

III

JANUARY, 1856

(ÆT. 38)

Jan. 1. Speaking of foxes, J. Farmer told me last evening that some time ago Sherman Barrett's folks heard a squealing, and, running up, saw a fox leap out of the pen with a sucking-pig in his mouth and escape with it. Farmer says they commonly take the dead lambs from the fields, though most dogs will not.

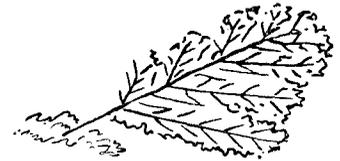
P. M. — To Walden.

Walden is covered with white snow ice six inches thick, for it froze while it was snowing, though commonly there is a thin dark beneath. This is now, therefore, bare, while the river, which was frozen before, is covered with snow. A very small patch of Walden, frozen since the snow, looks at a little distance exactly like open water by contrast with the snow ice, the trees being reflected in it, and indeed I am not certain but a *very small* part of this patch was water.

The track-repairers have shovelled four little paths by the sides of the rails, all the way from the depot to Walden. As I went by the engine-saw great icicles four feet long hanging eastern caves, like slender pointed last half blown aside by the wind: more. By the side of the Deep Cut tracks of probably tree sparrows weeds, and of partridges.



On the ice at Walden are very beautiful great leaf crystals in great profusion. The ice is frequently thickly covered with them for many rods. They seem to be connected with the rosettes, — a running together of them. They look like a loose web of small white feathers springing from a tuft of down, for their shafts are lost in a tuft of fine snow like the down about the shaft of a feather, as if a feather bed had been shaken over the ice. They are, on a close examination, surprisingly perfect leaves, like ferns, only very broad for their length and commonly more on one side the midrib than the other. They are from an inch to an inch and a half long and three quarters wide, and slanted, where I look, from the southwest. They have, first, a very distinct midrib, though so thin that they cannot be taken up; then, distinct ribs branching from this, commonly opposite, and minute ribs springing again from these last, as in many ferns, the last running to each crenation in the border. How much further they are subdivided, the naked eye cannot discern. They are so thin and fragile that they melt under your breath while looking closely at them. A fisherman says they were much finer in the morning. In other places the ice is strewn with a different kind of frostwork in little patches, as if oats had been spilled, like fibres of asbestos rolled, a half or three quarters of an inch long and an eighth or more wide. Here and there patches of them a foot or two over. Like some boreal grain spilled.



Here are two fishermen, and one has preceded them. They have not had a bite, and know not why. It has been a clear winter day.

On the north shore, near the railroad, I see the tracks apparently of a white rabbit, afterward many tracks of gray rabbits, and where they had squatted under or rather by the side of an alder stem or the like, and left many balls in the pure snow. Many have run in one course. In the midst of them I see the track of a large rabbit, probably a white one, which was evidently on the full spring. Its tracks are four feet apart, and, unlike the others, which are on the surface even of this light snow, these break through deep, making a hole six inches over. Why was this one in such haste? I conclude to trace him back and find out. His bounds grow greater and greater as I go back, now six feet quite, and a few rods further are the tracks of a fox (*possibly* a dog, but I think not) exactly on the trail!¹ A little further, where the rabbit was ascending a considerable slope, through this snow nearly a foot deep, the bounds measure full seven feet, leaving the snow untouched for that space between. It appeared that the fox had started the rabbit from a bank on which it was resting, near a young hemlock, and pursued it only a dozen rods up the hill, and then gave up the chase,—and well he might, methought.

Goodwin says that the white rabbit never burrows, but the gray regularly. Yet he once knew a white one to earth itself.

¹ All doubtful.

In a rabbit's track  the two fore feet are the furthest apart, thus:

This chase occurred probably in the night, either the last or night before, when there was not a man within a mile; but, treading on these very deep and distinct tracks, it was as if I had witnessed it, and in imagination I could see the sharp eyes of the crafty fox and the palpitating breast of the timorous rabbit, listening behind. We unwittingly traverse the scenery of what tragedies! Every square rod, perchance, was the scene of a life or death struggle last night. As you track the rabbit further off, its bounds becoming shorter and shorter, you follow also surely its changing moods from desperate terror till it walks calmly and reassured over the snow without breaking its very slight crust,—perchance till it gnaws some twig composedly,—and in the other direction you trace the retreating steps of the disappointed fox until he has forgotten this and scented some new game, maybe dreams of partridges or wild mice. Your own feelings are fluttered proportionably.¹

Jan. 2. Probably the coldest morning yet, our thermometer 6° below zero at 8 A. M.; yet there was quite a mist in the air.² The neighbors say it was 10° below zero at 7 A. M.

P. M. — To Walden.

As for the fox and rabbit race described yesterday, I find that the rabbit was going *the other way*, and pos-

¹ *Vide* [below].

² This mist for several mornings after the first deep snow.

sibly the fox was a rabbit, for, tracing back the rabbit, I found that it had first been walking with alternate steps, fox-like.

There were many white rabbits' tracks in those woods, and many more of the gray rabbit, but the former broke through and made a deep track, except where there was a little crust on the south slope, while the latter made but a faint impression on the surface. The latter run very much in the same path, which is well trodden, and you would think you were in the midst of quite a settlement of them.

Crossing the railroad at the Heywood meadow, I saw some snow buntings rise from the side of the embankment, and with surging, rolling flight wing their way up through the cut. I walked through the westernmost Heywood swamp. There are the tracks of many rabbits, both gray and white, which have run about the edges of these swamps since this snow came, amid the alders and shrub oaks, and one white one has crossed it. The cat-tails rise high above the snow in the swamp, their brown heads bursting on one side into creamy (?) billows and wreaths, or partly bare. Also the rattlesnake grass is still gracefully drooping on every side, with the weight of its seeds, — a rich, wild grain. And other wild grasses and rushes rise above the snow. There is the wild-looking remnant of a white pine, quite dead, rising fifteen or twenty feet, which the woodpeckers have bored; and it is still clad with sulphur lichens and many dark-colored tufts of cetraria in the forks of its branches.

Returning, I saw, near the back road and railroad,

a small flock of eight snow buntings feeding on the seeds of the pigweed, picking them from the snow, — apparently flat on the snow, their legs so short, — and, when I approached, alighting on the rail fence. They were pretty black, with white wings and a brown crescent on their breasts. They have come with this deeper snow and colder weather.

Jan. 3. Snows again. About two inches have fallen in the night, but it turns to a fine mist. It was a damp snow.

P. M. — To Hill.

The snow turned to a fine mist or mizzling, through which I see a little blue in the snow, lurking in the ruts.

In the river meadows and on the (perhaps moist) sides of the hill, how common and conspicuous the brown spear-heads of the hardhack, above the snow, and looking black by contrast with it!

Just beyond the Assabet Spring I see where a squirrel, gray or red, dug through the snow last night in search of acorns. I know it was last night, for it was while the last snow was falling, and the tracks are partly filled by it; they are like this:  This squirrel has burrowed to the  ground in many places within a few yards, probing the leaves for acorns in various directions, making a short burrow under the snow, sometimes passing under the snow a yard and coming out at another place; for, though it is somewhat hardened on the surface by the nightly freezing and the hail, it is still quite soft and light beneath next the earth, and a squirrel or mouse can burrow

very fast indeed there. I am surprised to find how easily I can pass my hand through it there. In many places it has dropped the leaves, etc., about the mouth of the hole. (The whole snow about ten inches deep.) I see where it sat in a young oak and ate an acorn, dropping the shells on the snow beneath, for there is no track to the shells, but only to the base of the oak. How independently they live, not alarmed, though the snow be two feet deep!

Now, when all the fields and meadows are covered deep with snow, the warm-colored shoots of osiers, red and yellow, rising above it, remind me of flames.

It is astonishing how far a merely well-dressed and good-looking man may go without being challenged by any sentinel. What is called good society will bid high for such.

The man whom the State has raised to high office, like that of governor, for instance, from some, it may be, honest but less respected calling, cannot return to his former humble but profitable pursuits, his old customers will be so shy of him. His ex-honorableness stands seriously in his way, whether he is a lawyer or a shopkeeper. He can't get ex-honored. So he becomes a sort of State pauper, an object of charity on its hands, which the State is bound in honor to see through and provide still with offices of similar respectability, that he may not come to want. A man who has been President becomes the Ex-President, and can't travel or stay at home anywhere but men will persist in paying respect to his ex-ship. It is cruel

to remember his deeds so long. When his time is out, why can't they let the poor fellow go?

*Jan. 4.*¹ A clear, cold day.

P. M. — To Walden to examine the ice.

I think it is only such a day as this, when the fields on all sides are well clad with snow, over which the sun shines brightly, that you observe the blue shadows on the snow. I see a little of it to-day.

December 29th there were eight or ten acres of Walden still open. That evening it began to snow and snowed all night, and the remainder of the pond was frozen on that [and] the succeeding night. But on January 1st I was surprised to find all the visible ice snow ice, when I expected that only the eight or ten acres would be; but it appeared that the weight of the snow had sunk the ice already formed and then partly dissolved in the water, which rose above it and partly was frozen with it. The whole ice January 1st was about six inches thick, and I should have supposed that over the greater part of the pond there would be a clear ice about two inches thick on the lower side, yet, where I cut through near the shore, I distinguished two kinds of ice, the upper two and a half inches thick and evidently snow ice, the lower about four inches thick and clearer, yet not remarkably clear.

Some fishermen had, apparently by accident, left two of their lines there, which were frozen in. I could see their tracks leading from hole to hole, where they

¹ [The first page of the manuscript journal which begins here is headed "The Long, Snowy Winter."]

had run about day before yesterday, or before the snow, and their dog with them. And the snow was stained with tobacco-juice. They had had lines set in two or three distant coves. They had, apparently, taken no fish, for they had cut no well to put them in. I cut out the lines, the ice being about an inch thick around them, and pulled up a fine yellow pickerel which would weigh two pounds or more. At first I thought there was none, for he was tired of struggling, but soon I felt him. The hook had caught in the outside of his jaws, and the minnow hung entire by his side. It was very cold, and he struggled but a short time, not being able to bend and quirk his tail; in a few minutes became quite stiff as he lay on the snowy ice. The water in his eyes was frozen, so that he looked as if he had been dead a week. About fifteen minutes after, thinking of what I had heard about fishes coming to life again after being frozen, on being put into water, I thought I would try it. This one was to appearance as completely dead as if he had been frozen a week. I stood him up on his tail without bending it. I put him into the water again without removing the hook. The ice melted off, and its eyes looked bright again; and after a minute or two [I] was surprised by a sudden, convulsive quirk of the fish, and a minute or two later by another, and I saw that it would indeed revive, and drew it out again. Yet I do not believe that if it had been frozen solid through and through it would have revived, but only when it is superficially frozen.

This reminded me of the pickerel which I caught here under similar circumstances for Peter Hutchin-

son, and thrust my mittened hands in after. When I put this pickerel in again after half an hour, it did not revive, but I held it there only three or four minutes, not long enough to melt the ice which encased it.

Another man had passed since the last snow fell, and pulled up at least one of the lines. I knew it was to-day and not yesterday by the character of his track, for it was made since the stiff crust formed on this snow last night, a broad depression cracking the crust around; but yesterday it was comparatively soft and moist.

Aunt says that Mr. Hoar tells a story of Abel Davis to this purport: He had once caught a pickerel in the brook near his house and was overheard to say, "Why, who 'd 'a' thought to find you here in Temple Brook. With a slice of pork you 'll make Rhody" (or whatever the name of his wife was) "and I a good meal." He probably was not much of a fisherman, and could hardly contain himself for joy.

It is snapping cold this night (10 P. M.). I see the frost on the windows sparkle as I go through the passageway with a light.

Jan. 5. One of the coldest mornings. Thermometer -9° , say some.

