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OUT OF THE WILDERNESS

BY JOHN MUIR

I learned arithmetic in Scotland without understanding any of it, although I had the rules by heart. But when I was about fifteen or sixteen years of age I began to grow hungry for real knowledge, and persuaded father, who was willing enough to have me study provided my farm work was kept up, to buy me a higher arithmetic. Beginning at the beginning, in one summer I easily finished it, without assistance, in the short intervals between the end of dinner and the afternoon start for the harvest and hay-fields, accomplishing more without a teacher in a few scraps of time than in years in school before my mind was ready for such work. Then in succession I took up algebra, geometry, and trigonometry, and made some little progress in each, and reviewed grammar. I was fond of reading, but father brought only a few religious books from Scotland.

Fortunately, several of our neighbors brought a dozen or two of all sorts of books, which I borrowed and read, keeping all of them except the religious ones carefully hidden from father's eye. Among these were Scott's novels, which, like all other novels, were strictly forbidden, but devoured with glorious pleasure in secret. Father was easily persuaded to buy Josephus's Wars of the Jews, and D'Aunigé's History of the Reformation, and I tried hard to get him to buy Plutarch's Lives, which, as I told him, everybody, even religious people, praised as a grand good book; but he would have nothing to do with the old pagan until the graham bread and anti-flesh doctrines came suddenly into our backwoods neighborhood, making a stir something like phrenology and spirit-rappings, which were mysterious in their attacks as influenza. He then thought it possible that Plutarch might be turned to account on the food question by revealing what those old Greeks and Romans ate to make them strong; so at last we gained our glorious Plutarch. Dick's Christian Philosophy, which I borrowed from a neighbor, I thought I might venture to read in the open, trusting that the word 'Christian' would be proof against its cautious condemnation. But father balked at the word 'Philosophy,' and quoted from the Bible a verse which spoke of 'philosophy falsely so-called.' I then ventured to speak in defense of the book, arguing that we could not do without at least a little of the most useful kinds of philosophy.

'Yes, we can,' he said, with enthusiasm, 'the Bible is the only book human beings can possibly require throughout all the journey from earth to heaven.'

'But how,' I contended, 'can we find the way to heaven without the Bible, and how after we grow old can we read the Bible without a little helpful science? Just think, father, you cannot read your Bible without spectacles, and millions of others are in the same fix; and spectacles cannot be made without some knowledge of the science of optics.'

'Oh,' he replied, perceiving the drift of the argument, 'there will always be plenty of worldly people to make spectacles.'

To this I stubbornly replied with a quotation from the Bible with reference to the time coming when 'all shall know the Lord from the least even to the greatest,' and then who will make the spectacles? But he still objected to my reading that book, called me a conscientious quibbler too fond of dispute, and ordered me to return it to the accommodating owner. I managed, however, to read it later.

On the food question father insisted that those who argued for a vegetable diet were in the right, because our teeth showed plainly that they were made with reference to fruit and grain, and not for flesh like those of dogs and wolves and tigers. He therefore promptly adopted a vegetable diet, and requested mother to make the bread from graham flour instead of bolted flour. Mother put both kinds on the table, and meat also, to let all the family take their choice; and while father was insisting on the foolishness of eating flesh, I came to her help by calling his attention to the passage in the Bible which told the story of Elijah the Prophet, who, when he was pursued by enemies who wanted to take his life, was hidden by the Lord by the brook Cherith, and fed by ravens; and surely the Lord knew what was good to eat, whether bread or meat. And on what, I asked, did the Lord feed Elijah? On vegetables or graham bread? No, he directed the ravens to feed his prophet on flesh. The Bible being the sole rule, father at once acknowledged that he was mistaken. The Lord never would have sent flesh to Elijah by the ravens if graham bread were better.

I remember as a great and sudden discovery that the poetry of the Bible, Shakespeare, and Milton was a source of inspiring, exhilarating, uplifting pleasure and I became anxious to know all their poems, and saved up small sums to buy as many of their books as possible. Within three or four years I was the proud possessor of parts of Shakespeare's, Milton's, Cowper's, Henry Kirk White's, Campbell's, and Aiken-side's works, and quite a number of others seldom read nowadays. I think it was in my twentieth year that I began to relish good literature with enthusiasm, and smacked my lips over favorite lines; but there was desperately little time for reading, even in the winter evenings — only a few stolen minutes now and then.

