as red and white
wood (cedar). In the spring steam engines were brought into
and power, especially in large mills. The first saw and power
mill in the place when the upstream got all the wood to be piled
and this was done by using a large machine. Then came
grinding machines made of iron and steel by which the
logs were broken, my father had one of these machines and I was after
had to work in the house with the water saws, they could not cut
it off down off beams as they had to use a saw to cut it off
and when a log was all sawed up, the logs were in place and

with little currents, I encircled and the peacock combed me
quite dry & began to ice with such good people with a
black suit & befitting a girl. It was really the suffering from
a great doctrine of immersion, to which the Baptists still adhere
though it were a losing advance instead of a consequence.
The first points had large gear of iron tumblers where
the tree had been hanging down by cyclones called windfalls and
had gleam up to black holes in the trees & jagged pieces of iron
the beam & wiggles and a hooded shrike like myself and he
being, we laid along many bushes & plants and lifted the person
revelled off in the woods. December the globe with me
got lost & did not know the way back to the wigwag. I remember
wandering through the woods aimlessly and calling out till an
old head and got back to the wigwag. It was my first experience
in getting lost in a forest. Thursday in the fall after the first
frost the men would form a company & take a wagon load of
our children out to the point to gather birch bark. There were
many old men loaded with nuts but too high to climb so
the men would get down a small tree with a trunk perpendicular
and cut the end & go on up, and then off the limb & put it on
their shoulder and run with against a tree hard. The jar would
of the impact would shake off the nuts and they would
come down in a shower. & the children would run in and fill
very baskets. It was good fun to us. I remember the day
Christy also when our boys would throw sticks up in the big
trees to knock down the nuts. We were faced out and it was
hard to pick our way through the limbs to get the precious nuts and
many times we had to zip down and tell out the peaches from our
backs. When I was a little boy they had just cut a road perhaps
through a thicket of chestnut brush. Gangs cut to the forest.
Christy of my times was 15-16 yrs.
In my days the old leaves were gradually being cut and by now with the
leaves fully laid open were out in the soft muddy soil of the woods. We had a
man in charge of the game of birch bark. He was a man of energy & used
to keep up with it banking, legs and used for the road. He was a little off at the
top of the road with a gun in a large family. I used to see him go
by the trees with loads of wood. He was only 15 years old & could hear him coming
a long way off by his peevishness. He used to make him in the road and when he
hears one he would stop his horse and the other and fall down. He would
get up and cover his legs and collect them with his whip. He was 10

and the same leg called off on to the slide when father would
take part of the first shot & flip it off, and so on with each boat
or boat, this left a long line of oar boards that had to be slipped
off with each one, one oar shaped like a hoe. One day I tried to see
this and to cut a deep cutting, recognizing that sand much liked mud
and he had me. I built the top of the stream rising some in December
and enough to know things. My father had a hammer to his hands, of a
stream where he had built a dam across it making a pond a mile long
and then he had an iron bar, a water wheel and a sawmill, which he used to run
for the trade. The only time that there was right enough to run the mill was
in the spring snow melt, when melting snow and then father had to run right
and day. To get all the logs in the log yard, packed up. It was a time of great
excitement when the dam was to be caught, to see that it did not
run away and out of season, then the flood gates had to be pulled
to let out more water, until the mill was running full speed. There was
the meaning water was filling. About this time father put in a
Lapple wheel turbine wheel to run a small sawmill to cut up
slabs and reject lumber into saw and pit wood and my half-brother
and I had this up to the dam when father was very young, we would
take heavy logs, a wood and deep the tips on the top of the front
morning saw, which would break the slip out of our hands and force
it up into the top of the mill. This was great fun to us but
father did not like it, fearing we would hurt ourselves. It was the
regular business of the place to cut the timber in these wood lots
and haul them to the mill to be found into lumber and wood. The winter
in this wintering and cold and the snow deep, and when the snow was
profound they used to cut out the very beams and cut and haul out
logs to the mill. We walked into the woods into oaks for hatches
and the same, jumping things they were up, this I would take
some of them to haul them out of the woods. My father was an expert
at this business, he had a fine beam of each way, that he had stowed both ways
and he used to pick himself on hauling ash logs, too heavy for some
of them. The main thing in hauling logs was to stack them
the right side up, the chain and climb up high a log and reach a
hook where I could slip the chain times around and in the middle
they slide down from the slot to the log so that upon the log
it would be a good way to the end, they would hitch the
chain to the end of the chain and at the end they would start
and pull the log down the slot and when once on it would pull it
and push down by chains. Then he would unhitch the chain and

hitch them to the sled. They knew what to do and all the more they
could jump forward and the ropes of the team would stretch & the
sled as the horses would jump. Then the team would back pulling
till the fog was cut when they could stop straight. Then the legs could
be hauled to the mill and called off by sled by hand spits or caribou
and called down the road to the nearest place. Their legs were the best of
the year this day. They would give their eyes down in meditation
till the sled was strong enough, then they would jump up & down and
about the edge of the sled. Then enough to get their legs into the sled. Such
a man would make chopping down trees easy. The game would ask the
deer thus away with legs like the wind and into lengths of wood
before beginning to haul to the mill. One of the men brought enough for a
small and did not block it perfectly so that it sailed down the hill and
the mill into the water and never was recovered. The water, I never got
hard to get a plank on that in the water and hindrance in it and possible
it all over the pond large pieces I could swim. When this leg went into the
head I heard to swim and my legs would go on it, but had become
paralyzed before so that when it was pulled fairly near it would not
budge. We would have concluded to stay in till it was called so hard
that it would call away. The men who were slipping so that when it called
over we would slip off and get crushed. The mill was used
that was set for the men follow in minutes and I heard to swim when I was
5 years old, and became quite expert at it. We boys used to break the ice
in parts of the pond into floating cakes and bawled each other to swim
the floating cakes. I was very small and swift and never got crushed
in coming to shore but the other boys did, and had to be picked up.
In the spring time, the pond was a great resort for bullfrogs. I used to go on a
black and saddle ice cakes and catch them on the head with a stick
and a fish-bird's beak and keep them in buckets. They were delicious but
another man would eat them. In the spring when the ice got soft in
the narrow water I would be the best to go off the ice. I remember
one winter ice got too soft to skate I took a gun and landed quail
on the old ice and did not bargain but it was too soft to hold up
and when things were warmer I sloshed sliding and I went down
to my shoulder, then I tried to climb when the ice cut it back
under me so I had to get back on land and was well soaked.
and cold so I had to go to the house to the house. I had to
change my clothes. These days were the times of the early religious
revival, after the times of Phineas and other great preachers. The Baptists
were particularly aggressive and used to come down to the creek below the

take it got the man refused to let him after the gate to being
in getting his gun and the gate kept to hold the gate shut.
after each hold of the gate and caught it after gun leave in
and the man again the falling bellows leaves to bright him.

I spent of three days a day of great religious caution.
There has always a slight uncertainty in religion in some church when
the people are fighting for their religion and feeling very intense.
The baptists and lebanonites were the worst, they were always ready
to quarrel with each other. The lebanonites were called themselves the lebanonites
because three days they had a regular convocation giving a great trying to
convert people the outcome of this was the weekly meetings and the
Bible Sunday services, a lot of various preachers using theatrical stunts to
attract people. This was the rise of the many other religious organizations of long
day. I remember being at many debates on religion especially when
Lough was between a universalist and the lebanonite preacher. The mini-
mum was two men of faith and even art. I once in Salt Lake had a
controversy with a baptist in religion and lebanonite and I was always
an opponent of Mormonism, and of unscripted religion and lebanonite.

Three days in Salt Lake there was a kind of constant contact between
the baptists and lebanonites in religion the gentle leader, some of the
mineral men they felt that to stand for the purity of the home but had
private opinion. The first speech I made was the purity of the home
was by Vanion the first I saw when children went to school to me
and were with him well. He was a very good fish his father's Dickson
and never could talk well tell myself with dignity. I remember one
day seeing him out to Salt Lake bathing exact with a peachtige.
The lebanonites knew the moral fiber of our leading men and laid a trap for
them by hiring a woman from Denver to enter them to her place. They had
spies in his place to keep tabs on them. By the gentle gate on by this trip
and alerted the lebanonites and part came to join. There are the days of the
anti-hygeanic peopling.

The death recently in the graves of Isaac Leaman
the oldest son of Isaac Leaman of Utah being such
reminisces of my early life in Utah. That I should recall.

Jones Autobiog.

The men of those times were very expert in using all kinds of devices for doing things.

Certain persons went around and cut wood for people, by horse-treadle power. The machine was mounted on wheels and drawn around by team. Above the running gear there was an apron about six feet wide and some ten feet long which revolved on a gear to which a fly wheel was fixed on the outside of the machine. From this fly wheel a belt ran to the saw gear, which in those days had another wheel on which the belt ran and which was geared to long tongue which had a six-foot straight saw fastened. This tongue could be lifted up to any angle, and was made so that when it had cut through a log it would rest on a crosspiece which would prevent it from cutting any deeper. When ready to saw a log would be rolled up on skids and fastened so that the proper length (one foot ^{and a half} or three feet long) was left beyond the saw. Then the saw would be dropped down on the log and the machine started up and ran until the block was cut off. Then the saw was lifted up and the machine stopped till another hitch along with the log made another cut ready. The blocks as cut off would be rolled away and piled up. When ready for fuel they had to be split into stove wood. It was quite an art to split wood rapidly. My father was an adept at it. He always kept his ax sharp. He would stand a block on end and check it across the middle by striking a series of blows light blow with the ax. Then a sharp and strong stroke in the middle and the block would fall apart, or if it did not then another sharp stroke with the ax held at an angle would make the block fly open. Then the block would be checked and split into slabs, and then the slabs would be stood on end and with one quick and sharp blow with the ax set at an angle and the sticks would fly off as fast as you could count, at each blow. The logs cut were generally rejects for lumber, and were of all kinds, but preferably hickory, ash, maple and beech. The power machine treadle was an apron revolving round and round and giving a flat surface, but was set at an angle slanting down on the end. On this treadle two horses were placed, being hitched to a bar at the top. As soon as the brake was let off the weight of

the horses would set the apron revolving and the horses had to step up to keep in place, and so they kept walking as long as the machine was in motion. Once in a while a horse would miss step or step by being too tired, and then the halter would break and the horse plunge back and out of the machine. break in the fender at the back. Later on circular saw were used to replace the crosscut saw. But those days they never had any kind of a steam engine for such work.

Whenever more than two-horse power was required they had to resort to a sweep machine which consisted of a big and flat iron wheel six or eight feet diameter lying flat and with cogs on the under side which meshed in a smaller cog wheel underneath and which was directly connected with a long tumbling rod 30 to 50 feet long and which was geared direct to threshing machines or to a fly wheel. The big and flat cogwheel generally had four to six long sweeps 15 feet long radiating out from the center of the wheel and securely fastened to it. On the ends of each sweep a team was hitched, and the halters were tied to the sweep in front. Then as the teams started up they would walk around and around furnishing the power. ^{sight to twelve} A ~~six to eight horse~~ sweep was a powerful machine. In running a sorghum mill, in the olden days a sweep or long beam was run from the top of the mill a distance of at least 15 feet to a circular track on which a horse was hitched to the end and driven around in a circle. The other end of the sweep was direct connected to a vertical roller which was geared to another of equal size. These rollers were of cast iron and with smooth surface and rolled together so that a cane pushed in would be caught and squeezed flat as it ran through, the juice falling into a trough which led to the boiling pan, and the bagasse falling on the ground behind. This was dried and used as fuel for the pan or fed to cattle. The pans were single to each mill and about ten feet long by three feet wide and ten inches deep, and with a sheet iron bottom made water tight. The milky sap was boiled down to a thick syrup and constantly skimmed till it reached the sugaring stage when it was dipped out into barrels. This was an all day's job to boil down a pan of juice.