P. M. — Up river to Hubbard's Bridge.

It has been trying to snow all day, but has not succeeded; as if it were too cold. Though it has been falling all day, there has not been enough to whiten the coat of the traveller. I come to the river, for here it is the best walking. The snow is not so deep over the ice. Near the middle, the superincumbent snow

has so far been converted into a coarse snow ice that it will bear me, though occasionally I slump through intervening water to another ice below. Also, perhaps, the snow has been somewhat blown out of the river valley. At any rate, by walking where the ice was frozen last, or over the channel, I can get along quite comfortably, while it is hard travelling through this crusted snow in the fields. Generally, to be sure, the river is but a white snow-field, indistinguishable from the fields, but over the channel there is a thread, commonly, of yellowish porous-looking snow ice.

The hardhack above the snow has this form:
Should not that meadow where the first bridge was built be called Hardhack Meadow? Also there are countless small ferns, with terminal leaflet only left on, still rising above the snow, — for I notice the herbage of the riverside now, — thus, like the large ones in swamps:



What with the grasses — that coarse, now straw-colored grass — and the stems of the button-bushes, the snow about the button-bushes forms often broad, — several rods broad, — low mounds, nearly burying the bushes, along which the tops of the button-bushes and that broad-bladed, now straw-colored grass still rise, with masses of this, now black-looking balls, erect or



dangling. The black willows have here and there still a very few little curled and crispy leaves.

The river is last open, methinks, just below a bend,¹ as now at the Bath Place and at Clamshell Hill; and quite a novel sight is the dark water there. How little locomotive now look the boats whose painted sterns I just detect where they are half filled with ice and almost completely buried in snow, so neglected by their improvident owners, — some frozen in the ice, opening their seams, some drawn up on the bank. This is not merely improvidence; it is ingratitude.

Now and then I hear a sort of creaking twitter, maybe from a passing snow bunting. This is the weather for them. I am surprised that Nut Meadow Brook has overflowed its meadow and converted it into that coarse yellowish snow ice. Otherwise it had been a broad snow-field, concealing a little ice under it. There is a narrow thread of open water over its channel.

The thin snow now driving from the north and lodging on my coat consists of those beautiful star crystals, not cottony and chubby spokes, as on the 13th December, but thin and partly transparent crystals. They are about a tenth of an inch in diameter, perfect little wheels with six spokes without a tire, or rather with six perfect little leaflets, fern-like, with a distinct straight and slender midrib, raying from the centre. On each side of each midrib there is a transparent thin blade with a crenate edge, thus:  How full of the creative genius is the air in which these are generated! I should hardly admire more if real stars fell and

¹ Vide the 27th inst.

lodged on my coat. Nature is full of genius, full of the divinity; so that not a snowflake escapes its fashioning hand. Nothing is cheap and coarse, neither dewdrops nor snowflakes. Soon the storm increases, — it was already very severe to face, — and the snow comes finer, more white and powdery. Who knows but this is the original form of all snowflakes, but that when I observe these crystal stars falling around me they are but just generated in the low mist next the earth? I am nearer to the source of the snow, its primal, auroral, and golden hour or infancy, but commonly the flakes reach us travel-worn and agglomerated, comparatively without order or beauty, far down in their fall, like men in their advanced age.

As for the circumstances under which this phenomenon occurs, it is quite cold, and the driving storm is bitter to face,¹ though very little snow is falling. It comes almost horizontally from the north. Methinks this kind of snow never falls in any quantity.²

A divinity must have stirred within them before the crystals did thus shoot and set. Wheels of the storm-chariots. The same law that shapes the earth-star shapes the snow-star. As surely as the petals of a flower are fixed, each of these countless snow-stars comes whirling to earth, pronouncing thus, with emphasis, the number six. Order, *κόσμος*.³

On the Saskatchewan, when no man of science is there to behold, still down they come, and not the less

¹ *Vide* Mar. 19th.

² Yes, it does.

³ This was the beginning of a storm which reached far and wide and elsewhere was more severe than here.

fulfill their destiny, perchance melt at once on the Indian's face. What a world we live in! where myriads of these little disks, so beautiful to the most prying eye, are whirled down on every traveller's coat, the observant and the unobservant, and on the restless squirrel's fur, and on the far-stretching fields and forests, the wooded dells, and the mountain-tops. Far, far away from the haunts of man, they roll down some little slope, fall over and come to their bearings, and melt or lose their beauty in the mass, ready anon to swell some little rill with their contribution, and so, at last, the universal ocean from which they came. There they lie, like the wreck of chariot-wheels after a battle in the skies. Meanwhile the meadow mouse shoves them aside in his gallery, the schoolboy casts them in his snowball, or the woodman's sled glides smoothly over them, these glorious spangles, the sweeping of heaven's floor. And they all sing, melting as they sing of the mysteries of the number six, — six, six, six. He takes up the water of the sea in his hand, leaving the salt; He disperses it in mist through the skies; He recollects and sprinkles it like grain in six-rayed snowy stars over the earth, there to lie till He dissolves its bonds again.¹

Found on a young red maple near the water, in Hubbard's riverside grove, a nest, perhaps a size bigger than a summer yellowbird's, chiefly of bark shreds, bound and lined with lint and a little of something like dried hickory blossoms.²

A little feather, yellow at the extremity, attached to the

¹ [Channing, p. 112.]

² No.

outside. It was on a slanting twig or small branch about eighteen feet high, and I shook it down. The rim of fine shreds of grape-vine bark chiefly, the outer edge being covered with considerable of the droppings of the young birds. I thought it the same kind with that found December 30th *ult.* Can it be a red-start, or is [it] one of the vireos possibly? or a gold-finch? which would account for the yellow-tipped feather.

In the blueberry swamp near by, which was cut down by the ice, another, perhaps a little smaller, of very similar materials but more of the hickory (??) blossoms on the outside beneath, but this was in a nearly upright fork of a red maple about seven feet high. The little nest of June 26th, 1855, looks like the inside of one of these. Upon these two nests found to-day and on that of the 30th December, I find the same sort of dried catkin (apparently *not* hickory) connected with a little sort of brown bud, maybe birch or alder. This makes me suspect they may be all one kind, though the last was in an upright fork and had no droppings on it.

Jan. 6. High wind and howling and driving snow-storm all night, now much drifted. There is a great drift in the front entry and at the crack of every door and on the window-sills. Great drifts on the south of walls.

Clears up at noon, when no vehicle had passed the house.

Frank Morton has brought home, and I opened,

that pickerel of the 4th. It is frozen solid. Yellow spawn as big as a pin-head, with smaller between, enwraps its insides the whole length, half an inch thick. It must spawn very early then. I find in its gullet, or paunch, or maw (the long white bag), three young perch, one of them six inches long, and the tail of a fourth. Its belly was considerably puffed out. Two of the perch lay parallel, side by side, of course head downward, in its gullet (?). The upper and largest perch was so high that he was cut in two in the middle in cutting off the head. And yet it was caught in endeavoring to swallow another large minnow! This is what you may call voracity.

P. M. — To Drifting Cut.

The snow is now probably more than a foot deep on a level.

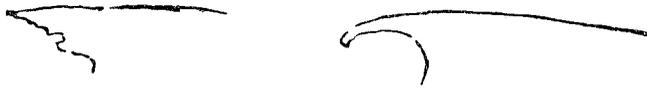
While I am making a path to the pump, I hear hurried *rippling* notes of birds, look up, and see quite a flock of snow buntings coming to alight amid the currant-tops in the yard. It is a sound almost as if made with their wings. What a pity our yard was made so tidy in the fall with rake and fire, and we have now no tall crop of weeds rising above this snow to invite these birds!

I am come forth to observe the drifts. They are, as usual, on the south side of the walls and fences and, judging from the direction of their ridges, the wind was due north. Behind Monroe's tight board fence it is a regularly swelled, unbroken bank, but behind the wall this side carved into countless scallops, perforations, scrolls, and copings. An open wall is, then,

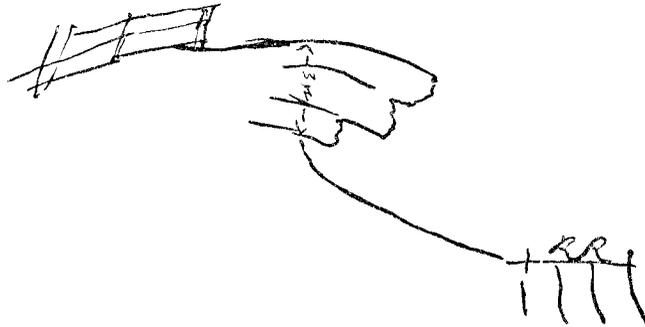
the best place for a drift. Yet these are not remarkably rich. The snow was perhaps too dry. Perhaps six more inches on a level has fallen, or more. It has not lodged on the trees.

Now, at 4.15, the blue shadows are very distinct on the snow-banks.

On the north side of the Cut, above the crossing, the jutting edges of the drift are quite handsome upon the bank. The snow is raised twelve feet above the track, and it is all scalloped with projecting eaves or copings, like turtle-shells.



They project from three to five feet, and I can stand under them. They are in three or four great layers, one lapping over another like the coarse edge of a shell. Looking along it, they appear somewhat thus: —



Often this coping has broken by its own weight, and great blocks have fallen down the bank, like smoothed

blocks of white marble. The exquisite purity of the snow and the gracefulness of its curves are remarkable.

Around some houses there is not a single track. Neither man, woman, nor child, dog nor cat nor fowl, has stirred out to-day. There has been no meeting. Yet this afternoon, since the storm, it has not been very bad travelling.

Jan. 7. At breakfast time the thermometer stood at -12° . Earlier it was probably much lower. Smith's was at -24° early this morning. The latches are white with frost at noon. They say there was yet more snow at Boston, two feet even.

They tell how I swung on a gown [?] on the stairway when I was at Chelmsford. The gown [?] gave way; I fell and fainted, and it took two pails of water to bring me to, for I was remarkable for holding my breath in those cases.

Mother tried to milk the cow which Father took on trial, but she kicked at her and spilt the milk. (They say a dog had bitten her teats.) Proctor laughed at her as a city girl, and then he tried, but the cow kicked him over, and he finished by beating her with his cow-hide shoe. Captain Richardson milked her warily, standing up. Father came home, and thought he would "brustle right up to her," for she needed much to be milked, but suddenly she lifted her leg and "struck him fair and square right in the muns," knocked him flat, and broke the bridge of his nose, which shows it yet. He distinctly heard her hoof rattle on his nose. This "started the claret," and, without stanching the blood,

he at once drove her home to the man he had her of. She ran at some young women by the way, who saved themselves by getting over the wall in haste.

Father complained of the powder in the meeting-house garret at town meeting, but it did not get moved while we lived there. Here he painted over his old signs for guide-boards, and got a fall when painting Hale's (?) factory. Here the bladder John was playing with burst on the hearth. The cow came into the entry after pumpkins. I cut my toe, and was knocked over by a hen with chickens, etc., etc.

Mother tells how, at the brick house, we each had a little garden a few feet square, and I came in one day, having found a potato just sprouted, which by her advice I planted in my garden. Ere long John came in with a potato which he had found and had it planted in his garden, — "Oh, mother, I have found a potato all sprouted. I mean to put it in my garden," etc. Even Helen is said to have found one. But next I came crying that somebody had got my potato, etc., etc., but it was restored to me as the youngest and original discoverer, if not inventor, of the potato, and it grew in *my* garden, and finally its crop was dug by myself and yielded a dinner for the family.

I was kicked down by a passing ox. Had a chicken given me by Lily — Hannah — and peeped through the keyhole at it. Caught an eel with John. Went to bed with new boots on, and after with cap. "Rasselas" given me, etc., etc. Asked P. Wheeler, "Who owns all the land?" Asked Mother, having got the medal for geography, "Is Boston in Concord?" If I had gone to

Miss Wheeler a little longer, should have received the chief prize book, "Henry Lord Mayor," etc., etc.