Father's strict rule was, straight to bed immediately after family worship, which in winter was usually over by eight o'clock. I was in the habit of lingering in the kitchen with a book and candle after the rest of the family had retired, and considered myself fortunate if I got five minutes reading before father noticed the light and ordered me to bed; an order that, of course, I immediately obeyed. But after night I tried to steal minutes in the same lingering way; and how keenly precious those minutes were, few nowadays can know. Father failed, perhaps, two or three times in a whole winter to notice my light for nearly ten minutes, magnificent golden blocks of time, long to be remembered like holidays or geological periods. One evening when I was reading Church History father was particularly irritable and called out with hope-killing emphasis, 'John, go to bed! Must I give you a separate order every night to get you to go to bed? Now, I will have no irregularity in the family; you must go when the rest go, and without my having to tell you!' Then, as an afterthought, as if judging that his words
and tone of voice were too severe for so
pardonable an offense, he unwarily
added, 'If you will read, get up in
the morning and read. You may get up
in the morning as early as you like.'

That night I went to bed wishing
with all my heart and soul that some­
body or something might call me out
of sleep to avail myself of this won­
derful indulgence; and next morning,
I went up in the morning as early as you like.'

Five huge, solid hours! I can hardly
found that it was only one o'clock.

Day! 'Five hours to myself!' I said,

Therefore I prudently decided to go
of so much suddenly acquired time­
it. I first thought of going on with my
wealth I hardly knew what to do with
possession of these five frosty hours.

dreamed of
myself of this won­
ning dry hickory or oak.

In the middle of summer, when har­
esting was in progress, the novel
time-machine was nearly completed.
It was hidden upstairs in a spare bed­
room where some tools were kept. I
did the making and mending on the
farm; but one day at noon, when I
happened to be away, father went up­
stairs for a hammer or something and
discovered the mysterious machine
back of the bedstead. My sister Mar­
garet saw him on his knees examining
it, and at the first opportunity whis­
pered in my ear, 'John, fayther saw
that thing you're making upstairs.'

None of the family knew what I was
doing, but they knew very well that all
such work was frowned on by father,
and kindly warned me of any danger
that threatened my plans. The fine
invention seemed doomed to destruction
before its time-ticking commenced,
though I had carried it so long in my
mind that I thought it handsome, and
like the nest of Burns's wee mousie it
had cost me money a weary whistling
nibble. When we were at dinner several days after the sad discovery, father began to clear his throat, and I feared the doom of martyrdom was about to be pronounced on my grand clock.

'John,' he inquired, 'what is that thing you are making upstairs?'

I replied in desperation that I didn't know what to call it.

'What! You mean to say you don't know what you are trying to do?'

'Oh, yes,' I said, 'I know very well what I am doing.'

'What then is the thing for?'

'It's for a lot of things,' I replied, 'but getting people up early in the morning is one of the main things it is intended for; therefore, it might perhaps be called an early-rising machine.'

After getting up so extravagantly early, to make a machine for getting up perhaps still earlier seemed so ridiculous that he very nearly laughed. But after controlling himself, and getting command of a sufficiently solemn face and voice, he said severely, 'Do you not command of a sufficiently solemn necessity for secrecy to destroy it, all necessity for secrecy being ended, I finished it in the half-hours that we had at noon, and set it in the parlor between two chairs, hung moraine boulders, that had come from the direction of Lake Superior, on it for weights, and set it running. We were then hauling grain into the barn. Father at this period devoted himself entirely to the Bible and did no farm work whatever. The clock had a good loud tick and when he heard it strike, one of my sisters told me that he left his study, went to the parlor, got down on his knees, and carefully examined the machinery, which was all in plain sight, not being inclosed in a case. This he did repeatedly, and evidently seemed a little proud of my ability to invent and whittle such a thing, though careful to give no encouragement for anything more of the kind in future.