In Ohio corn was shelled by hand, but in Iowa ~~where~~ the fields were

it was shelled by horse-power. In Ohio the corn was always cut for fodder and hauled into the barn and there shelled and husked by man power, and the stalks were fed to the stock. We always used to raise large numbers of pumpkins which were stored in cellars or the barns and cut up and fed to the stock. Potatoes were also put in underground cellars along with apples to keep them from freezing.

Nuts.

In Ohio it was the custom to gather at time of the first frost as many chestnuts and hickory nuts, and butternuts and walnuts as possible. There were many old chestnut trees those days that were full of fine nuts in the fall, and the shells opened at the time of the first frost. This was a harvest time for the squirrels and boys. We used to climb the trees or thread out the nuts by long poles, and then go over the ground and rake up the burrs and pick up the nuts. It was a gala time for the boys. The chestnut burrs were a mass of pricklers which were hard on our bare feet, but the hickory nuts were easier to gather. We used to spread the chestnuts out under our beds in a layer a few inches deep to dry to prevent mold. They were our best nuts. We used to gather some beechnuts but they were so small that we did not care for them. In many places the old chestnut trees had been cut down and young sprouts had come up around them and in my day had become trees twenty feet high, and which bore specially fine nuts. Hickory nuts were found mostly in the primitive woods on very old trees which were too big for us boys. So each fall the men would take a wagon and fill it with empty baskets and children and take up out into the woods, where they would cut a big sapling 30 or more feet long and a foot diameter and put it on their shoulders and run with it against some big tree with so hard as to shape the nuts out in a shower. Then the children would rush in and fill our baskets amid the shower of nuts on our heads, and we thought it great fun. Many barrels of nuts were gathered in this way. During the long winters we would have many parties all over the neighborhood where we would have husking bees, knitting bees, and any other kind of amusement we could devise, filling the evenings up with gay times, ~~sake~~ charades, kissing bees, ~~agones~~ o

of all kinds, and anything to amuse. We would go down in the cellars and bring up apples, cider, and nuts, and crack the latter on our mothers flat-irons, and wind up with a sleigh ride home. The amusements were all innocent ones, and dancing was taboo. I belonged to the younger set those days since I was only twelve years old when we moved away to Iowa.

In Iowa we had much the same kind of folks and the same kind of social gatherings, but we had little fruit, no chestnuts but many hickory nuts and some walnuts but no butternuts, and plenty of hazel nuts. Our winters were much more severe, but we always had good skating. Our distances to the various houses were much greater, and so our sleigh rides were longer.

harvesting.

When I was a very small boy they still had the old time customs of harvesting all the crops by hand. Hay was always cut by a scythe, and the hay was always timothy. Where a field was at all large, of a few acres or more, the men would team up from the neighborhood and half a dozen would start out in a line, each swinging a scythe. It was hot and hard work, and the men would often stop to rest or whet their scythes. The small boys were always expected to carry water or some kind of a drink to the men. In the middle of each half day the women would send out a lunch for the men by the boys. The hay would be allowed to lie in the swaths as laid down by the scythes for half a day to dry out, and if the hay was at all heavy it was spread by the boys with a fork. Then when the hay was dry it was raked up into windrows and then checked by the men, to stand till it could be run into the barn. If a windrow of hay got rained on it had to be all spread out again till dry. At the end of the haying the farmer would take a team and hay rack and a boy driver and two men to load, and each man would drive his fork into the top of a hay cock and lift the whole cock on his fork and deposit on the load. The man on the wagon would shift it to its proper place on the wagon. It was quite a trick to load a wagon so that the load would stay on till it reached the barn. Then the boy would drive to the next cock till the leader had all on that the wagon would haul. Then the team would be driven up to the barn and the hay passed out to the left and spread out in an even layer and

loft and spread out in an even layer while the small boy tramped it down.

When the grain harvest was on the same men would gather and cut it with cradles. Cradles were scythes with a framework attached so that the grain as cut would fall in an even layer on the frame and be then deposited by the cutter in a uniform layer or line on the ground with the heads all in the same line.. This was a particular job and took a strong man to handle the cradle. Then a man with a rake would follow and rake up such an amount of the grain as would make a fair bundle and would tie it with a band made out of grain stalks. Then the boys would come along and carry the bundles into a pile and stack them up with the heads up in a shock which was capped by a sheath spread out so as to ward off the rain if it rained. After two weeks, or such a length of time had elapsed for the grain to dry out the grain would be hauled to the yard and stacked, to remain till threshing time in the late fall. It was quite an art to load and stack grain so that it would stay on the load being hauled and that the center of the stack would always be higher than the outside so that when it rained the water would not run into the center of the stack and spoil it by mold. At threshing time The first thresher I ever saw was just a boxed in cylinder run by a belt from a sweep. This cylinder had teeth all over the outside and revolved between other teeth so that when grain stalks were fed into the front the teeth would catch the stalks and draw them through the series of teeth which would knock out all the grain in the heads and all would go through and pile up behind. Every few minutes a man would fork the mass back out of the way and another would shovel the grain back. When the threshing was done the straw would be forked away from the grain below and the grain thrown up in the air by a shovel so that the wind could blow off the chaff. Then the grain would be hauled into the barn and run through a hand fanning mill to clean it and get out other seeds such as weed seed. Later on there came in machines with screens and fanning attachments and an apron for carrying off the straw. It was the job of the boys to stand at the tail of the machine where all the straw and chaff and dirt came out in a constant blast and keep the straw away from the stacker. If this was not

done all the time the stacker would clog up the machine and stop it, which would cause a lot of profanity from the threshers, and the crew. It was no small job for a boy and he had to breathe all the dust till his lungs were clogged with dirt and ears and eyes full. Everyone hated it and shirked it as far as possible. But it had to be done. When the small boy got all he could stand he would flunk and some other set to work in his place. There were soft snaps on the job, as in most others. The job most liked by the boys was cutting bands. The band cutter stood next the man who fed the grain into the machine, and he slashed at each band as the bundle was put on the platform in front of him, and if his knife was sharp he usually cut it. He seldom had a chance to cut twice for the bundles went past him with a rush, and any delay caused the machine to speed up, and which blew grain over the stacker. But the active and alert boy held the job in spite of all the speed the feeder would put on, and there often was a race between them to see if either could stall the other. There were generally three men on the stack to handle the bundles with their forks, and one of these men put the bundles on the platform for the cutter. If there was wet grain caused by moulding this hindered the work and slowed up the machine, and caused profanity on the part of the feeder. At first the straw was stacked in the barns for bedding the stock in winter, but later on it was piled up for the cattle and hens to mull over in the winter. The hens regarded it as a great thing to get out on a straw stack and scratch for grain. Sometimes grain would be threshed from the shock by teams hauling it in loads to the threshing machine. Threshing time was a great time on the farm and the whole neighborhood teamed up to give plenty of help, and the farmers exchanged help at such times. This was also the hardest time of the year for the women to feed to the crowds. Harvesting and threshing were the main bugaboos for the women. Scattered around the country were many gristmills run by water power to which the farmer would carry his grain either on horseback or by wagon load and wait to have it ground. The mills were often inches deep in dust flour. Most of these mills had special fanning and screening machines for separating the wheat from the foul seeds it contained. The farmer got the bran and

and shorts and four seed back for chicken feed, and the grain was mostly ground on shares. Corn was also ground into cornmeal for the farmer.

I remember some farmers had machines for breaking the stalks of flax so as to facilitate the extraction of fiber. The flax was mostly pulled up by the roots in those days. The fleece wool in those days, just as it was cut from the sheep was taken to the woolen mill and there scoured and returned to the farmer in long and square strips rolled into big balls, and the wife was supposed to spin this on a spinning wheel into thread or yarn for knitting socks. I remember well the old spinning wheel that grandmother Bu^{on} Butron had standing in the sitting room, and which she used spin yarn. evenings. The wheel was about four feet diameter and made of very light hickory spokes and a thin rim in the middle of which was a groove in which ran the cord that turned the spindle. This wheel stood on a light tripod or frame standing on the floor. She would affix one end of a strip of wool to the spindle base and take hold of a spoke in the wheel and spin it rapidly, holding the wool strip parallel with the spindle till it was twisted enough up to her hand. Then she would hold the yarn at right angles to the spindle till it was wound up, then with a quick motion bring her hand in line with the spindle till the new strip was duly twisted, then back to be wound again, and so on till the ball of wool strip was used up. Then she would splice what was left in her hand to another strip and begin spinning again. To get much done quickly required deftness which was quickly acquired. I never saw any women weaving homespun, this had mostly passed out when I was born, though I saw them weaving rugs out of rags, which was a common occupation. The women did their own dress making, and knitting and crocheting. and even made the boys and ~~men's~~ men's clothes. Many men made their own boots, and had cobblers tools for repairs. But shoemakers were in vogue those days and could do better jobs. Shoemakers and blacksmiths were the main sources of information in those days and were always good story tellers. I well remember one old blacksmith Gillies, a great tobacco chewer, and a great hunter, a tall and gaunt old Yankee, for whom I used to turn his bellows while he was welding some iron for father.. Welding was done ^{these} years with charcoal, or stone coal. and a blacksmith was supposed to be

strongest man in the community.

One of the dominant characteristics of the Jones family as I knew it was extreme timidity. When I was a boy I was painfully timid, so much so that I was always afraid to be first in a party of three or more to go for fear someone would say something mean about me at my back. Women were my special fear. Their flashing eyes and turned up noses scared me stiff. I was so easily bluffed. This continued till my senior year in college when I was working in the harvest field biding wheat all day from sunup to sunset. I remember one day there were some girls visiting where I was working, and I being a boy had to wait till the second table and eat with the girls. I was so fussed that I could not eat for three meals. Then I got so starved that in desperation I said to myself I will eat, girls or no girls, and from that day to this women ceased to be a bugaboo to me.

I was however timid in other ways. I was distressed almost to death by having to face an audience. Cold chills would run up and down my back and my legs would give way under me till I got on the stage. Then I was at home. To this day I cannot sing in public, my voice goes down an octave, if I have to sing alone.

Story of Colorado Explorations
& botanizing 1878
Found in grey binder

I to hang there till my strength failed and I dropped to
certain death below like the foal I was, or what? No human
help was possible. I never had had any experience with Galt to trust
him to get me out of this fearful place. I did not think he
would come to help in such an emergency. But agonizing prayer
was all that was left. So I prayed. Then I judiciously looked
over the situation to see if there was any way out that I had
overlooked. I noticed that the cracks which I clung by were
frags that ^{the} ^{ice} ^{had} ^{extended} ^{toward} ^{the} ^{common} ^{wall}. It occurred to
me that it might happen, at least it could not ^{be} ^{heavy} ^{walls}. So I
kicked along, and at the wall found rocks putting out on which I
could get a leg, and I soon was at the foot fishing out my corn.
It was then dark and no sign of a light. So I decided to jump from
one boulder in the creek bed to the other on the way down instead
of trying to find my way under the dark trees. I progressed finely
till I lighted on a boulder top washed by the spray. It was black
and my feet went out. I fell into me and I landed hip deep in
the icy water, which quieted out of my shoes as I landed. But
there was nothing else to do and so I jumped and stifled along down.
At last I came to the end where the creek opened out on the Plains.
It was now pitch dark and the flickering light of Volcanado
Springs six miles away looked far off. So I stumbled along, falling
into ditches and coming up against wire fences and crawling
through till I reached the town of Panville, the river
rounding the town. There was no bridge. So I plunged through and
at last reached the house of my friend. I knocked in, a nicely looking
mess and slumped down in a chair. There was a young ^{lady} ^{teacher}
there (all the rest were away at prayer meeting) Miss
Ella Beecher, a grand daughter of Henry Ward Beecher. She
took one look at me and left the room. I did not know whether
she was pained at my appearance or not. Soon she opened the
door and in a next matter of fact way said "Supper is
ready." This was about 9 p. m. I was famished. Never before
did I feel like throwing my arms around a woman, and blessing her.
In all the 60 years since whenever I think of her I say
"God bless Ella Beecher." She was only a guest like me,
but she took in the situation at a glance and did the wise thing.

and earned my everlasting gratitude.