P. M. — Up river.

The snow is much deeper on the river than it was, — on an average, eight or nine inches. The cold weather has brought the crows, and for the first time this winter I hear them cawing amid the houses. I noticed yesterday, from three to six feet behind or northwest of a small elm, a curve in a drift answering to the tree, showing how large an eddy it had produced. The whole surface of the snow on fields and river is composed now of flat, rough little drifts, like the surface of some rough slaty rocks. Hardly anywhere is the ice visible now.

It is completely frozen at the Hubbard's Bath bend now, — a small strip of dark ice, thickly sprinkled with those rosettes of crystals, two or three inches in diameter, this surrounded by a broad border of yellowish spew. The water has oozed out from the thinnest part of the black ice, and I see a vapor curling up from it. There is also much vapor in the air, looking toward the woods. I go along the edge of the Hubbard Meadow woods, the north side, where the snow is gathered, light and up to my middle, shaking down birds' nests. Returning, just before sunset, the few little patches of ice look green as I go from the sun (which is in clouds). It is probably a constant phenomenon in cold weather when the ground is covered with snow and the sun is low, morning or evening, and you are looking from it.

I see birch scales (bird-like) on the snow on the river

more than twenty rods south of the nearest and only birch, and trace them north to it.

Jan. 8. P. M. — To Walden.

The snow is about a foot, or probably a little more, deep on a level, and considerably drifted, but on the pond it is not more than five inches deep on an average, being partly turned into snow ice by the sinking of the ice, and perhaps partly blown off.

Many catbird-nests about the pond. In apparently one I see a snake's slough interwoven. The leaves of red oak shrubs are still quite bloody-colored. All of the pitch pine cones that I see, but one, are open.¹ I see prying into the black fruit of the alder, along the pond-side, a single probably lesser redpoll (?). Yellowish breast and distinct white bar on wing.

Monroe is fishing there. As usual, a *great* pickerel had bitten and ran off, and was lost, he supposed, among the brush by the shore. He tells of an eel up the North Branch that weighed seven pounds; also that George Melvin, spearing one night, speared a large owl (probably cat owl) that sat near by.

For a couple of days the cars have been very much delayed by the snow, and it is now drifting somewhat. The fine dry snow is driving over the fields like steam, if you look toward the sun, giving a new form to the surface, spoiling the labor of the track-repairers, gradually burying the rails. The surface of the snow on the pond is finely scored in many places by the oak leaves which have been blown across it. They have furrowed deeper

¹ *Vide 22d inst.*

than a mouse's track and might puzzle a citizen. They are more frisky than a squirrel. Many of the young oaks appear not to have lost any leaves yet. They are so full of them that they still sustain some masses of snow, as if there were birds' nests for a core. I see the great tracks of white rabbits that have run and frisked in the night along the pond-side.

Jan. 9. Clear, cold morning. Smith's thermometer -16° ; ours -14° at breakfast time, -6° at 9 A. M.

3 P. M. — To Beck Stow's.

The thermometer at $+2^{\circ}$. When I return at 4.30, it is at -2° . Probably it has been below zero *far* the greater part of the day. I meet choppers, apparently coming home early on account of the cold. I wade through the swamp, where the snow lies light eighteen inches ¹ deep on a level, a few leaves of andromedas, etc., peeping out. (I am a-birds'-nesting.) The mice have been out and run over it. I see one large bush of winter-berries still quite showy, though somewhat discolored by the cold. The rabbits have run in paths about the swamp. Go now anywhere in the swamp and fear no water. The fisherman whom I saw on Walden last night will find his lines well frozen in this morning.

In passing through the deep cut on the new Bedford road, [I saw] that a little sand, which was pretty coarse, almost gravel, had fallen from the bank, and was blown over the snow, here and there. The surface of the snow was diversified by those slight drifts, or perhaps cliffs, which are left a few inches high (like the fracture of

¹ Two feet. *Vide* Jan. 12th.

slate rocks), with a waved outline, and all the sand was



collected in waving lines just on the edge of these little drifts, in ridges, maybe an eighth of an inch high. This may help decide how those drifts (?) or cliffs (?)

are formed.¹

It has not been so cold throughout the day, before, this winter. I hear the boots of passing travellers squeak.

Jan. 10. The weather has considerably moderated; — 2° at breakfast time (it was — 8° at seven last evening); but this has been the coldest night probably. You lie with your feet or legs curled up, waiting for morning, the sheets shining with frost about your mouth. Water left by the stove is frozen thickly, and what you sprinkle in bathing falls on the floor ice. The house plants are all frozen and soon droop and turn black. I look out on the roof of a cottage covered a foot deep with snow, wondering how the poor children in its garret, with their few rags, contrive to keep their toes warm. I mark the white smoke from its chimney, whose contracted wreaths are soon dissipated in this stinging air, and think of the size of their wood-pile, and again I try to realize how they panted for a breath of cool air those sultry nights last summer. Realize it now if you can. Recall the hum of the mosquito.

¹ Yet when it blows and drifts again it presents a similar appearance.

It seems that the snow-storm of Saturday night was a remarkable one, reaching many hundred miles along the coast. It is said that some thousands passed the night in cars.

The kitchen windows were magnificent last night, with their frost sheaves, surpassing any cut or ground glass.

I love to wade and flounder through the swamp now,¹ these bitter cold days when the snow lies deep on the ground, and I need travel but little way from the town to get to a Nova Zembla solitude, — to wade through the swamps, all snowed up, untracked by man, into which the fine dry snow is still drifting till it is even with the tops of the water andromeda and half-way up the high blueberry bushes. I penetrate to islets inaccessible in summer, my feet slumping to the sphagnum far out of sight beneath, where the alder berry glows yet and the azalea buds, and perchance a single tree sparrow or a chickadee lisps by my side, where there are few tracks even of wild animals; perhaps only a mouse or two have burrowed up by the side of some twig, and hopped away in straight lines on the surface of the light, deep snow, as if too timid to delay, to another hole by the side of another bush; and a few rabbits have run in a path amid the blueberries and alders about the edge of the swamp. This is instead of a Polar Sea expedition and going after Franklin. There is but little life and but few objects, it is true. We are reduced to admire buds, even like the partridges, and bark, like the rabbits and mice, — the

¹ Remembering the walk of yesterday.

great yellow and red forward-looking buds of the azalea, the plump red ones of the blueberry, and the fine sharp red ones of the panicled andromeda, sleeping along its stem, the speckled black alder, the rapid-growing dogwood, the pale-brown and cracked blueberry, etc. Even a little shining bud which lies sleeping behind its twig and dreaming of spring, perhaps half concealed by ice, is object enough. I feel myself upborne on the andromeda bushes beneath the snow, as on a springy basketwork, then down I go up to my middle in the deep but silent snow, which has no sympathy with my mishap. Beneath the level of this snow how many sweet berries will be hanging next August!

This freezing weather I see the pumps dressed in mats and old clothes or bundled up in straw. Fortunate he who has placed his cottage on the south side of some high hill or some dense wood, and not on the middle of the Great Fields, where there is no hill nor tree to shelter it. There the winds have full sweep, and such a day as yesterday the house is but a fence to stay the drifting snow. Such is the piercing wind, no man loiters between his house and barn. The road-track is soon obliterated, and the path which leads round to the back of the house, dug this morning, is filled up again, and you can no longer see the tracks of the master of the house, who only an hour ago took refuge in some half-subterranean apartment there. You know only by an occasional white wreath of smoke from his chimney, which is at once snapped up by the hungry air, that he sits warming his wits there within, studying the almanac to learn how long it is before spring. But his

neighbor, who, only half a mile off, has placed his house in the shelter of a wood, is digging out of a drift his pile of roots and stumps, hauled from the swamp, at which he regularly dulls his axe and saw, reducing them to billets that will fit his stove. With comparative safety and even comfort he labors at this mine.

As for the other, the windows give no sign of inhabitants, for they are frosted over as if they were ground glass, and the curtains are down beside. The path is snowed up, and all tracks to and fro. No sound issues from within. It remains only to examine the chimney's nostrils. I look long and sharp at it, and fancy that I see some smoke against [the] sky there, but this [is] deceptive, for, as we are accustomed to walk up to an empty fireplace and imagine that we feel some heat from it, so I have convinced myself that I saw smoke issuing from the chimney of a house which had not been inhabited for twenty years. I had so vivid an idea of smoke curling up from a chimney's top that no painter could have matched my imagination. It was as if the spirits of the former inhabitants, revisiting their old haunts, were once more boiling a spiritual kettle below, — a small whitish-bluish cloud, almost instantly dissipated, as if the fire burned with a very clear flame, or else, the postmeridian hours having arrived, it were partially raked up, and the inhabitants were taking their siesta.

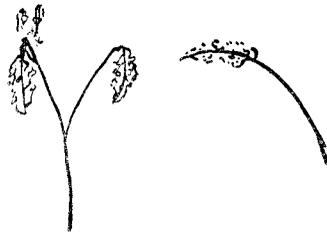
P. M. — Worked on flower-press.

Jan. 11. P. M. — To Walden.

Cold as the weather has been for some days, it [is]

melting a little on the south side of houses to-day for the first time for quite a number of days, though the 9th was the coldest day thus far, the thermometer hardly going above zero during the day. Yet whenever I have been to Walden, as January 4th, 8th, and to-day, I have found much water under the snow above the ice, though there is but about five inches, both snow and water, above the ice. January 4th was the coldest day that I have been there, and yet I slumped through the snow into water, which evidently was prevented from freezing at once by the snow. I think that you may find water on the ice thus at any time, however cold, and however soon it may freeze. Probably some of the overflow I noticed on the river a few days ago was owing to the weight of the snow, as there has been no thaw.

Observed that the smooth sumachs about the north side of the Wyman meadow had been visited by partridges and a great many of the still crimson berries were strewn on the snow.¹ There they had eaten them, perched on the twigs. Elsewhere they had tracked the snow from bush to bush, visiting almost every bush



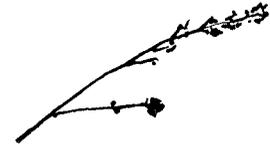
Sumachs

¹ The same next day on the other side the pond.

and leaving their traces. The mice, also, had run from the base of one sumach to that of another on all sides, though there was no entrance to the ground there. Probably they had climbed the

stems for berries. Most of the bunches now hang half broken off, by time, etc.¹

The lespedeza, now a very pale brown, looks thus:—



The sunsets, I think, are now particularly interesting. The colors of the west seem more than usually warm, perhaps by contrast with this simple snow-clad earth over which we look and the clear cold sky,—a sober but extensive redness, almost every night passing into a dun. There is nothing to distract our attention from it.

Monroe, who left his lines in Walden on the 8th, cut them out to-day, but he got no fish, though all his bait were gone.

The *January Sunsets*.

To-day I burn the first stick of the wood which I bought and did not get from the river. What I have still left of the river wood, added to what of it I reserve for other uses, would last me a week longer.

Animals that live on such cheap food as buds and leaves and bark and wood, like partridges and rabbits and wild mice, never need apprehend a famine.

I have not done wondering at that voracity of the pickerel,—three fresh perch and part of another in its maw! If there are a thousand pickerel in the pond, and they eat but one meal a day, there go a thousand perch or shiners for you out of this small pond. One year would require 365,000! not distinguishing frogs. Can it be so? The fishermen tell me that when they catch the most, the fish are fullest.

¹ See Jan. 30th.

Mother reminds me that when we lived at the Parkman house she lost a ruff a yard and a half long and with an edging three yards long to it, which she had laid on the grass to whiten, and, looking for it, she saw a robin tugging at the tape string of a stay on the line. He would repeatedly get it in his mouth, fly off and be brought up when he got to the end of his tether. Miss Ward thereupon tore a fine linen handkerchief into strips and threw them out, and the robin carried them all off. She had no doubt that he took the ruff.