But somehow it seemed impossible to stop. Inventing and whittling faster than ever, I made another hickory clock, shaped like a scythe to symbolize the scythe of Father Time. The pendulum is a bunch of arrows symbolizing the flight of time. It hangs on a leafless mossy oak snag showing the effect of the pressure of the rod leave home and go at his direction at any given hour and minute, and though made more than fifty years ago, is still a good timekeeper.

To this I made no reply, gloomily believing my fine machine was to be burned, but still thinking of comfort I could in realizing that anyhow I had enjoyed inventing and making it.

After a few days, finding that nothing more was to be said, and that father, after all, had not had the heart to destroy it, all necessity for secrecy after controlling himself, and getting voice, he said severely, 'Do you not command of a sufficiently solemn necessity for secrecy to destroy it, all necessity for secrecy being ended, I finished it in the half-hours that we had at noon, and set it in the parlor between two chairs, hung moraine boulders, that had come from the direction of Lake Superior, on it for weights, and set it running. We were then hauling grain into the barn. Father at this period devoted himself entirely to the Bible and did no farm work whatever. The clock had a good loud tick and when he heard it strike, one of my sisters told me that he left his study, went to the parlor, got down on his knees, and carefully examined the machinery, which was all in plain sight, not being inclosed in a case. This he did repeatedly, and evidently seemed a little proud of my ability to invent and whittle such a thing, though careful to give no encouragement for anything more of the kind in future.

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My mind still running on clocks, I invented a big one like a town clock, with four dials, with the time figures so large they could be read by all our immediate neighbors as well as ourselves when at work in the fields, and on the side next the house the days of the week and month were indicated. It was to be placed on the peak of the barn roof. But just as it was all but finished father stopped me, saying that it would bring too many people around the barn. I then asked permission to put it on the top of a black oak tree near the house. Studying the larger main branches I thought I could secure a sufficiently rigid foundation for it, while the trimmed sprays and leaves would conceal the angles of the cabin required to shelter the works from the weather, and the two-second pendulum, fourteen feet long, could be snugly incased on the side of the trunk.

Nothing about the grand, useful timekeeper, I argued, would disfigure the tree, for it would look something like a big hawk's nest. 'But that,' he objected, 'would draw still bigger, bothersome trampling crowds about the place, for who ever heard of anything so queer as a big clock on the top of a tree.' So I had to lay aside its big wheels and cants and rest content with the pleasure of inventing it, and looking at it in my mind and listening to the deep, solemn throbbing of its long two-second pendulum, with its two old axes back to back for the bob.

One of my inventions was a large therometer made of an iron rod, about three feet long and five-eighths of an inch in diameter, that had formed part of a wagon-box. The expansion and contraction of this rod was multiplied by a series of levers made of strips of hoop-iron. The pressure of the rod against the levers was kept constant by a small counterweight, so that the slightest change in the length of the rod was instantly shown on a dial about three feet wide, multiplied about thirty-two thousand times. The zero point was gained by packing the rod in wet snow. The scale was so large that the big black hand on the white painted dial could be seen distinctly, and the temperature read, while we were ploughing in the field below the house. The extremes of heat and cold caused the hand to make several revolutions. The number of these revolutions was indicated on a small dial marked on the larger one. This thermometer was fastened on the side of the house, and was so sensitive that when any one approached it within four or five feet the heat radiated from the observer's body caused the hand of the dial to move so fast that the motion was plainly visible, and when he stepped back, the hand moved slowly back to its normal position. It was regarded as a great wonder by the neighbors, and even by my own all-Bible father.

Talking over plans with me one day, a friendly neighbor said, 'Now, John, if you wish to get into a machine-shop, just take some of your inventions to the state fair, and you may be sure that as soon as they are seen they will open the door of any shop in the country for you. You will be welcomed everywhere.' And when I doubtfully asked if people would care to look at things made of wood, he said, 'Made of wood! Made of wood! What does it matter what they're made of when they are so out-and-out original. There's nothing else like them in the world. That is what will attract attention, and besides they're mighty handsome things anyway to come from the backwoods.' So I was encouraged to leave home and go at his direction to the state fair when it was being held in Madison.