The question that was confronting me was how to go through the wilds and collect specimens. I had only \$100. I decided to hire a pack horse and post it. So I started toward Laramie City reaching a place on which calling deer, blackbills & goshawks were packed. It was too heavy a load for the horse and a very rude way of going I found. So I returned to the Springs and wrote a friend who had loaned me \$100 that there was nothing for me to do but get another \$100 from him or quit work. He sent the money and with it I bought a little bunch of mule and a single horse of my own, and set out for Denver, 125 miles north. My mare was skittish and whenever anything went wrong she would turn away, and then herself loose. But she would bowl fairly well. So I drove to the Springs and camped. It surely was lonely going and camping in the wild where I could find neither camp or water for the mare. On the divide I grazed up a jack rabbit that looked to me almost as big as an antelope, and I shot it and ate it. After a few days I reached Denver. The pastor of our church at Gettysburg had given me a letter of introduction to a friend in Denver. I called on him, and had a fine visit with him. He suggested going to a circus store in Ely Co. H. Smith (?). I am not sure of the name, to see his place. We went up by a lady (whom I guess was Miss Eastwood or was the real head of it). I told him I thought I could impersonate them if he would give me an order, so he ordered 100 at \$40. Well I put them up and he was so pleased with them that he kept ordering more all summer, and this money paid all my expenses all summer. I camped along the Platte river near the smelter for a week. Then having got the flag there I drove to Morrison and to Golden and collected. Then up the Platte canon. Then down to Georgetown by way of Idaho Falls and Golden City where I stayed a month and collected all over even to the top of Agouty Pass. Then I drove to timberline on Grand Peak & camped a week and collected the entire flora of that magnificent region in the alpine meadows. Then I ascended the peak above our camp. It was the most glorious trip I have had taken up to 14,321 feet alt. I could see far out on the Plains beyond Denver, and far to the west south I thought were stupendous ranges of mts till

they disappeared in the pine. It was the most inspiring
night I ever enjoyed. This trip left me with a sick headache
all the time I was at timber line. I did not know the cause
then but I now know it was the altitude. This is the only
effect I have noted on myself due to elevation. My heart
action and breathing were very much affected. I took our traps to
Denver I pack and then fall was dangerous. I had made a fire
collection. So I decided to turn over on to the headwaters
below Breckenridge by way of Regent's Pass. Going down the
pass there are several miles where the roadbed is blasted out
of the side of a perpendicular cliff over 1000 deep. and was a very
narrow single wagon track. On the west of this steep rocky
breaching gap was I let the buggy on to the main. Ordinarily
this would have produced a widening of the resulting in both
and buggy going over the edge to destruction. It was a
terrible moment. I grabbed a rope and swung out. I spoke to the
man I was just stood there and trembled. I walked my way to his
head and aimed to the other side and fastened the breeching. I
had no braces worth anything. Then I heaved easier. That
night I camped below the foot of the granite in the timber. I have
there had been an Indian outbreak in Middle Park not 70 miles
away in the next canyon in which they had killed our white men.
So I felt a little nervous all down in the woods. I got my old
knife by my side determined to get at least one Indian if they attacked
me. A little after midnight I heard voices approaching. So I got
up on my knees with the knife ready, but the voices passed on. Then I slept
fitfully. The next day I drove down the the head where a hunting
party encounters me, just returning from a big game hunt. It was a
rich Philadelphian family with ample camp outfit. They invited me
to camp with them. It was bitterly cold and frosty. But it tasted
good to share their hot biscuit venison and coffee. The next
day we drove through Breckenridge where we saw the road for
ferrous tannin, then over Lincoln Pass down timber line &
down to Tracy's in the South Park. Then on through the
pass in a moosemen to Weston's Pass camping just below
timber line where a fierce cold wind blew down the canon.
The snow filling big flakes and plastered my face all over
till I was freezing like a bag. I got a little warmed up at

the camp but it was bitterly cold & some gray than
solid that night. I piled my things all along the sides
of the buggy & over me and slept. The next day we
crossed over the pass and down to Twin lakes where we
camped and camped all night. The next morning I left them
fishing there and drove down the Arkansas valley to
Cotton City, then to Pueblo and Colorado Springs. Where I
sold my outfit and struck out for Lone on the train.
At Lone I had what it was it was a wonderful trip, rather by a
load of a young man who had good insight of almost
unimpaired astuteness. I got 11000 species of plants and
5000 specimens, and was the largest collector ever made
in Colorado. This and later trips have brought me self reliance
and made me glory in doing the impossible, for none believe
that you can do anything, you want to do if the negro is
severe enough. So now I decide what I want to do and then
proceed to being it about.

Afternoon, winter recess spent in mowing and labeling
my plants, and putting them up into 20 sets. During this winter
when I was using my eyes too severely I had told my phone a
microscope, my eyesight got so bad that it glowed in me that
there must be something logically wrong with my eyes. I had had
examined and said I had eight years, and had suffered terribly with
my eyes. So I began to suspect that I was near sighted. So some
day I went to our teacher Mr. King and told him of it. So he
brought out an instrument and had me look through it while he
adjusted the focus. When it was right he reached into his case
and pulled out a pair of glasses and said "Try these. I think they will
do." So I slipped them on and turned to look out of the window. A
boy was walking along on the other side of the street & had on
red topped boots with his pants tucked into the top. I could see
him as clearly as if he had been four feet away, and every detail
of his person was perfectly plain. Without the glasses I could
not have told him from a cow. Jesus in talking to Nicodemus
said "You must be born again." I was born again. The
world no longer looked dim, and fuzzy and forbidding. Every
thing was bright and clear. even the stars were no longer a blur
of light but sharp points. I took the glasses and went home
singing. There was a revolution in my life.

The fact that I had gone to the great frontiers and
beamed the wild animals and wild Indians, and wild
boozefighters of the saloons, and made a great collection
of 1100 sp. & 5000 specimens made me famous in the
college. I was invited to teach the senior class in botany
at the college, and was invited to become acting prof. of
botany at Colorado College at Colorado Springs for the year
of 1879.

In due time I was back at the Springs teaching botany
in the forenoon and carrying on my work in the afternoon
of collecting the flora.

During this week I heard among my pupils the sister of Genl.
Mr. J. Palmer Pres. of the Rio Grande R.R. He was a very wealthy man
and the most wonderful man in business I ever knew. He had a
palatial residence in Glen Echo, 20 m. from the Springs. He is
out every day in his buggy to his office at the Springs.

One Saturday I had walked out to the Glen & botanized & was
returning. I had never met him. But he passed by me on the
road, and it so happened that he displaced his overcoat on
the seat so that the bottles in our packet fell out on the road,
but he did not see it. In due time I came along & saw
them & stopped to pick them up and opened it and read it. It was
the will of Dr. Bell his associate, one of the three big men
of the company. It seemed so important to me that I put it in
my pocket. The next day I told his sister of it and asked her
till he hears that I lost it. So he sent word to deliver it to
her. ~~Some~~ years afterwards I received a telegram from him

to take charge of an exploring expedition to report on the pos-
sibility of building a R.R. from Salt Lake City to Tucson
Ariz. He said I could draw on the treasures of the R.R. of Salt
Lake. Mr. Patton for funds. At the time I was sick and
with the grippe. I got right out of bed, dressed and took train for
Tucson. The acquaintance that began in this casual way con-
tinued 30 years till his death. I sent answers and large amounts and
reported on my expedition on which he wanted information.

My most famous report was an apple tree, in 1892 when I predicted
that it would be the greatest mining event in the U.S. This
report was made in the face of the opposition of some of the best
expert in the country. When I have made a problem I will
not hedge to suit the opinion of anybody for I fear neither man nor the Devil.

In this season I have been a court report for 40 years.
Perhaps before leaving the subject I should write about my
equipment for work in 1878. It was perfectly ridiculous, but my own
should do it to what I did with the means at my disposal. A friend
My Abenishian of Simill offered to loan me \$100 to enable me
to begin work. Out of this I had to pay my RR. fare to Colorado. My
equipment consisted of a putchy knife, to dig up plants, and a
lot of blown paper sheets, about 200 of them, and a lot of tissue
paper, with to put specimens in. This tissue paper was a perfect
nonsense, and I had to fall back on old newspapers of which
there were gloves plants that people gave away to get rid of them.
I had 2 ad. quills to sleep in. I had a bape oven and shavings
kettle, and two plates, a knife & fork & spoon, and at first a little
sheet version on an paper, and quills. My first dinner of tea.
bread, butter, and could afford it, and did. I never ate any
vegetables but potatoes and few of them. At first I wrapped my & each
piece, and packed my stuff on the table. I walked. I had my
first day I saw that this would not do. So I borrowed another \$100 from
my friend & bought a blancher, made, harness, and a pair of boots.
Then this outfit I have all on. I had a horse, but I sold it. I with
the man was rather spiteful, and when he got scared she would
kick away and kick herself loose from the leg, so my harness
was never for riding up with, but riding down. But the man was gentle
with me most of the time, and she had no horse sense.

My friend gave me a letter of introduction to a man in Denver
who went down town with me and introduced me to a cured
cancer, whom we will call Geo. H. Smith. This man had some
little bottles of pressed flowers put up by a lady, and he sold
them for a dollar each, giving the lady 50 cts. each. When I
saw them I told him I could make better ones at the same
price. So he gave me an order for 100 of them. I when
they were gone repeated the work several times so that
I supported myself all this season on the money from the
bottles. Otherwise I would have had to quit work to get
money to live on.

I remember well driving from Colorado Spring to the Divide, a
high swell on the Plains separating the Arkansas drainage from that
of the Platte. It is a very long and fine out from the Rockies onto the
Plains, and is covered with a most beautiful park of yellow pine
Cherichosa forming the grassland. It was here that I got my first view
of a jackalabout, which to me looked like a small deer. I got out
my old mule loadlight & shot it. Then had several good meals
out of the meat.