It is commonly said that fishes are long-lived on account of the equable temperature of their element. The temperature of the body of Walden may perhaps range from 85° — perhaps at bottom much less — down to 32° , or 53° , while that of the air ranges from 100° down to -28° , or 128° , more than twice as much. Yet how large a portion of animal life becomes dormant or migrates in the winter! And on those that remain with us there is an increase of fur, and probably of down, corresponding to the increased cold. If there is no corresponding thickening of the integument or scales of fishes on the approach of winter, they would seem to enjoy no advantage over land animals. Beside their thick coats, most land animals seek some comparatively warm and sheltered place in which to sleep, but where do the fishes resort? They may sink to the bottom, but it is scarcely so warm there as at the bottom of a gray rabbit's or a fox's burrow. Yet the fish is a tender animal in respect to cold. Pull him out in the coldest weather, and he at once becomes encased in ice and as stiff as a stake, and a fox (?)

stands at his ease on the ice devouring him. Frogs, which, perchance, are equally tender, and must (?) come to the air occasionally, are therefore compelled [to] go into the mud and become dormant. They may be said to live there in a southern climate. Even the tough mud turtle possesses a southern constitution. He would snap in vain, and soon cease snapping, at the northwest wind when the thermometer is at 25° below zero. Wild mice and spiders and snow-fleas would be his superiors.

Jan. 12. Moderating, though at zero at 9 A. M.

P. M. — To Andromeda Swamps, measuring snow. It is a fortnight since we had about a foot of snowfall on two or three inches which was firmly crusted, and a week since about six inches fell upon the last, — I guess at these depths, — and we have had clear cold weather ever since. I carry a four-foot stick marked in inches, striking it down as far as it will go at every tenth step. First, beginning in the first field west of the railroad causeway, four to six rods from the railroad, and walking parallel with the railroad, — open fields north to south: —

[For table of measurements, see next page.]

	145	309		Then Trillium, a	
	19	10	10	11 thick, chiefly pine	
	11	8	8	8 wood, seventy-	
	14	9	8	10 five years old.	
	10	14	6	13 North to south.	
	7	15	8	12 9	8
	12	13	7	8 10	12
	9	22	9	12 13	8
	7	wall	10	14 fence) 10	11
apple	6	7	11	9 10	8
tree	7	6	9	7 wall	11
	9	7	11	10 20	11
	9	7	9	10 16	9
	10	7	422	10 598	8
	10	8	Then cross	7 73)728	9
	6	10	to east of	9 Average	10
	9	12	railroad,	14 say 10 ²	10
	145 ¹	9	six rods	9	7
		309	off, in	11	10
			Stow's	422	12
			meadow.	598	8
					9
					10
					11
					19)182 (say
					9½

Other things being equal, the snow should be deeper in woods than in open fields because the trunks of trees take up room there, but this may be more than balanced by what is dissipated on the branches.

¹ [A mistake in addition here. The column foots up 155.]

² Add 2 for ice at bottom to all the depths of snow to Feb. 12th, q. v.

Then sprout-land between railroad and Andromeda Pond, down-hill toward the west.

The first Andromeda Swamp from east to west. The snow in the swamp was within about three inches of the top of the *highest* andromeda bushes and was swelled about three or four inches higher there than between such. Foxes had sunk from one to four inches in it.

Wheeler's squirrel wood, west of railroad, measuring from south to north parallel with railroad. An average mixed pine and oak wood, not very level, say seventy-five years old.

15	24	12
11	16	9
20	20	10
17	26	12
17	29	10
13	26	10
14	16	12
16	19	12
15	27	8
17	27	9
15	24	11
17	21	7
12)187 (say 15½ ¹	27	7
	22	12
	16	12
	17	8
	28	7
	33	12
	28	12
	30	10)192 (say 10 ³
	20)476 (say 23¼ ²	

The result of 34 measures on Walden, eight or ten acres of which did not freeze till during the snow of a fortnight ago, gave 5½.

¹ 17½.

² 25½.

³ 12.

Probably there is less snow in the woods than in open land, though it may lie high and light.

In the swamp the dull-red leaves of the andromeda were just peeping out, the snow lying not quite level, but with gentle swells about the highest clumps of bushes.

Deep as the snow was, it was no harder but perhaps easier walking there than in summer. It would not much impede a mouse running about below.

Though the snow is only ten inches deep on a level, farmers affirm that it is two feet deep, confidently.

Jan. 13. Sunrise. — A heavy lodging snow, almost rain, has been falling — how long? — coming from the eastward. The weather comparatively warm, but windy. It will probably turn to rain. Say four or five inches deep. It sticks to the sides of the houses.

Took to pieces a pensile nest which I found the 11th on the south shore of Walden on an oak sapling (red or black), about fifteen feet from the ground. Though small, it measures three inches by three in the extreme, and was hung between two horizontal twigs or in a fork forming about a right angle, the third side being regularly rounded without any very stiff material. The twigs extended two or three inches beyond the nest. The bulk of it is composed of fine shreds or fibres, pretty long (say three to six inches), of apparently inner oak (?) bark, judging from some scraps of the epidermis adhering. It looks at first sight like sedge or grass. The bottom, which I accidentally broke off and disturbed the arrangement of, was composed of this

and white and pitch pine needles and little twigs about the same size and form, rough, with little leaf-stalks or feet (probably hemlock (?)¹), and also strips and curls of paper birch epidermis, and some hornet or other wasp nest used like the last. I mention the most abundant material first. Probably the needles and twigs were used on account of their curved form² and elasticity, to give shape to the bottom. The sides, which were not so thick, were composed of bark shreds, paper birch, and hornet-nest (the two latter chiefly outside, probably to bind and conceal and keep out the wind), agglutinated together. But most pains was taken with the thin edge and for three quarters of an inch down, where, beside the bark-fibres, birch paper, and hornets' nest, some silky reddish-brown and also white fibre was used to bind all with, almost spun into threads and passed over the twigs and agglutinated to them, or over the bark edge. The shreds of birch paper were smaller there, and the hornets' nest looked as if it had been reduced to a pulp by the bird and spread very thinly here and there over all, mixed with the brown silk. This last looked like cow's hair, but as I found a piece of a small brown cocoon, though a little paler, I suspect it was from that.³ The white may have been from a cocoon, or else vegetable silk. Probably a vireo's nest, maybe red-eye's.

In our workshops we pride ourselves on discovering a use for what had previously been regarded as waste, but how partial and accidental our economy compared

¹ Yes, they are.

² Perhaps bent by the bird.

³ Some of the same on my red-eye's nest.

with Nature's. In Nature nothing is wasted. Every decayed leaf and twig and fibre is only the better fitted to serve in some other department, and all at last are gathered in her compost-heap. What a wonderful genius it is that leads the vireo to select the tough fibres of the inner bark, instead of the more brittle grasses, for its basket, the elastic pine-needles and the twigs, curved as they dried to give it form, and, as I suppose, the silk of cocoons, etc., etc., to bind it together with! I suspect that extensive use is made of these abandoned cocoons by the birds, and they, if anybody, know where to find them. There were at least seven materials used in constructing this nest, and the bird visited as many distinct localities many times, always with the purpose or design to find some particular one of these materials, as much as if it had said to itself, "Now I will go and get some old hornets' nest from one of those that I saw last fall down in the maple swamp—perhaps thrust my bill into them—or some silk from those cocoons I saw this morning."

It turned to rain before noon, four or five inches of very moist snow or sleet having fallen.

Jan. 14. Sunrise. — Snows again. I think that you can best tell from what side the storm came by observing on which side of the trees the snow is plastered.

The crows are flitting about the houses and alight upon the elms.

After snowing an inch or two it cleared up at night. Boys, etc., go about straddling the fences, on the crust.

Jan. 15. A fine, clear winter day.

P. M. — To Hemlocks on the crust, slumping in every now and then.

A bright day, not cold. I can comfortably walk without gloves, yet my shadow is a most celestial blue. This only requires a clear bright day and snow-clad earth, not great cold. I cross the river on the crust with some hesitation. The snow appears considerably deeper than the 12th, maybe four or five inches deeper, and the river is indicated by a mere depression in it.

In the street not only fences but trees are obviously shortened, as by a flood. You are sensible that you are walking at a level a foot or more above the usual one. Seeing the tracks where a leaf had blown along and then tacked and finally doubled and returned on its trail, I thought it must be the tracks of some creature new to me.

I find under the hemlocks, in and upon the snow, apparently brought down by the storm, an abundance of those little dead hemlock twigs described on the 13th. They are remarkably slender, and without stiffness like the fir (and I think spruce) twigs, and this gives the hemlock its peculiar grace. These are not yet curved much, and perhaps they got that form from being placed in the nest.

Jan. 16. 8 A. M. — Down railroad, measuring snow, having had one bright day since the last flake fell; but, as there was a crust which would bear yesterday

(as to-day), it cannot have settled much. The last storms have been easterly and northeasterly.

Why so much (five and one half inches) more now in the woods than on the 12th, as compared with open fields? Was the driving snow caught in a small wood, or did it settle less in the rain there, or since the snow on account of bushes?

I hear flying over (and see) a snow bunting, — a clear loud *tcheep* or *tcheop*, sometimes rapidly trilled or quavered, — calling its mates.

With this snow the fences are scarcely an obstruction to the traveller; he easily steps over them. Often they are buried. I suspect it is two and a half feet deep in Andromeda Swamps now. The snow is much deeper in yards, roads, and all small inclosures than in broad fields.

Jan. 17. Henry Shattuck tells me that the quails come almost every day and get some saba beans within two or three rods of his house, — some which he neglected to gather. Probably the deep snow drives them to it.

Jan. 18. J. B. Moore says that he has caught twenty pounds of pickerel in Walden in one winter, etc., and had had nearly as good luck five or six times the same winter there, not less than ten pounds at one time. Suppose, then, that he has caught fifty pickerel there in one winter, and all others the same winter a hundred and fifty, you have two hundred caught in one winter. I suspect there are as many as two thousand that will

weigh a pound. Five men caught three hundred and thirty-three pounds in a pond in Eastham in one day this winter, say the papers, — largest five and a half pounds.

Analyzed a nest which I found January 7th in an upright fork of a red maple sapling on the edge of Hubbard's Swamp Wood, north side, near river, about eight feet from the ground, the deep grooves made by the twigs on each side. It *may* be a yellowbird's.

Extreme breadth outside, three inches; inside, one and a half. Extreme height outside, three inches; inside, one and five eighths; sides, three quarters of an inch thick.

It is composed of seven principal materials. (I name the most abundant first; I mean most abundant when compressed.)

1. Small compact lengths of silvery pappus about seven eighths of an inch long, perhaps of erechthites, one half inch deep and nearly pure, a very warm bed, chiefly concealed, just beneath the lining inside.

2. Slender catkins, often with the buds and twig ends (of perhaps hazel), throughout the whole bottom and sides, making it thick but open and light, mixed with

(3) milkweed silk, *i. e.* fibres like flax, but white, being bleached, also in sides and rim, some of it almost threadlike, white with some of the dark epidermis. From the pods? ¹

4. Thin and narrow strips of grape-vine bark, chiefly in the rim and sides for three quarters of an inch down, and here and there throughout.

¹ No, I am about certain, from comparison, that it is the fibres of the bark of the stem. *Vide 19th inst.*

5. Wads of apparently brown fern wool, mixed with the last three.

6. Some finer pale-brown and thinner shreds of bark within the walls and bottom, apparently not grape. If this were added to the grape, these five materials would be not far from equally abundant.

7. Some very fine pale-brown wiry fibres for a lining, just above the pappus and somewhat mixed with it, perhaps for coolness, being springy.

Directly beneath the pappus were considerable other shreds of grape and the other bark, short and broken. In the rim and sides some cotton ravellings and some short shreds of fish-line or crow-fence. A red maple leaf within the bottom; a kernel of corn just under the lining of fibres (perhaps dropped by a crow or blackbird or jay or squirrel while the nest was building). A few short lengths of stubble or weed stems in the bottom and sides. A very little brown wool, like, apparently, that in the nest last described, which may be brown fern wool. The milkweed and fern wool conspicuous without the rim and about the twigs. I was most struck by that mass of pure pappus under the inside lining.