When I told father that I was about to leave home, and inquired whether, if I should happen to be in need of money, he would send me a little, he said, 'No. Depend entirely on yourself.' Good advice, I suppose, but surely needlessly severe for a bashful home-loving boy who had worked so hard. I had the gold sovereign that my grandfather had given me when I left Scotland, and a few dollars, perhaps ten,
that I had made by raising a few bushels of grain on a little patch of sandy, abandoned ground. So when I left home to try the world I had only fifteen dollars in my pocket.

Strange to say, father carefully taught us to consider ourselves very poor worms of the dust, conceived in sin, and so forth, and devoutly believed that quenching every spark of pride and self-confidence was a sacred duty, without realizing that in so doing he might, at the same time, be quenching everything else. Praise he considered most venomous, and tried to assure me that when I was fairly out in the wick- ed world, making my own way, I would soon learn that, although I might have thought him a hard taskmaster at times, strangers were far harder. On the contrary, I found no lack of kind-ness and sympathy. All the baggage I carried was a package made up of the first train I had ever waited for.

As the aching parting from mother and my sisters was of course hard to bear. Father let David drive me down to Pardee village, a place I had never before seen, though it is only nine miles south of the Hickory Hill farm. When we arrived at the village tavern it seemed deserted. Not a single person was in sight. I set my clock on the rickety platform. David said good-bye, and started for home, leaving me alone in the world. The grinding noise made by the wagon in turning short brought out the landlord, and the first thing that caught his eye was my strange bundle. Then he looked at me and said, ‘Hello, young man, what’s this?’

‘Machines,’ I said, ‘for keeping time, and getting up in the morning, and so forth.’

‘Well! Well! That’s a mighty queer get-up. You must be a Down-East Yankee. Where did you get the pattern for such a thing?’ ‘In my head,’ I said.

Some one down the street happened to notice the landlord looking intently at something and come up to see what it was. Three or four people in that little village formed an attractive crowd, and in fifteen or twenty minutes the greater part of the population of Pardee village stood gazing in a circle around my strange hickory belongings. I kept outside of the circle to avoid being seen, and had the advantage of hearing the remarks without being embarrassed.

I stayed overnight at this little tavern, waiting for a train. In the morning I went to the station, and set my bundle on the platform. Along came the thudding train, a glorious sight; the first train I had ever waited for. When the conductor saw my queer baggage, he cried, ‘Hello! What have we here?’

‘Inventions for keeping time, early rising, and so forth. May I take them into the car with me?’

‘You can take them where you like,’ he replied, ‘but you had better give them to the baggage-master. If you take them into the car they will draw a crowd and might get broken.’

So I gave them to the baggage-master, and made haste to ask the conductor whether I might ride on the engine. He good-naturedly said, ‘Yes, it’s the right place for you. Run ahead, and tell the engineer what I say.’ But the engineer bluntly refused to let me on, saying, ‘It don’t matter what the conductor told you. I say you can’t ride on my engine.’

By this time the conductor, standing ready to start his train, was watching to see what luck I had, and when he saw me returning came ahead to meet me.

‘The engineer won’t let me on,’ I reported.

‘Won’t he?’ said the kind conductor. ‘Oh, I guess he will. You come down with me.’ And so he actually took the time and patience to walk the length of that long train to get me on to the engine.

‘Charlie,’ said he, addressing the engineer, ‘don’t you ever take a passenger?’

‘Very seldom,’ he replied.

‘Anyhow, I wish you would take this young man on. He has the strangest machines in the baggage car I ever saw in my life. I believe he could make a locomotive. He wants to see the engine running. Let him on.’ Then, in a low whisper, he told me to jump on, which I did gladly, the engineer offering neither encouragement nor objection.

As soon as the train was started the engineer asked what the ‘strange thing’ the conductor spoke of really was.

‘Only inventions for keeping time, getting folks up in the morning, and so forth,’ I hastily replied; and before he could ask any more questions I asked permission to go outside of the cab to see the machinery. He kindly granted, adding, ‘Be careful not to fall off, and when you hear me whistling for a station you come back, because if it is reported against me to the superintendent that I allow boys to run all over my engine, I might lose my job.’