I camped under the cottonwood trees along the Platte near the mill.
For some days. Then I drove to Madison for a day and to Boulder
where I balanced. I also took a 12. trip to some station in Platte
Season for a day. It was in early February when I got the
myself before September which looks like a bale.
Then I drove to Livingston by way of Rocky Springs. Going through
the old sugar lignum of the Texas Peak or but stage. I spent a
month there and thoroughly explored all the mountains going
about even to Argentina Pass and back. Then when my work was

Now I leave my beads near and climb up the terrific grade to head's Peak where I camped at timber line several days and climbed to the top, descending along the way. The ascent of head's Peak was a star day in my life. I had never been on a great mountain in my life, and when after many stops to get breath I finally stood on that huge ledge with one foot on the plateau and the other foot on the Pacific slope and took in that superb panorama it made a perpetual impression on my mind. No other view in America quite equals that. Then I returned and drove over Reservoir Pass a little way from the Peak. I soon began to feel that I was in the wilderness and quit out of the traces of a civilized world. The road down with only a footpath a foot wide following the finger tracks. At the worst places on this grade my breathing grew very hard but the baggy on the mare, much ordinary conditions we would have kicked everything to pieces, but this time the just stood and trembled. The least explosion on the part would have resulted in the destruction of everything on her. So I spoke to her quietly and climbed out, took hold of a wheel and held back the load, then looked at that and slowly worked my way to the front and toward the other side. At the broken fall and mended it. From that time on the mare never kicked, muddled, loose and my respect for her increased. I was soon down off the grade and into the deep black forest. And night came on. I was afraid to build a fire and get suffer for fear of the Indians. So I shut up my things and crawled into bed and tried hard to sleep. About midnight I heard voices, and concluded that the men had come. So I got my old gun in my hand and stood on my knees ready for the next emergency. I knew that I was sure of accounting for one Indian. But the voices passed on. So I decided they were merely going home. I was before and getting very cold at night, and everything was frozen. The next day I packed the goods and turned up toward Breckenridge through that beautiful park-like country. A cavalcade came up rapidly behind me. The men were armed. There were four wagons and a covered wagon with a cabin in it. They seemed to be a Philadelphia wealthy family out hunting, from a hunting on fishing trip in Middle Park, with a man-eater and a frontier guide. It was a jolly party, and I tagged along behind and made camp near them. They cut down a tree made a log about 8 ft. long out of it and rolled them close together and built along fire between them they could draw supply, fire, meat and make coffee all at once. Everything was burning brightly and they were from killing up. The cook came out to me with a plate of venison & hot biscuit. My, but it tasted good. The next morning we were off early. At Breckenridge we visited the top of the famous tourist's life line that my boys loved so and as I first saw it. It was a feast to see the real set exhibited in that wonderful collection of nature's game. Then we strolled out over Lincoln Pass and down toward Fairplay where we came into a pine plantation where the big flocks gathered themselves in my face and chilled me to the bone. I had stop in the old town and his down to Weston's Pass & camped for the night just below timberline. A gale was blowing down the canon and freeze everything hard that night. I could not find any place to get warm and expected to spend a bad night. So I piled my things over and over my bed, and shut up every crack while the wind could come in, and kept like a log. Early they were off again over the frozen ground and over the pass and down in the behemoth to Twin Lakes where I left them fishing. As we went to the shore of the lake we stood up a

big elm. I then drove on down the Arkansas alone. It was
a lonely trip to Canon City and Pueblo and Colorado Springs.
I sold my outfit, packed up and took the train for Denver,
returning with more money than had started out in the spring.
I had an enormous collection of 5000 specimens. Then came
the long and hard task of labeling and naming them all and
distributing the sets before the next April when I expected to go
again to Colorado. I worked day and night, in fact I had
that my eyes gave out on me and I became convinced there was
something fundamentally wrong with them. I finally came to
the conclusion I was near sighted. So I went to my jeweler Mr.
Ring and stated my case. He got out a machine he had and
made me look through it. He adjusted the vision till I could see
perfectly, and then reached into his pocket and pulled out a
pair of glasses for me to try, saying "I think these will help you". I
put them on and turned to the window and looked across the street.
There was a boy walking on the sidewalk who had his pants tucked
in his boots and showed the red leather lifts on the tops. Ordinarily
I could not have distinguished him from a cow, but I saw
every part of him as distinctly as if he were at my side. Wherever I
looked everything had sharp definition and no longer fuzzy look I was
accustomed to. The hats looked like bright points instead of a blur
as before. It was a wonderful revelation, the being seen again.
The world no longer looked dreary and cold.

Having done such a wonderful piece of work, such as men
headed off before, beheading wild animals and Indians in the far
West (initially ludicrous to me now) gave me a great reputation
in my home town and the college authorities invited me to take
the senior botany class, and I was invited by the Pres. of Colorado
College to take the vacant chair of Nat. Sci. to fill out the term
of Prof. Lund. Later on. So my time was full. When spring came I
went to Colorado Springs, taking up the work there, and botanizing
in the afternoon. It was then that the incident of Gen. Palmer given
above occurred, and altered the whole course of my life. Just at the close
of my work at the college we made up a party of five men and at 4 p.m.
one day we set out on burro to ascend Pike's peak 14200 ft. alt. I was
the shortest man in the bunch and I was given the biggest burro.
The tallest man (6 ft.) was given the smallest burro, so well that
all he needed was to let his feet down and the burro could walk
out from under. This was also an advantage for going up a down
steep pitch he could tuck his feet together under the burro and
stick on. Three sweet times when he was holding on to the burro's ears
or tail to keep on. We rode all night till 11 p.m. when we got
to timberline and stopped on horse and built a fire to get warm
for it was very cold. Then on we went. At about 12000 ft. the
burros absolutely refused to go further. So we tied them to
stones and climbed on, getting to the top just as the sun
came up. At first all we could see was a great ball of bare on the

hazards in a claudless sky, and below shutting out everything to our view, feet was a billowy sea of cloud. I actually became dizzy wondering what we were standing on. Then the warmth of the sun made the billows ascend and lift and reveal glimpses of the great Plains. Then the clouds seemed to catch fire and blaze in long tongues as they split and revealed the great peaks south and west of us, and steamed up then in flame without consuming anything. It was a marvelous sight I can never forget. Then we took the back track, better, and then the front with great hills again began. It was a continual circus.

On the 17th of July I left for Salt Lake City, getting there the 18th May my life. At that time a majority of the population was gentle (non-Mormon) and the contest with the Mormon Church our control of the city was gentle (non-Mormon) and the general sympathy to this paltry sect was coming to a head. The gentiles were all banded together in a compact anti-Mormon community and every new comer was welcomed as one of the band. So I at once got introduced to the leaders Wm. & Col. John I. Lynch, S. L. T. Harrison, the Salt Lake Tribune board, and others. The 1st Cong. Church contained most of these men. Through it I got into this church and became a church clerk. About this time there was organized a special commission in this denomination called the New West Educational Commission whose object was to educate the Mormons out of their peculiar beliefs. This had some thirty stations scattered over Utah, manned by a most distinguished band of highly educated young men and a few men who did wonderful work in regenerating Mormons, but the converts from Mormonism were few far & a Mormon ever denied on his knees he eagerly took up any religion. And if he did he never amounted to anything. It was a common saying "Once a Mormon always a good for nothing." The best word is a false place of the more objectionable men.

The year of 1879, the best of it was spent in exploring the great Wasatch range at Alta where I got 100 species of plants in a months time, a record kept. It is as rich in different kinds of plants and in the luxuriance of the flora as any place in America. That fall I returned to town and completed my second series of sets of western plants and disposed of them. During my sojourn at Grinnell I had become interested in a young lady, and in influencing me more quickly and to have her come with me to Salt Lake City. Our first day was at Grinnell for our Sunday, since I never traveled on Sunday. We went to church, and the minister, a great society man, spouted us and invited us to ride with him in the afternoon to Fort Russell. So he called for us with a spanking good team and we drove out in great style to the fort and were introduced to Genl. Wallcut. The next day we dined at the fort and then to my wife getting married was a great event which should be celebrated in suitable style. This consisted in my getting a tailor made beaded suit, a stove pipe hat and white kid gloves. To all of these I was entirely unaccustomed and felt very uncomfortable in them, but I wanted to please. But I never wore the gloves again. They were too too for me. But the delightful stoupish hat I had to wear. I'd coming down Echo canon we passed an emigrant train which consisted of double decked freight cars fitted with berths, and filled with a general assortment of humanity. I was out on the platform to get what I could, and a man in one of the cars yelled "Hello hat where are you going with that man?" I was pleased to hear to hear the hat in the first place, but the man's yell was more than I could bear. It was a fact of my life which did not set well. It was not long after that before I absolutely began to be humiliated any more in wearing it. My respect for my object seemed to go to make me seem taller for she was half an inch taller than I. I have always regarded it with utter contempt, and any social activities

as counterfeit, duplicable, the cloths being any special antipathy. When we reached Salt Lake we took a furnished room in a Mormon family. We could get together an outfit of hats in 350 miles south of St. George. I soon bought a team of hats (mules) and a covered spring buggy. We packed our food, bedding and equipment in the back and rode on the floor seat. It was Sunday and a part of we were the ground. At noon we stopped to eat our first meal by the side of the road, on a sagebrush flat in my little shelter. My wife made baking powder biscuits, and put them in the oven to cook. Soon a black mule appeared from the oven and our biscuits were burned black. So I jerked my wife about them and told her I would watch the next batch. Our team of mules seemed unable to haul us through the snow. So I returned to the city the next day and had them pay, hauled, leaving my wife with the family of a son of John Taylor, the President of the Mormon Church. The next day we began the terrible trip. Mornings the roads were a mass of ice, at noon it was slush and by night mud. It was not far to Salt Lake. Saturday night we reached Ogden, Utah, a typical old Mormon town of polygamists. We stopped at the home of a leading man at the home of the Mormon Bishop, the head man of the town. This was a high a-story, three-story with 8 rooms in the front and tapers off at the back to the middle of the block in rooms to accommodate his numerous family. There was a main sitting room in front and off it was 2 rooms on each side. One for each of his 8 wives, the upper story being a duplicate of the lower. The wives were all dressed in homespun, the wife of the head of the house, half of children of all ages from babies in arms to young ladies in the house sitting and doing work all the time. It was incredible that there should be contention among them, and when anyone set up a word of the matter looked up from their work to see who child and making the noise, and as soon as this was found out the two women would grab their child and flee to their room and shut the door and the talk would end. No other woman could speak a word. After a while they would return to the room and everything would be as before as a summer vacation. They were not quarrelsome. One woman and girl had her sheep with her. One had the sheep, one the clothes making one the cooking, on the lower level, the everything was systematic to the limit. In the summer time these stock women also helped with the crops and the old man had on the fence and can run his business. He was a typical Brigham Young kind of a man, very big and stocky with a thick bull neck, and talked with a brogue. He was very social, and enjoyed telling about the legends of Mormonism. When I made a sign each wife took her children to court to church alone. The women also went alone. The place was always addressed by someone from the cloud of men who was a good teacher. The Mormons had no preachers, they are all supposed to be pious to talk to anyone and to even if they say nothing. They talk about anything from crops and stock to civilization and it is generally the same old stuff every Sunday in the year. They "testify" of the truth of the Mormon gospel as a personal revelation to them. This means that when they say they mean that at some time in their early life they had a "vision" that is they got in a mystical state and dreamed that God appeared to them. I revealed the death of Mormonism and all the other revelations to men since humanity began. This is the basis for the continuance of this cult, and so long as people can be found to believe in the religion will continue. The philosophy of the Bible is used to strengthen the assumption of the truth of this fact. At meal time the table was set in the main room going across one side. The food was piled up in plates, dishes along the table. There were coffee and tea as the Mormons

are opposed to bath. The table was probably 20 feet long, at the head sat the bishop, on his right sat his eldest son and so on down in the order of age. There were not enough seats to accommodate all so that when one of the adults was finished a younger 1 sat in his place and ate out of the same plate. I felt some plates had been used 3 times.

On the bishop's left sat his eldest wife, an old, wrinkled and worn woman, next her the second wife and so on down to the last the 5th who was a young woman of 22 years. When a wife finished the eldest daughter took her place, and so on to the end. At the start the bishop asked a blessing on the food, then all sat down to eat. This was a typical Mormon meal. At that time the bishop had 40 children and more or less coming. Years after words when Kate T. was a great woman celebrity was in Salt Lake she wanted to see this typical family, so we went out to call on the bishop. But all was changed. He invited us to dine with him but a special table was set for us there and we saw nothing of the old family life. He asked me if this wife had with me was the same as I had when I was there before. I did not introduce her to him for evident reasons, for if he had known that she was a magazine writer, we would have had a cold reception. My wife was only much interested to talk with the women to discuss the real facts about Mormonism. I never lost an opportunity to ask questions. The well known universal rule was that it was just the thing and everything to be done. This was the third story, the women told tonight. I got off to all gentle women. It was a corner a kind of subterranean hallway, dimly lit almost none of the real truth about Mormonism from Mormons. It all hung on the Mormon God. I had God made man in his image, and so God must be flesh & blood like men and with all his passions and wants.

There is a polygamist, having children still. That Joseph Smith and all the subsequent presidents of the Mormon church are prophet, priests and regulators of God and therefore must be obeyed in all things. The church has every member cold catalogued and knows just where he stands in the church. To pay a 10 of all one's means to the Lord is a sacred principle. All other things are given but that not. Polygamy is still believed in as one of God's truths, though not practiced now because of Government law. There has been a great improvement in civilization in Utah in the past 50 years. The old farmers with 2 or 3 acres own for each wife, we seldom see any more. The Mormon girls prefer gentle men when they can get them. Everything new is up to date, even the schools are good. The Mormon authorities in deep to hold this young people and they for all athletic equipment and wants. They have weekly dances, etc. Everything is organized and about every good Mormon has some kind of an office in the church.