P. M. --- To Walden to learn the temperature of the water.

The snow is so deep at present in the streets that it is very difficult turning out, and there are cradle-holes between this and the post-office. The sidewalks being blotted out, the street, like a woodman's path, looks like a hundred miles up country. I see where children

have for some days come to school across the fields on the crust from Abiel Wheeler's to the railroad crossing. I see their tracks in the slight snow upon the crust which fell the 14th. They save a great distance and enjoy the novelty.

This is a very mild, melting winter day, but clear and bright, yet I see the blue shadows on the snow at Walden. The snow lies very level there, about ten inches deep, and for the most part bears me as I go across with my hatchet. I think I never saw a more elysian blue than my shadow. I am turned into a tall blue Persian from my cap to my boots, such as no mortal dye can produce, with an amethystine hatchet in my hand. I am in raptures at my own shadow. What if the substance were of as ethereal a nature? Our very shadows are no longer black, but a celestial blue. This has nothing to do with cold, methinks, but the sun must not be too low.

I cleared a little space in the snow, which was nine to ten inches deep over the deepest part of the pond, and cut through the ice, which was about seven inches thick, only the first four inches, perhaps, snow ice, the other three clear. The moment I reached the water, it gushed up and overflowed the ice, driving me out this yard in the snow, where it stood at last two and a half inches deep above the ice.

The thermometer indicated $33\frac{1}{2}^{\circ}$ at top and $34\frac{2}{3}^{\circ}$ when drawn up rapidly from thirty feet beneath. So, *apparently*, it is not much warmer beneath.

Goodwin was fishing there. He says he once caught fifty pounds of pickerel here in two days; he thought

twenty-five or thirty fishes. Thought that there were many hundred caught here in a winter; that nearly all were females.

Observed some of those little hard galls on the high blueberry, pecked or eaten into by some bird (or *possibly* mouse), for the little white grubs which lie curled up in them. What entomologists the birds are! Most men do not suspect that there are grubs in them, and how secure the latter seem under these thick dry shells! Yet there is no secret but it is confided to some one.

Jan. 19. Another bright winter day.

P. M. — To river to get some water asclepias to see what birds' nests are made of.

The only open place in the river between Hunt's Bridge and the railroad bridge is a small space against Merrick's pasture just below the Rock.¹ As usual, just below a curve, in shallow water, with the added force of the Assabet.

The willow osiers of last year's growth on the polards in Shattuck's row, Merrick's pasture, from four to seven feet long, are *perhaps* as bright as in the spring, the lower half yellow, the upper red, but they are a *little* shrivelled in the bark.

Measured again the great elm in front of Charles Davis's on the Boston road, which he is having cut down. The chopper, White, has taken off most of the limbs and just begun, tried his axe, on the foot of the

¹ Hubbard's Bridge and, I have no doubt, Lee's Bridge, as I learned in my walk the next day.

tree. He will probably fall it on Monday, or the 21st. At the smallest place between the ground and the limbs, seven feet from the ground, it is fifteen feet and two inches in circumference; at one foot from the ground on the lowest side, twenty-three feet and nine inches. White is to have ten dollars for taking off the necessary limbs and cutting it down merely, help being found him. He began on Wednesday. Davis and the neighbors were much alarmed by the creaking in the late storms, for fear it would fall on their roofs. It stands two or three feet into Davis's yard.

As I came home through the village at 8.15 P. M., by a bright moonlight, the moon nearly full and not more than 18° from the zenith, the wind northwest, but not strong, and the air pretty cold, I saw the melon-rind arrangement of the clouds on a larger scale and more distinct than ever before. There were eight or ten courses of clouds, so broad that with equal intervals of blue sky they occupied the whole width of the heavens, broad white cirro-stratus in perfectly regular curves from west to east across the whole sky. The four middle ones, occupying the greater part of the visible cope, were particularly distinct. They were all as regularly arranged as the lines on a melon, and with much straighter sides, as if cut with a knife. I hear that it attracted the attention of those who were abroad at 7 P. M., and now, at 9 P. M., it is scarcely less remarkable. On one side of the heavens, north or south, the intervals of blue look almost black by contrast. There is now, at nine, a strong wind from the northwest. Why do these bars extend east and west? Is it

the influence of the sun, which set so long ago? or of the rotation of the earth? The bars which I notice so often, morning and evening, are apparently connected with the sun at those periods.

In Oliver N. Bacon's History of Natick, page 235, it is said that, of phænogamous plants, "upwards of 800 species were collected from Natick soil in three years' time, by a single individual." I suspect it was Bacon the surveyor. There is given a list of those which are rare in that vicinity. Among them are the following which I do not know to grow here: *Actæa rubra* (W.),¹ *Asclepias tuberosa*,² *Alopecurus pratensis*,¹ *Corallorhiza odontorhiza* (?) (Nutt.), *Drosera filiformis* (Nutt.), *Ledum latifolium*,¹ *Malaxis lilifolia* (W.) (what in Gray?), *Sagina procumbens*.¹ Among those rare there but common here are *Calla Virginica*, *Glechoma hederacea*, *Iris prismatica*, *Lycopus Virginicus*, *Mikania scandens*, *Prunus borealis*, *Rhodora Canadensis*, *Xyris aquatica*, *Zizania aquatica*. They, as well as we, have *Equisetum hyemale*, *Kalmia glauca*, *Liatris scariosa*, *Ulmus fulva*, *Linnæa borealis*, *Pyrola maculata*, etc., etc.

Bacon quotes White, who quotes Old Colony Memorial account of manners and customs, etc., of our ancestors.

Bacon says that the finest elm in Natick stands in front of Thomas F. Hammond's house, and was set out "about the year 1760." "The trunk, five feet from the ground, measures fifteen and a half feet." G. Emerson gives a different account, *q. v.*

¹ Found since.

² Probably here.

Observed within the material of a robin's nest, this afternoon, a cherry-stone.

Gathered some dry water milkweed stems to compare with the materials of the bird's nest of the 18th. The bird used, I am almost certain, the fibres of the bark of the stem,—not the pods,—just beneath the epidermis; only the bird's is older and more fuzzy and finer, like worn twine or string. The fibres and bark have otherwise the same appearance under the microscope. I stripped off some bark about one sixteenth of an inch wide and six inches long and, separating ten or twelve fibres from the epidermis, rolled it in my fingers, making a thread about the ordinary size. This I could not break by direct pulling, and no man could. I doubt if a thread of flax or hemp of the same size could be made so strong. What an admirable material for the Indian's fish-line! I can easily get much longer fibres. I hold a piece of the dead weed in my hands, strip off a narrow shred of the bark before my neighbor's eyes and separate ten or twelve fibres as fine as a hair, roll them in my fingers, and offer him the thread to try its strength. He is surprised and mortified to find that he cannot break it. Probably both the Indian and the bird discovered for themselves this same (so to call it) wild hemp. The corresponding fibres of the mikania seem not so divisible, become not so fine and fuzzy; though somewhat similar, are not nearly so strong. I have a hang-bird's nest from the riverside, made almost entirely of this, in narrow shreds or strips with the epidermis on, wound round and round the twigs and woven into a basket. That is, this bird

has used perhaps the strongest fibre which the fields afforded and which most civilized men have not detected.

Knocked down the bottom of that summer yellow-bird's nest made on the oak at the Island last summer. It is chiefly of fern wool and also, *apparently*, some sheep's wool (?), with a fine green moss (apparently that which grows on button-bushes) inmixed, and some milkweed fibre, and all very firmly agglutinated together. Some shreds of grape-vine bark about it. Do not know what portion of the whole nest it is.

Jan. 20. In my experience I have found nothing so truly impoverishing as what is called wealth, *i. e.* the command of greater means than you had before possessed, though comparatively few and slight still, for you thus inevitably acquire a more expensive habit of living, and even the very same necessaries and comforts cost you more than they once did. Instead of gaining, you have lost some independence, and if your income should be suddenly lessened, you would find yourself poor, though possessed of the same means which once made you rich. Within the last five years I have had the command of a little more money than in the previous five years, for I have sold some books and some lectures; yet I have not been a whit better fed or clothed or warmed or sheltered, not a whit richer, except that I have been less concerned about my living, but perhaps my life has been the less serious for it, and, to balance it, I feel now that there is a possibility of

failure. Who knows but I *may* come upon the town, if, as is likely, the public want no more of my books, or lectures (which last is already the case)? Before, I was much likelier to take the town upon my shoulders. That is, I have lost some of my independence on them, when they would say that I had gained an independence. If you wish to give a man a sense of poverty, give him a thousand dollars. The next hundred dollars he gets will not be worth more than ten that he used to get. Have pity on him; withhold your gifts.

P. M. — Up river to Hollowell place.

I see the blue between the cakes of snow cast out in making a path, in the triangular recesses, though it is pretty cold, but the sky is completely overcast.

It is now good walking on the river, for, though there has been no thaw since the snow came, a great part of it has been converted into snow ice by sinking the old ice beneath the water, and the crust of the rest is stronger than in the fields, because the snow is so shallow and has been so moist. The river is thus an advantage as a highway, not only in summer and when the ice is bare in the winter, but even when the snow lies very deep in the fields. It is invaluable to the walker, being now not only the most interesting, but, excepting the narrow and unpleasant track in the highways, the only practicable route. The snow never lies so deep over it as elsewhere, and, if deep, it sinks the ice and is soon converted into snow ice to a great extent, beside being blown out of the river valley. Neither is it drifted here. Here, where you cannot walk at all in the summer, is better walking than elsewhere in the

winter. But what a different aspect the river's brim now from what it wears in summer! I do not this moment hear an insect hum, nor see a bird, nor a flower. That museum of animal and vegetable life, a meadow, is now reduced to a uniform level of white snow, with only half a dozen kinds of shrubs and weeds rising here and there above it.

Nut Meadow Brook is open in the river meadow, but not into the river. It is remarkable that the short strip in the middle below the Island (*vide* yesterday) should be the only open place between Hunt's Bridge and Hubbard's, at least, — probably as far as Lee's. The river has been frozen solidly ever since the 7th, and that small open strip of yesterday (about one rod wide and in middle) was probably not more than a day or two old. It is very rarely closed, I suspect, *in all places* more than two weeks at a time. Ere long it wears its way up to the light, and its blue artery again appears here and there. In one place close to the river, where the forget-me-not grows, that springy place under the bank just above the railroad bridge, the snow is quite melted and the bare ground and flattened weeds exposed for four or five feet.

Broke open a frozen nest of mud and stubble in a black willow, probably a robin's, in which were a snail (?) shell  and a skunk-cabbage seed (?). Were they not left there by a mouse? Or could they have been taken up with the mud? They were somewhat in the mud. A downy woodpecker without red on head the only bird seen in this walk [?]. I stand within twelve feet.

The arrangement of the clouds last night attracted attention in various parts of the town.

A probable kingbird's nest, on a small horizontal branch of a young swamp white oak, amid the twigs, about ten feet from ground. This tree is very scraggy; has numerous short twigs at various angles with the branches, making it unpleasant to climb and affording support to birds' nests. The nest is round, running to rather a sharp point on one side beneath. Extreme diameter outside, four and a half to five inches; within, three inches; depth within, two inches; without, four or more. The principal materials are ten, in the order of their abundance thus: —

1. Reddish and gray twigs, some a foot and more in length, which are cranberry vines, with now and then a leaf on, probably such as were torn up by the rakers. Some are as big round as a knitting-needle, and would be taken for a larger bush. These make the stiff mass of the outside above and rim.

2. Woody roots, rather coarser, intermixed from waterside shrubs. Probably some are from cranberry vines. These are mixed with the last and with the bottom.

3. Softer and rather smaller roots and root-fibres of herbaceous plants, mixed with the last and a little further inward, for the hardest are always most external.

4. (Still to confine myself to the order of abundance) withered flowers and short bits of the gray downy stems of the fragrant everlasting; these more or less compacted and apparently agglutinated from the mass of

the solid bottom, and more loose, with the stems run down to a point on one side the bottom.