Assuring him that I would come back promptly, I went out and walked along the footboard on the side of the boiler, watching the magnificent machine rushing through the landscape as if glorifying in its strength like a living creature. While seated on the cow-catcher platform I seemed to be fairly flying, and the wonderful display of power, and motion was enchanting. This was the first time I had ever been on a train, much less a locomotive, since I had left Scotland. When I got to Madison I thanked the kind conductor and engineer for my glorious ride, inquired the way to the fair, shoul­dered my inventions, and walked to the fair-ground.

When I applied for an admission ticket at a window by the gate I told the agent that I had something to exhibit.

‘What is it?’ he inquired.

‘Well, here it is. Look at it.’

When I inquired of the agent where such things as mine should be exhibited, he said, ‘You see that building up on the hill with a big flag on it? That’s the Fine Arts Hall and it’s just the place for your wonderful invention.’

So I went up to the Fine Arts Hall and looked in, wondering if they would allow wooden things in so fine a place.

I was met at the door by a dignified gentleman who greeted me kindly and said, ‘Young man, what have we got here?’

‘Two clocks and a thermometer,’ I replied.

‘Did you make these? They look wonderfully beautiful and novel and must I think prove the most interesting feature of the fair.’

‘Where shall I place them?’ I inquired.

‘Just look around, young man, and choose the place you like best, whether it is occupied or not. You can have your pick of all the building, and a carp­enter to make the necessary shelves and assist you in every way possible.’

So I quickly had a shelf made large enough for all of them, went out on the hill and picked up some glacial boulders of the right size for weights, and in fifteen or twenty minutes the clocks were...
running. They seemed to attract more

attention than anything else in the hall.

I got lots of praise from the crowd and

the newspaper reporters. The local press

reports were copied into the Eastern

papers. It was considered wonderful

that a boy on a farm had been able

to invent and make such things, and

almost every spectator foretold good

fortune. But I had been so lectured by

my father to avoid praise, above all things,

that I was afraid to read those kind

newspaper notices, and never clipped

out or preserved any of them, just

glanced at them, and turned away my

eyes from beholding vanity, and so

forth. These inventions, 

though of little importance, opened all

turner in the University

of Wisconsin at the age of eleven years

(excepting one short term of a couple

of months at a district school), because

I could not be spared from the farm

work. After hearing my story the kind

professor welcomed me to the glorious

university — next, it seemed to me, to

the Kingdom of Heaven. After a few

weeks in the preparatory department,

I entered the Freshman class. In Latin

I found that one of the books in use I

had already studied in Scotland. So

after an interruption of a dozen years

I began my Latin over again where I

had left off; and strange to say, most of it

came back to me, especially the gram-

mar which I had committed to memory

at the Dunbar Grammar School.

During the four years that I was in

the university I earned enough in the

harvest-fields during the long summer

vacations to carry me through the bal-

ance of each year, working very hard,

cutting with a cradle four acres of

wheat a day, and helping to put it in

the shock. But having to buy books

and paying I think thirty-two dollars

a year for instruction, and occasionally

buying acids and retorts, glass tubing,

bell-glasses, flasks, and so forth, I had

to cut down expenses for board now

and then to half a dollar a week.

One winter I taught school ten miles

north of Madison, earning much-needed

money at the rate of twenty dollars

a month, 'boarding round,' and keep-

ing up my university work by study-

ing at night. As I was not then well

enough off to own a watch, I used one

of my hickory clocks, not only for keep-

ing time, but for starting the school-fire

in the cold mornings, and regulating

time classes. I carried it out on my

shoulder to the old log schoolhouse, and

set it to work on a little shelf nailed to

one of the knotty, bulging logs. The

winter was very cold, and I had to go

to the schoolhouse and start the fire

about eight o'clock, to warm it before

the arrival of the scholars. This was a

rather trying job, and one that my

clock might easily be made to do.