~~Has College cheated me by Edsel Newton LA. Vines.~~

To get an education was part of mother's religion, so of course I went to college. ^{nothing from left or right of herding myself in the subject matter.} Trinnell was a small college with half a dozen devoted professors mostly ministers. Some of them were great men, but none of them looked upon science as anything but an educational freak. Education meant proficiency in literature, language & religion. I became proficient in Latin & Greek, ^{studied Sanskrit, etc.} knew some French & German & after graduation was elected tutor in Latin. All this time my recreation was with the wild flowers. My mother was always spurring me on to know more of them. I never thought of any work to study flowers; it was just a part of my life. There was no one else at college who knew as much about them. ^{→ A woman I knew in Latin showed me that I did not love}

On Becoming a Botanist.

1. Wonder how the great ones became botanists.
 2. My own case!
- Mother - ideal, encouragement
 Father - nature
 College -
 Botany in use - Mrs. Lincoln
 Corresponding
 Austrian's request for seeds.

1/18

(2) To see all the marvels of plant
 life were evidences of the
 of the Creator for his creatures!
 ness was our obligation to
 life was a magnificent app
 as well as obligation to utilize
 powers, mental & physical
 benefit of the world. Prof.
~~I gained the conviction that~~
~~efforts should be devoted to~~
~~knowledge or life of botany~~

February 1923

In talking with Mabel it has been brought to me that I should put in writing what I know about my family and my life while it can be done.

The Jones Genealogy gives facts that I need not repeat.

My grandfather Lynds Jones migrated from Barkhamstead Conn. and settled at Jefferson Ashtabula Co. Ohio. He married Phoebe Waters and they first lived at Wayne in the same county, where father was born. A sister of Phoebe married Joshua R Giddings who had four sons and one daughter. The sons were Grotius, Addison, Comfort (the oldest), and Levi. The first named was the youngest and died early. Addison and Comfort lived at Jefferson and had families. Levi moved early to Marshalltown Iowa (30 miles from Grinnell) and his family grew up as father's did, and we visited often.

My grandfather and Giddings were lifelong associates, both lawyers, and very public spirited, and the leading men in their region. Giddings at grandfather's suggestion ran for congress and was ^{elected} representative and a great antislavery man. Grandfather chose the judgeship of the court of Common Pleas and occupied that position the rest of his life. Those were the days of the great anti-slavery agitation which swept the country, and these men were pillars in the movement which resulted in the Rebellion. Father was elected sheriff and was ^{also} captain of the militia. Jefferson became an underground station for slaves who escaped from the south and were on their way to Canada where they could be free. Father was one of the active men assisting the slaves. How long he was sheriff I do not know. He bought the saw mill 1 1/2 mile west of Jefferson about the time I was born and ran it during the spring runoff till 1866 when he sold out to uncle Dawles and moved to Grinnell. It was all woods around Jefferson then and he used to cut and haul saw logs in the winter, ash, maple, and oak mostly and cut them up into lumber when the snow thawed in the spring. I remember that a negro was arrested and held at Cleveland for deportation south and father and a band of determined men armed themselves with hickory clubs and went to Cleveland to release him. Feeling ran very high. The outbreak of the Rebellion

Rebellion was simply the culmination of a long and bitter fight on slavery and it was freely predicted by my grandfather Burton long before.

Father took a deep interest in the formation and preservation of the Congregational church there. He was a young man then. It seems that there were factions in it particularly among the singers. The older singers resenting the advent of younger ones. One day they struck, intending to leave the church without a choir. Father promptly mobilized the young folks and formed a choir who filled the place of the others. This seemed to have led him to a special study of music and he went on the long journey by stage to New York City and studied under the famous men Bradbury, and Mason if I remember rightly. He had a magnificent baritone voice and could sing any part down to 3 notes below lower C. He also could play the organ, and in the early days, played his own accompaniment. The song of all that I remember best was "We parted in Silence". Then there was "John Anderson My Joe", "XXXX" "When You and I were Young Maggie" Swanee River. The first father used to sing to me when I was a baby, to put me to sleep.

I do not pretend to keep things in chronological order, but put them down as near to it as my memory goes. Later I may revise it but the main thing now is to get the facts down.

Father was a magnificent man physically, about 5 ft. 10 inches high, splendidly muscled in the arms. He was so strong that once a 200 lb. man tried to cheat him out of some property belonging to him which the man had on his place. So father went there to get it, and the man folded his arms around the gate and gate-post to hold the gate shut, hugging them tight. Father took hold of the gate and by sheer force pulled the gate away from him, and went in and took the property, and the man dared not resist. Father was a peaceable man, but resistless when aroused. He was a natural mechanic, could make anything in wood. He used to make bob sleds, ax handles. The old mill was built on the corner of the dam which crossed the creek at the house. There was a square penstock which opened on an overshot wheel to which was attached a handle on one end which was fastened to the lower end of a long shaft which connected with the end of a square frame about

6 ft. long which slid in guides up and down. To the middle of this frame the muley saw was bolted which was 6ft. long by 1 1/2 foot wide. Against this the logs were pushed on a carriage run by gearing, and the saw working up and down ^{sawed} off the slabs and boards, being shifted along the desired distance by a ratchet arrangement. At every cut the carriage was reversed and driven back to the far end of the log when the log was reset and the new cut begun. The sawyer had to stand ready to shift and return the carriage at every cut, and while the high water was on had to work night and day. At the back end of the log there was left about four inches uncut, so that when all the cuts had been made the parts still held together. Then the dogs were released and the log turned over onto the skids, and a new one set on the carriage. While the cuts were being made the sawyer would go over to the cut log and take hold of the outside cut (the slab) and flip it up so that it would split the 4-inch uncut strip on the end, then he would slide it down on to the slab pile. Then he would flip off each board in the same way and lay them on the skids. Then he would take an adz which was made like a pick with the flat part sharpened on the upper side and go to the rough end and carefully strip off the rough edge leaving the surface of the board smooth to the end. He would usually stand straddle of the board when he cut off the strip. One day I tried to imitate father but instead of hitting the wood the blade came through and cut a frightful slit in my shin, the scar of which I still have. This was before I was eight years old. The water backed up behind the dam was about a mile long and 15 to 20 feet deep at the dam and made an admirable swimming place in summer and skating in winter. When I was only a few years old we boys used to go in and paddle around, but I did not learn to swim till one of the older boys threw me in over my head where I could not touch bottom, then I instinctively pawed the water like a dog to keep from drowning, and thus I learned to swim. Long before I could swim I used to paddle on a ^{plank or} log all over the pond. When I was eight years old I learned to skate. I was very muscular and quick and we used to banter each other to skate over dangerous

places, and disconnected blocks of ice, till some one got in over his head and had to be fished out and sent home or over to a fire to dry out. Many a time I got ducked in this way and climbed out sopping wet and continued to skate till my clothes froze stiff and then the ice cracked off. I used to skate from 8 a.m. to midnight without taking off my skates, in vacation time. Once I remember a young woman joined the Baptist church and was baptized in the icy water in the winter time. There was fine fishing, bass, suckers, pike. At certain times we used to go spearing on the ripples at night. There were no end of frogs along the shores and some turtles and snakes. We used to go along the shores and sneak up on the frogs and crack them over the back with a stick and cut off the hind legs and skin them and fry them in butter. Once we got a four quart bucket full of them and got mother to let us have an old tin plate to fry them in. They were good but mother never would eat them. The banks of the pond were lined with maples, birches, and chestnut trees. Before the snow ^{was} off I used to make spiles out of ~~elm~~ stems, bore a hole or two in a maple tree and drive in the spiles and set a bucket under and collect the sap and boil it down to maple sugar. Once when I was about 12 years old I asked my first girl to go to a party with me, Ruth Larrabee. I made a lot of fine maple cakes to give to her that night. I was pretty badly fussed, but was invited in while the girl got ready. Her young ^{brother} promptly climbed on my lap and began to ask a lot of questions and to explore around. Then he got his hand in the pocket holding the cakes and looked up in my face with a knowing look and said "I know who you got them for". I sweat blood, and I suspected the mother grinned. But the girl got the cakes. We used to go barefoot all summer. In the fall when the first frost had opened the chestnut burrs we used to pick our way through the layer of burrs on the ground trying to get the nuts without having our feet full of burrs. Between the boys and squirrels there were few nuts left. Father used to take us all in the wagon out into the woods in the fall to gather hickory nuts from the big trees. They men would cut a long log and square the end. Then all of them would get it on their shoulders and run with it against a big tree. The shock would bring down a shower of nuts which we ~~children~~ would gather. Father

also used to take us out in berry time into the windfalls, places where a cyclone had felled the trees, and was all grown up to raspberries and blackberries, and we would gather pailfuls of the berries. Then in the early spring while the snow ^{was} going off the woods were carpeted with wintergreens and squawberries (*Ericaceae*) which we used to eat, little red things. Then when the ground was covered with flowers in the spring we used to enjoy the groundhuts (*Erigenia*) after digging them up. This was the time when the Dutchman's breeches were in bloom, and the blue bells and beths (*Trillium*), and many others. Every now and then the school teacher would take us all out for a walk in the woods, and we would gather arms full of flowers for the girls. One girl particularly Julia Loomis was the belle. She got so much attention that it spoiled her and she went to the bad, in later years. In the winter time we all went to school along the plank road a mile to the north school (because father lived just on the edge of town and did not like the bad boys of the town school). The snow often drifted as high as the fences and we boys would burrow in the banks and make rooms in recess time where it was warm and still. Then they used to have all sorts of parties, about one a week all winter. Then there were husking bees when all of us would gather in the big barns and husk out all the corn and the girls would provide doughnuts and cider and nuts, and we would wind up with games of all sorts, but they always had forfeits of some kind and the boys had to go through some kind of kissing performance which both parties seemed to enjoy except some of the older girls who had to kiss some unshaved boy. It was a joy those days just to breathe. Then we used to have no end of apples, every cellar was full of the. Then there were black walnuts, and butternuts, and black nuts too. We used to have taffy pulls, and sugaring off bees when the maple sap was running. In the spring it was very muddy and the roads were hard to travel. This was why the citizens built a plank road 12 miles long from Jefferson to Ashtabula. It was a toll road. The planks were a foot wide and laid side by side all the way. They would warp and twist and the wagons bumping along would strike a plank with water under it and squirt the water a rod to one side. Then if we children happened to be there we would get a little mud, which used to make

us very angry. Then the planks were all frazzled up by the long use and full of splinters which we would get in our bare feet.