5. What I think is the fibrous growth of a willow, moss-like with a wiry dark-colored hair-like stem (pos-



sibly it is a moss). This, with or without the tuft, is the lining, and lies contiguous in the sides and bottom.

6. What looks like brown decayed leaves and confervæ from the dried bottom of the riverside, mixed with the everlasting-tops internally in the solid bottom.

7. Some finer brown root-fibres, chiefly between the lining of No. 6 and hair and the coarser fibres of No. 3.

8. A dozen whitish cocoons, mixed with the everlasting-tops and dangling about the bottom peak externally; a few within the solid bottom. Also eight or ten very minute cocoons mixed with these, attached in a cluster to the top of an everlasting.

9. A few black much branched roots (?) (perhaps some utricularia from the dried bottom of river), mixed with Nos. 2 and 3.

10. Some horsehair, white and black, together with No. 5 forming the lining.

There are also, with the cocoons and everlasting-tops externally, one or two cotton-grass heads, one small white feather, and a little greenish-fuscous moss from the button-bush, and, in the bottom, a small shred of grape-vine bark.

Jan. 21. Four men, cutting at once, began to fell the big elm (*vide* 19th) at 10 A. M., went to dinner at 12, and got through at 2.30 P. M. They used a block and tackle with five falls, fastened to the base of a button-wood, and drawn by a horse, to pull it over the right way; so it fell without harm down the road. One said he pulled twenty turns. I measured it at 3 P. M., just after the top had been cut off.

It was 15 feet to the first crotch. At 75 feet, the most upright and probably highest limb was cut off, and measured 27 inches in circumference. As near as I could tell from the twigs on the snow, and what the choppers said who had just removed the top, it was about 108 feet high. At 15 feet from the stump, it divided into two parts, about an equal size. One was decayed and broken in the fall, being undermost, the other (which also proved hollow) at its origin was $11\frac{4}{12}$ feet in circumference. (The whole tree directly beneath this crotch was $19\frac{3}{12}$ round.) This same limb branched again at $36\frac{8}{12}$ from the stump, and there measured, just beneath the crotch, $14\frac{10}{12}$ in circumference. At the ground the stump measured $8\frac{4}{12}$ one way, $8\frac{3}{12}$ another, $7\frac{1}{2}$ another. It was solid quite through at butt (excepting 3 inches in middle), though somewhat decayed within, and I could count pretty well 105 rings, to which add 10 more for the hollow and you have 115.¹

There was a currant bush opposite the first crotch, in a large hole at that height, where probably a limb

¹ This is wrong. *Vide* 26th *inst.* I could not count the decayed part there well.

once broke off (making three there), and also a great many stones bigger than a hen's egg, probably cast in by the boys. There was also part of an old brick with some clay, thirty or forty years within the tree at the stump, completely overgrown and cut through by the axe. I judged that there were at least seven cords then in the road, supposing one main limb sound, and Davis thought that the pile in the yard, from the limbs taken off last week, contained four more. He said that there were some flying squirrels within and upon it when they were taking off the limbs. There was scarcely any hollowness to be discovered. It had grown very rapidly the first fifty years or so. You could see where there had once been deep clefts between different portions of the trunk at the stump, but the tree had afterward united and overgrown them, leaving some bark within the wood. In some places the trunk as it lay on the ground (though flatwise) was as high as a man's head.

This tree stood directly under the hill, which is some sixty feet high, the old burying hill continued, south of where the flagstaff was planted when the British marched into town. This tree must have been some fifty years old and quite sizable then. White, when taking off the limbs, said that he could see all over Sleepy Hollow, beyond the hill. There were several great wens on the trunk, a foot in diameter and nearly as much in height. The tree was so sound I think it might have lived fifty years longer; but Mrs. Davis said that she would not like to spend another such a week as the last before it was cut down. They heard

it creak in the storm. One of the great limbs which reached over the house was cracked. The two main limbs proved hollow.

Jan. 22. P. M. — To Walden.

The Walden road is nearly full of snow still, to the top of the wall on the north side, though there has been no snow falling since the 14th. The snow lies particularly solid. Looking toward the sun, the surface consists of great patches of shining crust and dry driving snow, giving it a *watered* appearance.

Miss Minott talks of cutting down the oaks about her house for fuel, because she cannot get her wood sledded home on account of the depth of the snow, though it lies all cut there. James, at R. W. E.'s, waters his cows at the door, because the brook is frozen.

If you wish to know whether a tree is hollow, or has a hole in it, ask the squirrels. They know as well as whether they have a home or not. Yet a man lives under it all his life without knowing, and the chopper must fairly cut it up before he can tell. If there is a cleft in it, he is pretty sure to find some nutshell or materials of a bird's nest left in it.

At Brister's Spring I see where a squirrel has been to the spring and also sat on a low alder limb and eaten a hazelnut. Where does he find a sound hazelnut now? Has them in a hollow tree.

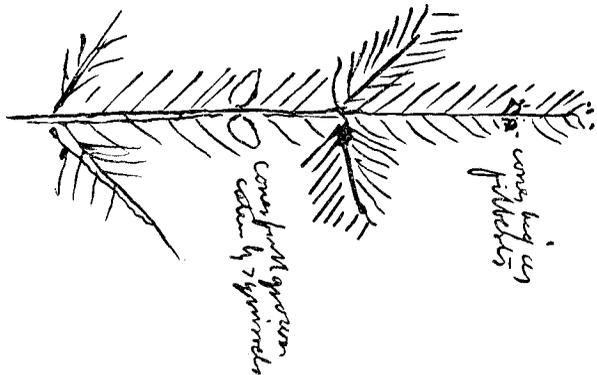
See tracks of fishermen and pickerel. *Vide* forward.

At Walden, near my old residence, I find that since I was here on the 11th, apparently within a day or two, some gray or red squirrel or squirrels have been feeding

on the pitch pine cones extensively. The snow under one young pine is covered quite thick with the scales they have dropped while feeding overhead. I count the cores of thirty-four cones on the snow there, and that is not all. Under another pine there are more than twenty, and a well-worn track from this to a fence-post three rods distant, under which are the cores of eight cones and a corresponding amount of scales.

♂ β The track is like a very small rabbit. They have gnawed off the cones which were perfectly closed.

♂♂ I see where one has taken one of a pair and left the other partly off. He had first sheared off the needles that were in the way, and then gnawed off the sides or cheeks of the twig to come at the stem of the cone, which as usual was cut by successive cuts



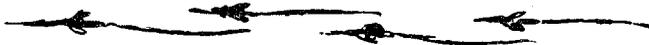
as with a knife, while bending it. One or two small, perhaps dead,¹ certainly unripe ones were taken off and left unopened. I find that many of those young

¹ Probably died last summer when little over a year old.

pinces are now full of unopened cones, which apparently will be two years old next summer, and these the squirrel now eats. There are also some of them open, perhaps on the most thrifty twigs.

F. Morton hears to-day from Plymouth that three men have just caught in Sandy Pond, in Plymouth, about two hundred pounds of pickerel in two days.

Somebody has been fishing in the pond this morning, and the water in the holes is beginning to freeze. I see the track of a crow,¹ the toes as usual less spread



and the middle one making a more curved furrow in the snow than the partridge, as if they moved more unstably, recovering their balance, — feeble on their feet. The inner toe a little the nearest to the middle one.² This track goes to every hole but one or two out of a dozen, — directly from hole to hole, sometimes flying a little, — and also to an apple-core on the snow. I am pretty sure that this bird was after the bait which is usually dropped on the ice or in the hole. E. Garfield says they come regularly to his holes for bait as soon as he has left. So, if the pickerel are not fed, it is. It had even visited, on the wing, a hole, now frozen and snowed up, which I made far from this in the middle of the pond several days since, as I discovered by its droppings, the same kind that it had left about the first holes.

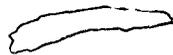
I was surprised, on breaking with my foot the ice in a pickerel-hole near the shore, evidently frozen only

¹ Vide 24th inst.

² Vide Feb. 1st.

last night, to see the water rise at once half an inch above it. Why should the ice be still sinking? Is it growing more solid and heavier?

Most were not aware of the size of the great elm till it was cut down. I surprised some a few days ago by saying that when its trunk should lie prostrate it would be higher than the head of the tallest man in the town, and that two such trunks could not stand in the chamber we were then in, which was fifteen feet across; that there would be ample room for a double bedstead on the trunk, nay, that the very dinner-table we were sitting at, with our whole party of seven, chairs and all, around it, might be set there. On the decayed part of the butt end there were curious fine black lines, giving it a geographical look, here and there, half a



dozen inches long, sometimes following the line of the rings; the boundary of a part which had

reached a certain stage of decay. The force on the pulleys broke off more than a foot in width in the middle of the tree, much decayed.

I have attended the felling and, so to speak, the funeral of this old citizen of the town, — I who commonly do not attend funerals, — as it became me to do. I was the chief if not the only mourner there. I have taken the measure of his grandeur; have spoken a few words of eulogy at his grave, remembering the maxim *de mortuis nil nisi bonum* (in this case *magnum*). But there were only the choppers and the passers-by to hear me. Further the town was not represented;

the fathers of the town, the selectmen, the clergy were not there. But I have not known a fitter occasion for a sermon of late. Travellers whose journey was for a short time delayed by its prostrate body were forced to pay it some attention and respect, but the axe-boys had climbed upon it like ants, and commenced chipping at it before it had fairly ceased groaning. There was a man already bargaining for some part. How have the mighty fallen! Its history extends back over more than half the whole history of the town. Since its kindred could not conveniently attend, I attended. Methinks its fall marks an epoch in the history of the town. It has passed away together with the clergy of the old school and the stage-coach which used to rattle beneath it. Its virtue was that it steadily grew and expanded from year to year to the very last. How much of old Concord falls with it! The town clerk will not chronicle its fall. I will, for it is of greater moment to the town than that of many a human inhabitant would be. Instead of erecting a monument to it, we take all possible pains to obliterate its stump, the only monument of a tree which is commonly allowed to stand. Another link that bound us to the past is broken. How much of old Concord was cut away with it! A few such elms would alone constitute a township. They might claim to send a representative to the General Court to look after their interests, if a fit one could be found, a native American one in a true and worthy sense, with catholic principles. Our town has lost some of its venerableness. No longer will our eyes rest on its massive gray trunk, like a vast

Corinthian column by the wayside; no longer shall we walk in the shade of its lofty, spreading dome. It is as if you had laid the axe at the feet of some venerable Buckley or Ripley. You have laid the axe, you have made fast your tackle, to one of the king-posts of the town. I feel the whole building wracked by it. Is it not sacrilege to cut down the tree which has so long looked over Concord beneficently?

Supposing the first fifteen feet to average six feet in diameter, they would contain more than three cords and a foot of wood; but probably not more than three cords.

With what feelings should not the citizens hear that the biggest tree in the town has fallen! A traveller passed through the town and saw the inhabitants cutting it up without regret.

The tracks of the partridges by the sumachs, made before the 11th, are perhaps more prominent now than ever, for they have consolidated the snow under them so that as it settled it has left them *alto-relievo*. They look like broad chains extending straight far over the snow.

I brought home and examined some of the droppings of the crow mentioned four pages back. They were brown and dry, though partly frozen. After long study with a microscope, I discovered  that they consisted of the seeds and skins and other indigestible parts of red cedar berries and some barberries (I detected the imbricated scale-like leaves of a berry stem and then the seeds and the now black skins of the cedar berries, but easily the large seeds of the barberries) and perhaps something more, and I knew whence it had probably come, *i. e.* from the cedar woods and

barberry bushes by Flint's Pond. These, then, make part of the food of crows in severe weather when the snow is deep, as at present.

Jan. 23. Brown is filling his ice-house. The *clear* ice is only from one and a half to four inches thick; all the rest, or nearly a foot, is snow ice, formed by the snow sinking the first under the water and freezing with the water. The same is the case at Walden. To get ice at all clear or transparent, you must scrape the snow off after each fall. Very little ice is formed by addition below, such a snowy winter as this.