Therefore, after supper one evening, I

told the head of the family with whom

I was boarding that if he would give me

a candle I would go back to the school-

house and make arrangements for light-

ing the fire at eight o'clock, without

my having to be present until time to

open the school at nine. He said, 'Oh,

young man, you have some curious

things in the school-room, but I don't

think you can do that.' I said, 'Oh,

yes! It's easy'; and in hardly more

than an hour the simple job was com-

pleted.

I had only to place a teaspoonful

of powdered chloride of potash and

sugar on the stove hearth near a few

shavings and kindlings, and at the re-

quired time make the clock, through a

simple arrangement, touch the inflam-
mable mixture with a drop of sulphuric acid. Every evening after school was dismissed I shoveled out what was left of the fire into the snow, put in a little kindling, filled up the big stove-box with heavy oak wood, placed the lighting arrangement on the hearth, and set the clock to drop the acid at the hour of eight; all this requiring only a few minutes.

The first morning after I had made this simple arrangement I invited the doubting farmer to watch the old squat schoolhouse from a window that overlooked it, to see if a good smoke did not rise from the stovepipe. Sure enough, on the minute, he saw a tall column curling gracefully up through the frosty air; but, instead of congratulating me on my success, he solemnly shook his head and said in a hollow, lugubrious voice, 'Young man, you will be setting fire to the schoolhouse.' All winter long that faithful clock-fire never failed, and by the time I got to the schoolhouse the stove was usually red-hot.

At the beginning of the long summer vacations I returned to the Hickory Hill farm to earn the means in the harvest-fields to continue my university course, walking all the way to save railroad fares. And although I cradled four acres of wheat a day, I made the long hard sweaty day's work still longer and harder by keeping up my study of plants. At the noon hour I collected a large handful, put them in water to keep them fresh, and after supper got to work on them, and sat up till after midnight, analyzing and classifying, thus leaving only four hours for sleep; and by the end of the first year after taking up botany I knew the principal flowering plants of the region.

I received my first lesson in botany from a student by the name of Griswold who is now county judge of the county of Waukesha, Wisconsin. In the university he was often laughed at on account of his anxiety to instruct others, and his frequently saying with fine emphasis, 'Imparting instruction is my greatest enjoyment.' Nevertheless I still indulged my love of mechanical inventions. I invented a desk in which the books I had to study were arranged in order at the beginning of each term. I also made a bed which set me on my feet every morning at the hour determined on, and in dark winter mornings just as the bed set me on the floor it lighted a lamp. Then, after the minutes allowed for dressing had elapsed, a click was heard and the first book to be studied was pushed up from a rack below the top of the desk, thrown open, and allowed to remain there the number of minutes required. Then the machinery closed the book and allowed it to drop back into its stall; then moved the rack forward and threw up the next in order, and so on, all the day being divided according to the times of recitation, and the time required and allotted to each study. Besides this, I thought it would be a fine thing in the summer-time when the sun rose early, to dispense with the clock-controlled bed-machinery, and make use of sunbeams instead. This I did simply by taking a lens out of my small spy-glass, fixing it on a frame on the sill of my bedroom window, and pointing it to the sunrise; the sunbeams focused on a thread burned it through, allowing the bed-machinery to put me on my feet. When I wished to get up at any given time after sunrise I had only to turn the pivoted frame that held the lens the requisite number of degrees or minutes. Thus I took Emerson's advice and hitched my dumping-wagon bed to a star.

Although I was four years at the university, I did not take the regular course of studies, but instead picked out what I thought would be most useful to me, particularly chemistry, which opened a new world, and mathematics and physics, a little Greek and Latin, botany and geology. I was far from satisfied with what I had learned, and should have stayed longer. Anyhow I wandered away on a glorious botanical and geological excursion, which has lasted nearly fifty years and is not yet completed, always happy and free, poor and rich, without thought of a diploma or of making a name, urged on and on through endless inspiring Godful beauty.

The top of a hill on the north side of Lake Mendota I gained a last wistful lingering view of the beautiful university grounds and buildings where I had spent so many hungry and happy and hopeful days. There with streaming eyes I bade my blessed Alma Mater farewell. But I was only leaving one university for another, the Wisconsin University for the University of the Wilderness.

(The End.)