My earliest remembrance is when I was three years old father got me a pair of some copper toed boots with red tops, and mother dressed me up warm with mittens held together by a string, a thick comforter wrapped around my neck and a cap on and I started to walk to Bigelow's land in the deep snow. Mother never thought I would go away from the house, but I went right down to the plank road where the sleighs were skimming along, and walked half a mile to Sykes's place when a man with a cutter stopped and asked me my name and where I was going. I told him, and he promptly offered to take me there. So I got in and he soon landed me at home much to mother's relief. I was very small and chunky, and a bundle of energy, always at something, as long as I was awake. Mother used to tell me that I gave her more trouble than all the other seven children put together. Grandfather Burton used to call me Tom Thumb. I do not remember him, but I remember my stocky and matronly grandmother Jones. I remember Joshua R. Giddings, an enormous white haired man, who was the celebrity of the town. My grandfather Jones died the year before I was born. Giddings died of apoplexy. I remember seeing him carried into the house after the first stroke. He was the Government consul to Canada when stricken last. His daughter married Julian a famous man. Grandfather erected and ran the hotel at Jefferson, which was opposite the courthouse. I stopped in it when I visited the old home in 1893. Father said that grandfather used to drink liquor occasionally to warm him up in the long rides in the cold, till one day he thought he would see what virtue there was in it and tested it out and found it was all a fake. Then he quit it. Father was a man of clean habits, never drank, and never smoked till he began to have terrible toothaches when he was a grown man. Then he was advised to take up smoking to stop the pain. Dentists were few those days and confined their efforts to pulling teeth by turnkeys which was very painful and dangerous. When I knew father he used to smoke only finecut tobacco, in later years at Grinnell he smoked a great deal and in the house, and it was nauseating especially when stale. I remember when he was working hard in the summer time his shirts were yellow from the

tobacco sweat, and stank with tobacco odor. Father was ^{my} a member of the Congregational church. He was a remarkably level headed and honest man, and generous and sociable to a fault. He always kept a diary, and was very accurate in business. He had a common school education which consisted of the three Rs. He was a beautiful penman and had acquired it from study under Platt H. Spencer the author of that system. At Grinnell in the winter time he used to have singing schools and taught vocal music to classes in the country districts. He used to sing in the choir there and also sang in the Messiah as one of the soloists. He tried to teach me to sing but I flatted so that I saw it worried him, and so I gave up trying to learn, but I always sang at church and S.S. the soprano. Later after I was married I discovered why I was flattening and corrected it, but I never had time to learn a part after that though I often sing tenor now, but I do not feel the confidence necessary, and cannot hold the right tones when I am at all disturbed by having people looking at me. But I am not at all put out by public speaking after the first few moments, but those are fatal to my singing alone. Then when Carrie came on and showed such remarkable talent she used to play for father, and Sunday afternoons and at other times the family was treated to his magnificent singing for years. Carrie had such expression, capacity to put feeling into her playing. There never was a family with more affection than ours. Mother was the soul of self-abnegation. She lived for others. But I must not anticipate. Father always wore a full beard.

Several years before I was born grandfather Burton was pastor of the church at Jefferson, though he was a Presbyterian. Father must have been choir leader then. He ^{grandfather} had two daughters by his first wife and one by the second. Lavinia was the oldest child, and Margaret the next. Lavinia was at that time a widow. She had married a Dr. Howard and had one boy William about a year old. Her husband was a poor boy and worked his way through the medical school but the privations he endured to get his education wrecked his health and he died about that time. Father was a very social man and used to visit at the house often but he always called for Margaret. though he showed no particular attention to her more than to the other. One day

day much to Lavinia's surprise he asked her to marry him. It was characteristic of her perfect self-abnegation. She never thought of herself. I was born the year after. Mother was a little slender woman, with light blue eyes, and thin brown hair, becoming almost bald in old age. She weighed about 90 lbs. She was very intellectual and a great lover of the best poets and Addison, Scott, and the other classical writers. She was a great nature lover and encouraged us in all studies of nature. She always had a vase of fresh flowers on the mantle in summer and in the fall used to have us gather the brilliant berries of the bittersweet, feathery grasses, asters and goldenrods, and dip them in alum and keep them till spring. The first remembrance of such things was when we boys found some remarkable roots entwined and she had us take them up to Mr. Olds the pastor, to show him. It was our great delight to bring a bouquet of the first spring flowers to mother: bloodroot, spring beauties, and Dutchman's breeches, and peppercorn. There was a time when spiritualism ran rampant in Ohio, and there was a general revolt in favor of ^{of} unbelief, when Tom Paine was the idol, that the spiritualists tried to steal the Cong. church. Uncle Henry Jones belonged to that bunch. ^(Robert M. Jones's father) Father stood guard when a bunch of them tried to break in. He told them they would never get in except over his dead body, and they knew it would be a mighty risky business trying. They went away. That was before I was born I think. In my time the sermons were very dull and long, always an hour or more. We children all had to go to church and sit still too. Then came S.S. They had classes of about half a dozen boys. The girl teachers were of the goody-goody class without pep or knowledge, and it was a bore to have to learn and repeat the verses of the lesson. Everything was a bore. We did things because we had to. It was the same way in school. We had to learn and repeat the multiplication table. We had to learn our letters. There was no pleasure in anything. Everything was duty. Crucify every desire of the body because it was altogether sinful and wicked. We were naturally depraved and wicked. Matters of sex were never mentioned except among the boys behind the barn. The marriageable women used to speak of certain men as good catches, much as you would fish for suckers. Yet the social life was sweet and real love was common, but any mention of such

things was taboo. The men among themselves reveled in dirty stories, and the women were as dirty, among themselves. It was shocking for the women to show more than their toes beneath their skirts or wear low necked dresses. They wore corsets and ^oballion skirts when dressed up. But at home had simple calico dresses without fixings about the breasts, and they soon got greasy enough to show the exact shape of the breasts if they had any. There was little inducement for them to have any shapely legs or breasts as they could not show them, and so a shapely woman was rare. The women were restricted so that they took no exercise after maturity and were hampered by custom and dress and were sickly and skinny. But they all had to be good housekeepers and could cook anything and make anything even to spinning their own yarn and making their own hats. They used to pride themselves on their fancy work, and home decoration was the rule. Among all the dreary dullards and conventional women I remember one jewel, Hattie Cook, a self-made girl, driven from home by her mother-in-law, who came to our house to work for mother. She was a queen, she must have been beautiful, she was tireless, she loved everything and everybody. She was the embodiment of pep. Always singing at her work, ambitious to get an education, studied every minute, soon fitted herself to be a teacher and got a certificate to teach and taught in our district. How we boys loved Hattie. Mother loved her like a sister. Ours was her home. In the midst of her first term she was stricken with typhoid and died in a week. I saw her dead body laid out white and still in death, the first dead body I ever saw. Stricken down in the very prime of life. We resigned ourselves to it as one of the unsearchable acts of God who took her away from us. Now I know it was from the criminal carelessness of someone by whom she was infected. It took more faith in God ^othese days to resign ourselves to such things than now when we have a saner view of what God wants.

Being the first child was taken along with father everywhere that he could take me. I remember his taking me to town many times when I was so small that he used to take my hand and half carry me for I could not keep up with him walking. I should have said earlier that he had blue eyes and very thick and heavy hair which was brown. He was a very hairy man with

shaggy chest. He was great lover of fine horses, and had a magnificent pair of black mares which he used to haul logs and also drive in the carriage. They could start and haul ash logs four feet in diameter and about 12 to 16 ft. long that two pairs of oxen could not budge. I remember well how the horses enjoyed it. He had the log on the bob sleds in the woods. He had worked skids under the log putting the other end up on the sleds and having pulled out the bolster stakes on one side, he would wrap a chain two or three times around the middle of the log and then hitch the team to the end of the chain. Then he would start them carefully at right angles to the ^{skid} skids and the team would unroll the chain as the log rolled up the skids and on to the sleds. They would stop instantly when spoken to. Then he would drive in the bolster stakes and chain the log to the sleds by the chain and a spring-pole. Then hitch the team to the sleds and back them up so the tugs would be loose. Then he would stand to one side and direct the ^a ~~team~~ so that it would start the sleds at an angle to the way they were to go. Then at the word they would spring forward like cats and the log would start or the tugs would break. The moment the log started they would keep pulling and away they would go still out on the road where it would be safe to stop and rest. Maria was the name of the oldest one and she was just my age. I think Queen was the name of the other. Maria was the smartest horse I ever knew. She would prance all the time father was driving her and pull on the ^{reins} ~~lines~~ so hard as to tire his arms. The team could go 12 miles an hour in the buggy. When mother drove Maria singly in the buggy the mare would poke along most carefully and never act up. Father used to turn the mares loose in the morning to go down to the creek to water. They would dance and cavort like colts, and after having their fun would come back to the barn. Father used to put me on Maria to ride down to the water. She would never kick up with me but would run like the wind, and I would hold on ~~to~~ her mane, but my legs were so short I could hardly stick on. One day she stopped a little too quick when she reached the water and put her head down. So I took a header and landed on my nose in the gravel. I was so small that I could not climb on her. So when father was not around I would wait till Maria put her head down to get a bite of hay, then I would straddle

die her neck, which would cause her to lift her head up, and then I would slide down on her back. Maria lived to be 21 years old. In Iowa she was the main stay for years, and I learned to race her. I remember when we first went to Grinnell out on the prairie by Bateman's. Father put up a board shanty to live in and ran a wire fence around the land. While this was building we used to ride the horses out beyond the fence to pasture in the evening. I used to jump on Maria and lead the band of horses out on the dead run without bridle or saddle or even a halter. One day she was going like the wind and came up against a new line of fence that had been built that day. I tried to stop her but she did not see it. So I jumped off to save myself from being thrown when she hit the fence. I landed on my feet and turned several summersaults and wound up on my head which was nearly jammed through me. I was pretty sick after that for a time, but Maria stopped at once when I fell, so she did not get hurt.

My chief amusement when I could find nothing else was teasing my brother Charley. He was two years younger than I. I used to make him crazy mad. He had hydrocephalus when a child and was very sensitive. Once we had company and we boys had to wait till the second table which always made us sore. So I teased him about it and he became furious and turned to the knife box and picked up a very sharp butcher knife and struck at me. It caught me on the wrist and made a gash an inch long from which I bled profusely, the scar I still have. In Iowa he would pick up an ax or hoe or any weapon he could get hold of and come for me saying "You are dead now sure pop on the goose". I would run till I got over laughing and then turn and wait for him. Then he would run up and pull back the weapon to strike. The moment he got it back to the farthest point ready to bring forward I would spring and catch it, jerk it away from him and slap him and throw him down. Then he would squall and call mother, and the tableau would be over. One night after mother had finished washing she had a tub full of dirty water on the floor. Charley was standing with his back to it. I said "Charley back up". He backed up and caught his feet on the tub and went down all over in the water. He was roaring mad, but mother was so amused at the drollery of it that she had to laugh so I escaped punishment. I used to get whipped

get whipped about every day for some stunt or other, and father did not spare me either. It was the only way to bring me to time. Mother used to think he was too severe, but he was not. I deserved all and more than I got. I was never vicious, just full of devilty. It never occurred to me that I was really doing any wrong, for it was fun to me. Charley's eyes were weak so that he did not go to college and so never got any but a district school education, but he was a great reader. I have always felt that may be I was responsible for his not forging ahead as I did. Nothing could stop me. That I was a terror to all the children when I was young for teasing them is shown by my reputation. My cousin Kate Cowles used to dread the very mention of my name even after we had moved away. Cowles married Margaret my mother's full sister, and Kate was her oldest child, about my age. Margaret (Starkey) was the younger child of her mother Margaret who died in childbirth at her birth as mother's mother did with her child Margaret. Margaret Cowles married Starkey and they still live in the old Jones home at Jefferson, and Kate lived with them till she went insane and went to the asylum. My habit of teasing has never fully left me, but I long ago ceased to tease folks when I saw it hurt them. It has been replaced by the use of sarcasm and by joking for the purpose of entertainment and reproof. I think the great incentive to joke was caused largely by mother's fits of despondency which she called the "blues". When anything particularly bad occurred she and Carrie would get together in the kitchen and talk about it till it became painful to see. When I would see mother so depressed I would start to get off jokes, pantomimes, fake orations, sarcasms, anything that would arouse mother's exquisite sense of humor. I would make her and Carrie laugh till their cheeks ached. Then the clouds would pass from the skies, the sun would shine, and they would pull themselves together again. I was the soul of optimism, though never a dreamer in the ordinary sense, never a rainbow chaser, though all my life I have when awake in bed created situations that might happen, and decided what I would do under those conditions, so that seldom does anything occur that I have not already thought out and decided what I would do under those conditions. I have imagined every possible thing, traveled everywhere, experienced everything in my waking dreams.