There was a white birch scale yesterday on the snowed-up hole which I made in the very middle of Walden. I have no doubt they blow across the widest part of the pond.

When approaching the pond yesterday, through my bean-field, I saw where some fishermen had come away, and the tails of their string of pickerel had trailed on the deep snow where they sank in it. I afterward saw where they had been fishing that forenoon, the water just beginning to freeze, and also where some had fished the day before with red-finned minnows, which were frozen into an inch of ice; that these men had chewed tobacco and ate apples. All this I knew, though I saw neither man nor squirrel nor pickerel nor crow.

Measured, this afternoon, the snow in the same fields which I measured just a week ago, to see how it had settled. It has been uniformly fair weather of average winter coldness, without any thaw.¹ West of railroad

¹ Add 2 for ice at bottom. *Vide* Feb. 12th.

it averages $11\frac{1}{3} +$. (On the 16th it was $12\frac{1}{4}$.) East of railroad, 14 inches (16th, $15\frac{5}{8}$). Or average of both $12\frac{1}{3} +^1$ — say $12\frac{1}{2}$. It has settled, therefore, in open fields $1\frac{1}{10}$ inches, showing how very solid it is, as many have remarked. Not allowing for what of the light snow above the crust may have drifted against the railroad embankment (though I measured on both sides of it).² Trillium Woods, $13\frac{1}{4} +$; ³ 16th it was 17 .⁴ Has settled $3\frac{3}{4}$. It seems, then, that, as it lies light in the wood at first, it settles much faster there, so that, though it was nearly $3\frac{1}{2}$ inches the deepest there a week ago, it is less than 1 inch the deepest there now.

Jan. 24. A journal is a record of experiences and growth, not a preserve of things well done or said. I am occasionally reminded of a statement which I have made in conversation and immediately forgotten, which would read much better than what I put in my journal. It is a ripe, dry fruit of long-past experience which falls from me easily, without giving pain or pleasure. The charm of the journal must consist in a certain greenness, though freshness, and not in maturity. Here I cannot afford to be remembering what I said or did, my scurf cast off, but what I am and aspire to become.

Reading the hymns of the Rig Veda, translated by Wilson, which consist in a great measure of simple epithets addressed to the firmament, or the dawn, or

¹ $11\frac{1}{3} +$.

² The drifting of light surface snow *may* have produced nearly all the change.

³ $15\frac{1}{4}$.

⁴ 19.

the winds, which mean more or less as the reader is more or less alert and imaginative, and seeing how widely the various translators have differed, they regarding not the poetry, but the history and philology, dealing with very concise Sanscrit, which must almost always be amplified to be understood, I am sometimes inclined to doubt if the translator has not made something out of nothing, — whether a real idea or sentiment has been thus transmitted to us from so primitive a period. I doubt if learned Germans might not thus edit pebbles from the seashore into hymns of the Rig Veda, and translators translate them accordingly, extracting the meaning which the sea has imparted to them in very primitive times. While the commentators and translators are disputing about the meaning of this word or that, I hear only the resounding of the ancient sea and put into it all the meaning I am possessed of, the deepest murmurs I can recall, for I do not the least care where I get my ideas, or what suggests them.

I knew that a crow had that day plucked the cedar berries and barberries by Flint's Pond and then flapped silently through the trackless air to Walden, where it dined on fisherman's bait, though there was no living creature to tell me.

Holbrook's elm measured to-day 11 feet 4 inches in circumference at six feet from ground, the size of one of the branches of the Davis elm (call it the Lee elm, for a Lee formerly lived there). Cheney's largest in front of Mr. Frost's, 12 feet 4 inches, at six feet; 16 feet 6 inches, at one foot. The great elm opposite

Keyes's land, near by (call it the Jones elm): 17 feet 6 inches, at two behind and one plus before; 15 feet 10 inches, at four; 15 feet 5 inches, at six; 16 feet at seven and a half, or spike on west side. At the smallest place between the ground and branches, this is a little bigger than the Davis elm, but it is not so big at or near the ground, nor is it so high to the branching, — about twelve feet, — nor are the branches so big, but it is much sounder, and its top broader, fuller, and handsomer. This has an uncommonly straight-sided and solid-looking trunk, measuring only two feet less at six feet from the ground than at two.

P. M. — Up Assabet.

Even the patches of shining snow-crust between those of dry white surface snow are slightly blue, like ice and water.

You may walk anywhere on the river now. Even the open space against Merrick's, below the Rock, has been closed again, and there is only six feet of water there now. I walk with a peculiar sense of freedom over the snow-covered ice, not fearing that I shall break through. I have not been able to find any tracks of muskrats this winter. I suspect that they very rarely venture out in winter with their wet coats.

I see squirrel-tracks about the hemlocks. They are much like rabbits, only the toes are very distinct. From this they pass into a semicircular figure sometimes. Some of the first are six inches from outside to outside lengthwise, with one to two feet of interval.



Are these the gray or red?

A great many hemlock cones have fallen on the snow and rolled down the hill.

Higher up, against the Wheeler Swamp, I see where many squirrels — perhaps red, for the tracks appear smaller — have fed on the alder cones on the twigs which are low or frozen into the ice, stripping them to the core just as they do the pine cones.

Here are the tracks of a crow, like those of the 22d, with a *long hind toe*, nearly two inches. The two feet are also nearly two inches apart. I see where the bird alighted, descending with an impetus and breaking through the slight crust, planting its feet side by side.

How different this partridge-track, with its slight hind toe, open and wide-spread toes on each side, both feet forming one straight line, exactly thus: —



(Five inches from centre to centre.) The middle toe alternately curved to the right and to the left, and what is apparently the outer toe in each case shorter than the inner one.

I see under a great many trees, black willow and swamp white oak, the bark scattered over the snow, some pieces six inches long, and above see the hole which a woodpecker has bored.

The snow is so deep along the sides of the river that I can now look into nests which I could hardly reach in the summer. I can hardly believe them the same. They have only an ice egg in them now. Thus we go

about, raised, generally speaking, more than a foot above the summer level. So much higher do we carry our heads in the winter. What a great odds such a little difference makes! When the snow raises us one foot higher than we have been accustomed to walk, we are surprised at our elevation! So we soar.

I do not find a foot of open water, even, on this North Branch, as far as I go, *i. e.* to J. Hosmer's lot. The river has been frozen unusually long and solidly. They have been sledding wood along the river for a quarter of a mile in front of Merriam's and past the mouth of Sam Barrett's Brook, where it is bare of snow, — hard, glare ice on which there is scarcely a trace of the sled or oxen. They have sledded home a large oak which was cut down on the bank. Yet this is one of the rockiest and swiftest parts of the stream. Where I have so often stemmed the swift current, dodging the rocks, with my paddle, there the heavy, slow-paced oxen, with their ponderous squeaking load, have plodded, while the teamster walked musing beside it.

That Wheeler swamp is a great place for squirrels. I observe many of their tracks along the riverside there. The nests are of leaves, and apparently of the gray species.

There is much of the water milkweed on the little island just above Dove Rock. It rises above the deep snow there.

It is remarkable how much the river has been tracked by dogs the week past, not accompanied by their masters. They hunt, perchance, in the night more than is supposed, for I very rarely see one alone by day.

The river is pretty low and has fallen within a month, for there has been no thaw. The ice has broken and settled around the rocks, which look as if they had burst up through it. Some maple limbs which were early frozen in have been broken and stripped down by this irresistible weight.

You see where the big dogs have slipped on one or two feet in their haste, sinking to the ice, but, having two more feet, it did not delay them.

I walk along the sides of the stream, admiring the rich mulberry catkins of the alders, which look almost edible. They attract us because they have so much of spring in them. The clear red osiers, too, along the riverside in front of Merriam's on Wheeler's side.

I have seen many a collection of stately elms which better deserved to be represented at the General Court than the manikins beneath, — than the barroom and victualling cellar and groceries they overshadowed. When I see their magnificent domes, miles away in the horizon, over intervening valleys and forests, they suggest a village, a community, there. But, after all, it is a secondary consideration whether there are human dwellings beneath them; these may have long since passed away. I find that into my idea of the village has entered more of the elm than of the human being. They are worth many a political borough. They constitute a borough. The poor human representative of his party sent out from beneath their shade will not suggest a tithe of the dignity, the true nobleness and comprehensiveness of view, the sturdiness and independence, and the serene beneficence that they do. They look from town-

ship to township. A fragment of their bark is worth the backs of all the politicians in the union. They are free-soilers in their own broad sense. They send their roots north and south and east and west into many a conservative's Kansas and Carolina, who does not suspect such underground railroads, — they improve the subsoil he has never disturbed, — and many times their length, if the support of their principles requires it. They battle with the tempests of a century. See what scars they bear, what limbs they lost before we were born! Yet they never adjourn; they steadily vote for their principles, and send their roots further and wider from the *same centre*. They die at their posts, and they leave a tough butt for the choppers to exercise themselves about, and a stump which serves for their monument. They attend no caucus, they make no compromise, they use no policy. Their one principle is growth. They combine a true radicalism with a true conservatism. Their radicalism is not cutting away of roots, but an infinite multiplication and extension of them under all surrounding institutions. They take a firmer hold on the earth that they may rise higher into the heavens. Their conservative heart-wood, in which no sap longer flows, does not impoverish their growth, but is a firm column to support it; and when their expanding trunks no longer require it, it utterly decays. Their conservatism is a dead but solid heart-wood, which is the pivot and firm column of support to all this growth, appropriating nothing to itself, but forever by its support assisting to extend the area of their radicalism. Half a century after they are dead

at the core, they are preserved by radical reforms. They do not, like men, from radicals turn conservative. Their conservative part dies out first; their radical and growing part survives. They acquire new States and Territories, while the old dominions decay, and become the habitation of bears and owls and coons.

Jan. 25. P. M. — Up river.

The hardest day to bear that we have had, for, beside being 5° at noon and at 4 P. M., there is a strong northwest wind. It is worse than when the thermometer was at zero all day. Pierce says it is the first day that he has not been able to work outdoors in the sun. The snow is now very dry and powdery, and, though so hard packed, drifts somewhat. The travellers I meet have red faces. Their ears covered. Pity those who have not thick mittens. No man could stand it to travel far toward this wind. It stiffens the whole face, and you feel a tingling sensation in your forehead. Much worse to bear than a still cold. I see no life abroad, no bird nor beast. What a stern, bleak, inhospitable aspect nature now wears! (I am off Clamshell Hill.) Where a few months since was a fertilizing river reflecting the sunset, and luxuriant meadows resounding with the hum of insects, is now a uniform crusted snow, with dry powdery snow drifting over it and confounding river and meadow. I make haste away, covering my ears, before I freeze there. The snow in the road has frozen dry, as dry as bran.

A closed pitch pine cone gathered January 22d opened last night in my chamber. If you would be convinced

how differently armed the squirrel is naturally for dealing with pitch pine cones, just try to get one off with your teeth. He who extracts the seeds from a single closed cone with the aid of a knife will be constrained to confess that the squirrel earns his dinner. It is a rugged customer, and will make your fingers bleed. But the squirrel has the key to this conical and spiny chest of many apartments. He sits on a post, vibrating his tail, and twirls it as a plaything.

But so is a man commonly a locked-up chest to us, to open whom, unless we have the key of sympathy, will make our hearts bleed.

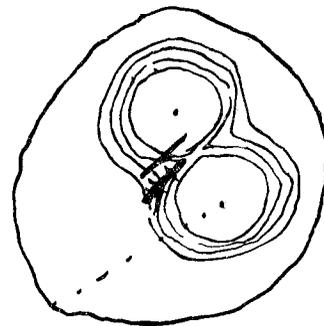
The elms, they adjourn not night nor day; they pair not off. They stand for magnificence; they take the brunt of the tempest; they attract the lightning that would smite our roofs, leaving only a few rotten members scattered over the highway. The one by Holbrook's is particularly regular and lofty for its girth, a perfect sheaf, but thin-leaved, apparently a slow grower. It bore a tavern sign for many a year. Call it the Bond (?) elm.