Our home was always open to all our friends, and we had a great deal of company, but we were never stylish nor wanted the friendship of the rich. It was intellectuals and music lovers and church people most of all. Mother first and last thought was to do good. She was the inspiration of all benevolent work and temperance work. She organized a Dorcas society in the neighborhood that met once a week for many years. She was always recognized by the workers in the town as a delegate and member. Mother could not sing. She was always loyal to father, always loyal to every friend. She was my inspiration in everything. She was very retiring, people had to push her to the front but she delivered the goods. Hers was an example of living.

Sociability was great in those days. The people had all sorts of public entertainments which were entirely distinct from the church. The church was ^{by} a separate religious and took no part socially. I remember we used to have debating societies and school entertainments at the old north school. I remember my first advent on the stage was there when I was four years old. Mother or father had taught me a little piece and I was carried through the crowd by father and placed on the stage to recite it. Later on we had a debating society there and my half brother Will took part in it. I was too young to debate then, but took other parts. I remember they had a club paper edited by one of them and got off skits on various folks.

While we were at Jefferson there was an eccentric man named Crosby who was a character. He was very poor and had a large family. He had a yoke of oxen and used to team around, and was very profane. We could always tell when he was coming by hearing him swear at the oxen. The road by our house was cut through some oak or other brush and was full of short stubs. He would come along by the side of the oxen and once in a while would stub his toe against one of them and fall down. He would pick himself up and swear at his legs and beat them with his whip. He was addicted to poaching. One day a neighbor wanted a particularly fine piece of hickory for a wagon tongue or the like. Crosby when told of it said he knew right where he could get it, but he would have to steal it, but would get it if the man would keep it quiet. When it was agreed to he got it and was paid for it. A few days later that man was out in his lot and missed a particularly fine

hickory tree in his ground and was very angry about it and went to Crosby to find out if he stole it. Crosby said yes he did, but he had agreed to say nothing about it. Everybody regarded him as half-witted. But he was not so green as he looked always. The great outstanding fact about the men of those times was ^{their} perfect self-reliance and capacity to do things. Every man was trained to do anything about the home. He was his own carpenter, mason, machinist to a certain extent. But the profession of shoe-maker and blacksmith was a real art. It was wonderful what they could do. Cabinet making was also an art. When the frame of a house or barn was to be raised they had a raising bee with refreshments and the men got together and pulled the frame up in place and braced it. The timber was then faced by broad-axes. The character of a man was gauged by the quality and keenness of his ax. They were adepts in the use of the ax. All wood was cut by axes. We had no coal except for the blacksmiths. Father taught me the art of splitting wood. They used to have tread mills where one or two horses were hitched in them and had to walk on a revolving floor of planks tilted at an angle so that the weight of the horses would make it revolve. Then a long pole was fastened to a crank attached to a wheel that the floor ran over, and the other end had a long saw attached to it. This would be let down on a log placed on a carriage and a section of it would be cut off long enough for stove wood or the fireplace as desired. These blocks then had to be split for wood. It was a real art to do it fast and well. The use of bake ovens was just going out when I was young. Every house had a fine bakeoven built in it, and a large fireplace. Most of the bakeovens were oval and about a foot high and two to three feet long and 1.5 feet wide. They would build a fire in them and when it was hot enough they would rake out the embers and coals and put in their bread, cakes and pies and meat. But cook stoves came in when I was quite small, but no heating stoves. We all sat around the fireplace, cooked in front and froze at back. The wood was always popping out live coals on the carpet when there was a carpet. We used to roast chestnuts and potatoes in the ashes, and make maple sugar and taffy over the fireplace. They would often make a stew in a ^{little} kettle there. Usually cranes were built in the fireplaces to hold the pots.

Feats of strength were the vogue, but there was no systematic training. We used to wrestle and fight a great deal. The boy who could wrestle and fight was it. I had the reputation of being a good fighter and was pretty good at wrestling. There were bullies those days too. There was a boy in the town school that was cock of the walk. He sent me word that the first time he met me he would lick me. We met one day and he proceeded to whip me. I saw at once that I was no match for him in a standup fight with fists so I gripped him. We were of the same build, size and weight, and equally husky. We strained and pulled and hauled till we were about all in, but neither would give up. Just when something had to give way an old lady came along and separated us and gave us a scolding for fighting. He went one way and I the other and we never met again, tickled to death because neither had to give up.

I remember grandmother Burton, the mother of Phil. M., Will and Theodore, grandfather's second wife. She was a Grant, related to the royal line in England, had the gout, arthritic rheumatism, and varicose veins. Her fingers were all knotted up with the gout. She was the head of Painesville seminary when he married her. She was no housekeeper. She used to skilfully the milk pans and then run her finger around the edge to release the capillary raised edge and suck it off in her mouth. She was very disagreeable and afterwards went crazy. They lived at Austinburg, 5 miles away, and I used to go over there to visit. Theodore was a year older than I. He was a mental prodigy. He used to let me put my hand over the writing that accompanied the pictures of the statesmen and generals of American history and he would give their names and tell what they did, all of them. He used to steal watermelons and hide them in a barn and eat them later on. Once I remember his sending Will and me word to come over and get some melons. We went but I felt a little skittish about eating stolen melons.

In 1863 uncle Charley Jones who lived in Rochester Minn. and had a farm there (Corydon was running it) wanted father to buy up some horses and bring them there. So he bought them and drove them to Ashtabula or Cleveland and shipped them by boat to Detroit. Then shipped by train to Chicago. He bought a Schettler wagon there and drove from there to Rochester.

I went with him. I remember the trip across the lake and how seasick I was, and how homesick I was the first night out. I cried and cried. I do not remember much of the trip across Michigan except near Madison and the two beautiful lakes there, and the crossing of the railroad. Father sent me ahead to see if any train was coming. I went and reported nothing in sight. We had just got across when the express came by like a shot, which scared me very much. Then I remember Lacrosse where we took the boat across the Miss. river. There was a high bluff, the highest I ever saw. It looked very high, it was 100 feet high. Some boys and I climbed it. It was flat on the top. There we came across a peculiar snake they called a sting-tail. It was about as long as a small rattler, was very vicious, curled up with the tail in the middle and struck at us with the tail. We killed it. It had a very sharp and hooked thing on the end of the tail like a scorpion's sting. At Rochester it was my business to feed a mare that had a little colt. She was very thin and I fed her bran twice a day for pay. I used to play with the colt. I would grab it and hold it in my arms. One day it kicked at me with both feet and hit me in the breast and knocked me flat. Stiles and Bob Jones also lived there. We used to go out in the brush hunting plums which were hardly ripe yet. At that time the Sioux rebellion started and we were afraid a band of Indians would come out of the brush and scalp us. Father went home by way of Winona where we took a boat down the river to Dubuque. From there we went by train to Marshalltown where uncle Levi Giddings lived. I remember sitting at the table eating. The folks were busily talking when little Reed called for bread, no one paid any attention, then he called louder, nobody noticed him. Then he yelled at the top of his voice "Bread". He got the bread. The next day Levi Father and I drove in a single buggy to the land at Grinnell, round trip of 70 miles in a day. They shot all the prairie chickens they could carry home. When we got home to Jefferson I was quite a celebrity among the boys because I had been to Minnesota. I remember some of us boys played truant and the woman teacher gave us a good licking for it. Then she seemed to relent and sent us over to her house with a message to her mother who gave us something to eat. We despise her for it. and paid among ourselves that she was chicken-hearted.

I well remember two playmates, Frank Bailey and George Daniels. George was a degenerate, a liar, and profane, and mother did not want us to associate with him at all. Frank was a fine boy and made good. They lived on the next corner east. They had a fine orchard and used to make cider. They had a remarkably fine pippin tree at the house. He had a pup that we used to run away from around the house. He soon got too fast for us. I remember their making a lot of cider at one of the neighbor's west of us. The press was a big one in the barn. We boys used to lie on one of the beams of the hay mow, with long straws and suck the new cider out of the runways till we could hold no more. The runways were lined with boys, bees and wasps. It is strange that I do not remember more about Will. He was my constant companion. He was a very good boy, never bothered mother that I remember. He and I used to work together in the mill cutting lath and wood on the circular saw that father put in. I remember we would hold a lath in the hand and let it drop down on the top of the saw. The moment it would touch it would be jerked out of our hands and shot clear across the mill. We would try to see how close we could come to a mark there. Will was a fine and natural artist. He was three years older than I. He was a quiet boy.

Just now this is all I remember about our life at Jefferson. Then came the great event, the move to Iowa. Father was making a good living but the boys of Jefferson were very bad and he and mother decided that it was not the place to raise a family. So he sold out at a considerable loss and went west to Iowa to become a farmer about which he knew nothing, for the sake of us boys.

The clothing of those days was heavy woolen socks, boots, wool pants and coats and caps for the boys and men, wool mittens or buckskin. The small children had one or more skirts coming below the knee and no drawers, short stockings and shoes were worn. The women wore several skirts and a petticoat down to the ground, plain split drawers, shoes and stockings. Underwear was not known those days. shawls.

We left Jefferson April 14 1864 or about that day for we were on the train the first night out on that date. The next morning I looked out and went forward when we stopped at a station and saw the engine draped in

black. When asked the reason he said Lincoln was shot. What a terrible calamity that seemed. The only thing else on the trip I remember was crossing the Mississippi river at flood when it was miles wide at Davenport.

A few more things about my birthplace. Mother usually had a hired girl. Evenings these girls would get us children in the kitchen and tell us all sorts of ghost stories and blood-curdling tales, so that I was scared to go out in the dark. I did not get over looking under the bed when I retired till I was thirty five years old. Uncle Abner Waters, a brother of grand-mother Jones, was a very old man, bald-headed and wore an auburn wig, and he used to visit us. I think he lived in Wayne. He used to take me up in his lap and tell me tales of exploits when they first came to Jefferson when it was all woods and they had to cut off the timber to make homes. He told of trapping bears in log cabins made on purpose, where they baited something inside of the cabin with meat and the bear went in and sprung a trap door that fell and shut him in. Then they went with guns and killed him. They had whole some fear of bears. Then he told of trapping the big gray timber wolves in steel traps fastened with log chains and hearing the chains rattle they would go out and kill them. He told of the panthers how they lurked in the trees, particularly the black panther which used to reach down and catch people with their claws and pull them up and kill them. The woods were peopled with savage animals in my imagination. There were some deer still left, a few bears, and rarely wolves when I was there. The woods were full of squirrels, gray, black and red, pheasants, quail, rabbits, foxes, coons, and woodchucks. Every man was supposed to be a crack shot. Father had a long and very heavy squirrel gun that was a muzzle loader as all were, about a 32 bore, that was loaded with a long hickory ramrod and a ball with a patch of cloth around it to grip in the rifling. We had nothing but black powder which we often made ourselves from willow charcoal sulphur and saltpetre. The gun was fired by a cap setting over a nipple on which a hammer fell when you pulled the trigger. There was a double trigger, one was set to go off at the slightest touch, called the hair trigger. Father could bark a squirrel out of the highest trees. That is send the ball into the bark of the limb on which the squirrel was lying

just close enough to the animal to drive the bark against him and kill him without breaking the skin. I have seen him do it. That was called some marksmanship. They were always expected to shoot the squirrels in the head and even that was some feat for a person had to come within half an inch of the place at least to kill. I barked a squirrel once at Marysville. Gillies the blacksmith was the crack shot of the town. He used to hunt deer. He accidentally shot himself while out hunting and died. Comfort Giddings ^{three} lived diagonally opposite us on the hill. He had ~~two~~ daughters, Anna, Ada and Ella. Anna was an old maid and taught school at Carson City Nev. for a time. Ada was a beautiful and lithe young woman, a kind of snob and very soft on the young men. She married. Ella never married but always lived at home. Her father used to work ~~the~~ old farm. He was a big man like his father but without any pep or ambition. He had a big barn and used to fill it with hay. I remember us boys would go over there and burrow long tunnels in the hay on the floor. I called there in 1893 early one morning and found a white haired old lady whom I recognized as Ella, but of course she did not know me. Her father insisted in taking me all over the town that day and showing me all the new buildings. Some of ~~my~~ old playmates besides those mentioned were the Pease boys whose father had a big farm near the school house. Then there was Fred Sykes whose father was the carpenter. Then his cousins the Loomises. Myra Loomis was Will's sweetheart. Laura was the beauty who went to the bad. There were the Udell's relatives of ours who lived farther north. I remember he had a huge stump-pulling machine. I remember father had a relative who went crazy trying to invent a perpetual machine. He was confined in the poor house which was on the way to Ashtabula. When father would visit him he would talk rationally about things but when he would start to go he would take him to one side and whisper in his ear "Be sure to keep the wheel-reel going". Grotius Giddings became a major in the Rebellion and a man of reputation whom we children thought was some pumpkins, but he died soon after. Addison Giddings was a lawyer and well off and his family were hightoned and rather looked down on their relatives. My uncle ^{Jones} Lyander lived in New York and visited us twice. He had a very fat wife and used to say that he had to embrace her by installments.

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Eugene was his oldest. On a visit to us he saw his first cow and asked his father what kind of a horned horse that was. The oldest son Lyla was aude and would never wipe on the same towel twice, which was scandalous to us. Lysander was in New York in the riot and was going home and was accidentally shot through the bladder and lived, which seemed a miracle then. My uncle Flavius was a crank, a spiritualist, a snob, and he and father never seemed to think much of each other. He was always butting into things not his business. He had one son, who died. He also came west and lived at Butte or somewhere up there for a time. His wife died. When he was sixty he married again, a young woman and moved east. We thought that was scandalous for a man that old to marry. Uncle Eugene was father's favorite. He moved to Carson City in the fifties and made a fortune in the wood business twice. He was a great business man then and kept a hotel at Empire in the palmy days. He was one of the leaders in Nevada then and was a member of the Legislature. In later life he got to drinking and lost his money. When I saw him in 1882 he was about all in. Uncle Charley was private Secretary to Senator Windom of Minnesota and very much of a snob. He was well off then but lost it all and moved to Oakland Cal. where he died. He was the one who wrote to father at the critical time when I was starting to college and told father to take me out of school and make me help support the family for he said a common school education was good enough for his children, they were quite young then. This came as a severe blow for it was very hard for the folks to get along then, and it made mother very sore at him. When his children got older he sent them all to college, but it might have ruined my life. I always despised him. Uncle Corydon was the youngest and was engaged to a young lady when he contracted tuberculosis at 21 years old. The doctors said he would hardly live a year. So he never married. He was a jeweler by trade. He is still living at about 93 years old, all the rest are dead. The girls all died soon or late of tuberculosis. Mother told me of the death of Grandfather Burton. She was his favorite child and wrote the MS. of all his writings. As he lay dying she said "father how do you feel about dying." His reply was "I know that my redeemer liveth". I have a copy of a poem he wrote.

I remember the war of the Rebellion very vividly. At the outbreak, father being captain of the militia was very anxious to volunteer, but there was no one to support his large family. His friends all advised him not to enlist, so he did not. But no one questioned his loyalty. Howard still has his sword. All was at fever heat. Every day some one would get the Cleveland Plaindealer and read the news out loud on the street to a big crowd. Sympathizers with the South were called copperheads. The copper head is a sneaking snake common there that bites without warning. One day some one in the crowd dared to get off a sneer at some news. Instantly a man near him turned and like a flash knocked him down. Harper's Weekly was the great illustrated paper of the war. Father had a complete file of them and I used to pore over them and knew every battle of importance during the war. How I wished I was old enough to go. One day, the day John Brown was to be executed in Virginia, we were all excited about it at school when a man passed by with a rope in the wagon. We children wanted to know if that was the rope to hang him with. Distance made no difference to us. A regiment was raised and quartered at Jefferson. Buckley was its colonel. He was a tyrant. The men let him know that at the first battle he would be shot. He resigned when it was called to the front. Only a few men ever returned. They feared the hospitals as almost sure death.

In writing these things I am not writing for the benefit of anyone. I am going to simply mirror things as I saw them, with an occasional comment born of later experience. I do not propose to excuse myself for anything I ever did, nor will I shield anyone. I intend to show the development of my mind and heart and of those about me and the results. I am not going to write for the approval of my children, nor have I anything I want to prove. This will be an autobiography in the very nature of things, a mirror of my life as I saw it. I shall make errors in dates, and in interpretations of events probably. I simply intend to tell what I have done and how and why.

The year before I was born father and grandfather Burton went to Iowa bought some land together six miles east of Grinnell, as a kind of nestegg. It was all prairie and trackless. There was a natural grove of oaks, elms, maples, basswood (Tilia), hickory, and hazelnut brush and wild plums a mile

east of it. It was all prairie to town. Grinnell was the terminus of the Rock Island road ^{the year that we moved there} that year, and everybody bound west landed there. There were great freighting teams bound for the Rocky mountains and the far west, loading up for the thousand or more miles' haul. There were the mule whackers as we called the drivers, regular old time frontiersmen, armed to the teeth, dressed in leather, with long hair and whiskers, booze fighters, and gamblers, and Indian fighters. I remember one at the hotel who had a lot of Indian scalps dangling at his belt, ^{who} played checkers with father. My father was supposed to be the best player I ever knew. That man skinned father to a fare-you-well. He was a real expert, the first I ever saw. While at the hotel waiting for our shack to be built on the place, I remember a long and lank man with a frisky team in a light open buggy stopped in front, and then started again. The team tried to run away and he braced back on the lines to stop them and the lines broke and he turned a somersault over backwards and landed on the ground and the team ran away.

The shack on the farm was a I-roomed board house with boards laid partly across on the stays connecting the rafters, where we boys slept by climbing up a ladder. There was one window in it and no lining nor plaster. The chief thing was to get the land plowed so as to plant a crop of sod corn before it was too late. Father took two teams and soon had ten acres plowed. Then we boys would go along on the sod and cut holes with an ax about two feet apart and drop a few kernels of corn and then close the cut. Every morning about sunrise hundreds of prairie chickens would gather on the sod and make love. The cocks would strut around, swell out the red sacs on the neck and spread their wings and make a droning noise. The females would look on approvingly. Often the cocks would get to fighting. Father used to aim the rifle out of the window and shoot the morning meal. After the plowing was done and the fence made father began to ^l build a house on our land. It was finished and plastered before fall. That summer Phil. Burton and Will. and Theodore came out with a band of sheep and lived with us. It may have been the next spring that they came. Phil. was a supercilious snob of the first water, a hog, very sarcastic and insulting and made mother a great deal of trouble. He used to be very insulting to us boys, so much so that

much so that I determined to beat him to a frazzle if he ever tried it when I was grown. Many years later when I was home at the ^{de} death of mother he tried to be insulting to me and I turned to him and told him that if he ever opened his head to me I would thrash him within an inch of his life. He shut up like a clam. How I would have liked to lick the tar out of him. They lived with us till father saw that there would be no peace unless he moved away, so he sold out to Will Burton at a loss of nearly \$1000 and bought a place at Gardiner's grove 3 miles northwest of Grinnell in the spring of 1867. The winter of 1866 on the 14th. of Feb. father and mother took a trip to Marshalltown. That day a blizzard set in and the temperature went to nearly 30° below 0 and the snow drifted to the tops of the fences and buried most of Phil's sheep and smothered them. It was 3 days till it began to let up. I remember Theodore was the shepherd. He was long and lank and walked stooping, talked to himself and moved his head up and down in unison with his steps. He always had a book under his arm. He was a great hand to deliver extempore speeches when he was alone. After we moved grandma Burton came out and kept house for them. I think Theodore came with her, but he may have come with the others. The place at Gardiner's grove had a little log cabin on it, full of bedbugs. Father built a 1 1/2 story board house over it with two rooms below and three above. It was a beautiful place in a natural grove of oaks and second growth hickories. in an angle of Sugar Creek. The clearing was lined with plums and crab apples and when we went there they were in bloom and made the air fragrant. The whippoorwills would sit on the fence at night and call to each other all over the grove. The owls would hoot. In the daytime the quail would call. The grove was musical with the singing of birds, and the woods were full of flowers. Now we learned to love the old place. There were walks down to the creek along old wagon roads. There was the east road to the ford where the swimming pool was. There was the hog lot road that went north to near the creek and passed the old hog lot where the Ambrosia trifida grew to ten feet high in a regular forest, then came the big blackberry patch where we could pick a bushel of berries. Then there was the road to the Clay ford northwest past the leaning old basswood trees which were hollow and had

and had squirrels nests; woodpecker and owl nests in them. we used to tree rabbits in them and cut them out. There were all sorts of shaded nooks where Anna and I later on used to sit. Hundreds of times I have gone down that walk, thinking, composing orations, etc. Then there was a walk eastward down the swale where we had the sorghum mill forming a large amphitheater where I used to rehearse my orations and strengthen my voice. One day Mrs. Houghton who lived a mile to the east came over and asked Mother who that was "hollering" in the grove. There were several enormous burr oaks in the grove, nearly 100 feet high and three feet diameter that gave character to the grove. The ^{main} trees were secondgrowth hickory that made a perfect thicket and were when we came there about 20 ft. high. Father gradually thinned them out as they grew till when I left in 1880 they were about 40 feet high and made a perfect arbor over more than an acre. They used to bear wagonloads of nuts. Then there were many thickets of plums that bore bushels of delicious plums of all qualities some late ^{some} early. There were also many trees with fox grapes growing all over them. The brush in the clearings and on the edge of the woods were hazel nuts which always bore heavily. There were acres of crab apple trees and thousands of bushels of apples in the fall. Mother used to make crab apple butter. The grove covered about 100 acres. In the winter I used to kill many rabbits, and once in a while used to run them down in the deep snow. Frosty mornings in winter the prairie chickens used to get on the fences and trees to sun and get warm. I used to put a sheet over me and sneak up on them and shoot them with the rifle. There were thousands of them then. When we first went there all was unfenced prairie and we used to go down on the flats near the clay ford and cut a hundred tons of wild hay. Those days the creek was narrow, seldom wider than enough to jump across and with vertical banks and even overhanging, and there were many pike about 2 ft. long which I used to snare by slipping a broom wire loop over the snout and jerking them out. After the stock became numerous they broke down the banks and the creek became a mud hole. In the spring breakup I have seen the creek 1/4 mile wide and a raging river. We used to be so glad we lived in the grove when the wind blew, and it was most always blowing. I have seen the wind peel the hay right off the stacks when it was loaded with wire and rocks.

the right off the stacks when it was loaded with wire and rocks. I have felt it rock the house like a boat. At times a black low bank of clouds just touching the tree tops would come up like a racehorse, setting everything flying, and then the rain would fall in torrents and the lightning would flash continually in blinding light, and the thunder crash after crash so that you could not talk to be heard. Trees would be struck and blaze for a few minutes. It was magnificent, and appalling to some but I always enjoyed these manifestations of power, they inspired me. Then would come the calm, the dripping vegetation, the flattened grain, and fallen trees, and ground covered with debris, but it was great. We used to have about four months of sleighing. The roads were often drifted full and we sometimes went over the fences in the sleighs. Rarely did the temperature fail to fall to -10° , and sometimes as low as -30° , once was -33° . That day I walked home from school with a strong wind blowing, and froze the tips of my ears.

When the first winter came Will and I had to walk a mile south to the Bateman farm to school. Mrs Bateman (formerly Mrs. Reed) was the teacher. She had a daughter Georgia a very bright and old-maidish girl of my age, two sons Fred and Frank Reed, and three older Bateman girls and a boy or two whose names I do not recall. Georgia was a crack speller and won the prize for being the best speller in the whole region. The folks teased me about her as being my girl, we shied around each other some but I did not like her disposition. When we sold out and moved we boys went to the Houghton school which was built on the Houghton place a mile east of our grove.