Jan. 26. When I took the ether my consciousness amounted to this: I put my finger on myself in order to keep the place, otherwise I should never have returned to this world.

They have cut and sawed off the butt of the great elm at nine and a half feet from the ground, and I counted the annual rings there with the greatest ease and accuracy. Indeed I never saw them so distinct on a large butt. The tree was quite sound there, not the

least hollow even at the pith. There were one hundred and twenty-seven rings. Supposing the tree to have been five years old when nine and a half feet high, then it was one hundred and thirty-two years old, or came up in the year 1724, just before Lovewell's Fight.

There were two centres, fourteen inches apart. The accompanying coarse sketch will give a *general* idea of it. There were thirteen distinct rings about each centre, before they united and one ring inclosed both. Then there was a piece of bark, — which may be rudely represented by the



upper black mark, — say six or eight inches long. This was not overgrown but by the twenty-fourth ring. These two centres of growth corresponded in position to the two main branches six feet above, and I inferred that when the tree was about eighteen years old, the fork commenced at nine and a half feet from the ground, but as it increased in diameter, it united higher and higher up. I remember that the bark was considerably nearer one centre than the other. There was bark in several places completely overgrown and included on the extreme butt end where cut off, having apparently overgrown its own furrows.

Its diameter, where I counted the rings, was, one way, as near as I could measure in spite of the carf,

four feet and three inches; another, four feet and eight inches; and five feet. On the line by which I counted, which was the long way of the tree, it had grown in the first fifty years twenty inches, or two fifths of an inch a year; the last fifty, five and three quarters inches or about one ninth of an inch a year; and there was a space of about five inches between the two, or for the intermediate twenty-seven years. At this height, it had grown on an average annually nearly twenty-four one-hundredths of an inch from the centre on one side.

The white or sap wood averaged about two inches thick. The bark was from one to two inches thick, and



in the last case I could count from twelve to fifteen distinct rings in it, as if it were regularly shed after that period.

The court-house elm measured, at six feet from the ground on the west side, twelve feet one and one half inches in circumference. The willow by the Jim Jones house, fourteen feet at about eighteen inches from ground; thirteen feet eight inches, at about six inches from ground; and it bulged out much larger above this.

P. M. — Walked down the river as far as the south bend behind Abner Buttrick's. I also know its condition as far as the Hubbard Bridge in the other direction. There is not a square foot open between these extremes, and, judging from what I know of the river beyond

these limits, I may safely say that it is not open (the main stream, I mean) anywhere in the town. (Of the North Branch above the Bath Place, the goose ground, say to the stone bridge, I cannot speak confidently.¹) The same must have been the case yesterday, since it was colder. Probably the same has been true of the river, excepting the small space against Merrick's below the Rock (now closed), since January 7th, when it closed at the Hubbard Bath, or nearly three weeks, — a long time, methinks, for it to be frozen so solidly. A sleigh might safely be driven now from Carlisle Bridge to the Sudbury meadows on the river. Methinks it is a remarkably cold, as well as snowy, January, for we have had good sleighing ever since the 26th of December and no thaw.

Walked as far as Flint's Bridge with Abel Hunt, where I took to the river. I told him I had come to walk on the river as the best place, for the snow had drifted somewhat in the road, while it was converted into ice almost entirely on the river. "But," asked he, "are you not afraid that you will get in?" "Oh, no, it will bear a load of wood from one end to the other." "But then there may be some weak places." Yet he is some seventy years old and was born and bred immediately on its banks. Truly one half the world does not know how the other half lives.

Men have been talking now for a week at the post-office about the age of the great elm, as a matter inter-

¹ *Vide 27th inst.*

esting but impossible to be determined. The very chop-pers and travellers have stood upon its prostrate trunk and speculated upon its age, as if it were a profound mystery. I stooped and read its years to them (127 at nine and a half feet), but they heard me as the wind that once sighed through its branches. They still surmised that it might be two hundred years old, but they never stooped to read the inscription. Truly they love darkness rather than light. One said it was probably one hundred and fifty, for he had heard somebody say that for fifty years the elm grew, for fifty it stood still, and for fifty it was dying. (Wonder what portion of his career he stood still!) Truly all men are not men of science. They dwell within an integument of prejudice thicker than the bark of the cork-tree, but it is valuable chiefly to stop bottles with. Tied to their buoyant prejudices, they keep themselves afloat when honest swimmers sink.

Talking with Miss Mary Emerson this evening, she said, "It was not the fashion to be so original when I was young." She is readier to take my view—look through my eyes for the time—than any young person that I know in the town.

The white maple buds look large, with bursting downy scales as in spring.

I observe that the crust is strongest over meadows, though the snow is deep there and there is no ice nor water beneath, but in pastures and upland generally I break through. Probably there is more moisture to be frozen in the former places, and the snow is more compact.

Jan. 27. I have just sawed a wheel an inch and three quarters thick off the end of (apparently) a stick of red oak in my pile. I count twenty-nine rings, and about the same number of rings, or divisions of some kind, with more or less distinctness, in the bark, which is about a quarter of an inch thick. Is not the whole number of rings contained in the bark of all trees which have a bark externally smooth? This stick has two centres of growth, each a little one side of the middle. I trace one easily to a limb which was cut off close to the tree about three and a half inches above the lower side of the section. The two centres are one inch apart on the lower side, two inches and five eighths on the upper side. There are three complete circles to the main one on the lower side, and ten on the upper side, before they coalesce; hence it was seven years closing up through an inch and three quarters of height. There is a rough ridge, confined to the bark only and about a quarter of an inch high, extending from the crotch diagonally down the tree, apparently to a point over the true centre of growth.

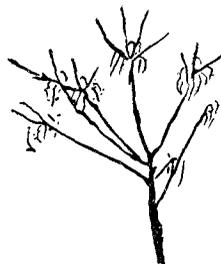


P. M.—Walked on the river from the old stone to Derby's Bridge. It is open a couple of rods under the stone bridge, but not a rod below it, and also for forty rods below the mouth of Loring's Brook, along the west side, probably because this is a mill-stream. The only other open places within the limits mentioned yesterday are in one or two places close under the bank, and concealed by it, where warm springs issue, the

river, after freezing, having shrunk and the ice settled a foot or eighteen inches there, so that you can see water over its edge.

The white maple at Derby's Bridge measures fifteen feet in circumference at ground, including apparently a very large sucker, and ten feet five inches, at four feet above the ground, not including sucker, there free.

The lodging snow of January 13th, just a fortnight ago, still adheres in deep and conspicuous ridges to large exposed trees, too stubborn to be shaken by the wind, showing from which side the storm came.



The fruit stems of the dog-wood still hold on, and a little fruit. (Of course, the limbs should be smoother.) The outline much like a peach tree, but it is without the numerous small limbs or twigs.

Saw what I think were bass nuts on the snow on the river, at Derby's railroad bridge, probably from up-stream.

Jan. 28. Snowed all day, about two inches falling. They say it snowed about the same all yesterday in New York. Cleared up at night.

Jan. 29. P. M. — Measured the snow in the same places measured the 16th and 23d, having had, except yesterday, fair weather and no thaw.¹

¹ Add 2 for ice at bottom. *Vide* Feb. 12th.

		Average of both sides.
West of railroad, average	11½ +	13½ -
On the 23d it was	11½	12½ +
" " 16th " "	12½	13½
Trillium Woods to-day	14 ⁶ / ₁₆	
the 23d	13½ +	
16th	17	
East of railroad,	17	
	14	
	15½	

As I measured oftener west than east of railroad, the snow is probably about fourteen on a level in open fields now, or *quite* as deep as at any time this winter. Yet it has apparently been settling a little the last six days. In the woods, apparently, it has also been settling, but it is not so deep there as on the 16th, because it settled rapidly soon after that date. It is deeper east of railroad, evidently because it lies behind it like a wall, though I measure from six to ten or twelve rods off on that side. Since the 13th there has been at no time less than one foot on a level in open fields.

It is interesting to see near the sources, even of small streams or brooks, which now flow through an open country, perhaps shrunken in their volume, the traces of ancient mills, which have devoured the primitive forest, the earthen dams and old sluiceways, and ditches and banks for obtaining a supply of water. These relics of a more primitive period are still frequent in our midst. Such, too, probably, has been the history of the most thickly settled and cleared countries of Europe. The saw-miller is neighbor and successor to the Indian.

It is observable that not only the moose and the wolf disappear before the civilized man, but even many

species of insects, such as the black fly and the almost microscopic "no-see-em." How imperfect a notion have we commonly of what was the actual condition of the place where we dwell, three centuries ago!

For the most part the farmers have not been able to get into the woods for the last fortnight or more, on account of the snow, and some who had not got up their wood before are now put to their trumps, for though it may not be more than eighteen inches deep on a level in sprout-lands, the crust cuts the legs of the cattle, and the occasional drifts are impassable. Sometimes, with two yoke of oxen and a horse attached to the sled, the farmer attempts to break his way into his lot, one driving while another walks before with a shovel, treading and making a path for the horse, but they must take off the cattle at last and turn the sled with their hands.

Miss Minott has been obliged to have some of her locusts about the house cut down. She remembers when the whole top of the elm north of the road close to Dr. Heywood's broke off, — when she was a little girl. It must have been there before 1800.

Jan. 30. 8 A. M. — It has just begun to snow, — those little round dry pellets like shot.

George Minott says that he was standing with Bowers (?) and Joe Barrett near Dr. Heywood's barn in the September gale, and saw an elm, twice as big as that which broke off before his house, break off ten feet from the ground, — splinter all up, — and the

barn bent and gave so that he thought it was time to be moving. He saw stones "as big as that [air-tight] stove, blown right out of the wall." So, by bending to the blast, he made his way home. All the *small* buildings on the Walden road across the brook were blown back toward the brook. Minott lost the roof of his shed. The wind was southerly.

As I walked above the old stone bridge on the 27th, I saw where the river had recently been open under the wooded bank on the west side; and recent sawdust and shavings from the pail-factory, and also the ends of saplings and limbs of trees which had been bent down by the ice, were frozen in. In some places some water stood above the ice, and as I stood there, I saw and heard it gurgle up through a crevice and spread over the ice. This was the influence of Loring's Brook, far above.

Stopped snowing before noon, not having amounted to anything.

P. M. — Measured to see what difference there was in the depth of the snow in different adjacent fields as nearly as possible alike and similarly situated. Commenced fifteen or twenty rods east of the railroad and measured across Hubbard's (?), Stow's, and Collier's fields toward a point on the south side of the last, twenty-five rods east of Trillium Woods. These three fields were nearly level, somewhat meadowy, especially the second, and at least twenty-five rods from the nearest disturbing influence, such as the railroad embankment or a wood.

	AB	BC	[CD]	Average of
North	22	20	21	all three,
A Wall and riders	19	27	12	14-. ¹
	14	12	13	
Average 14 $\frac{5}{8}$ Hub's (?)	13	9	8	
	13	9	14	
B Rail fence	17	8	11	
	13	10	15	
Average 12 $\frac{1}{2}$ Stow's	10	10	14	
	21	9	10	
C Rail fence	13	8	14	
and ditch	12	11)137(12 $\frac{1}{2}$	16	
	11		15	
	14		16	
Average 14 Collier's	12		10	
	17		14	
D Wall and riders	16)234(14 $\frac{5}{8}$		21	
South		17)239(14		

The walls, no doubt, gave the first and third fields somewhat more snow. Yet I am inclined to think that in this trial the snow is shallower very nearly as the fields are more moist. It is three inches shallower here than nearer the railroad, where I measured yesterday, showing the effect of that bank very clearly, six to fifteen rods off, but the average is the same obtained yesterday for open fields east and west of railroad, and proves the truth of that measuring. The snow in the first field measured two inches more than that in the second!

The andromeda swamp gave $26\frac{1}{2} + 2$ (on the 12th it was $23\frac{4}{5} + 3$). It has probably been more than $2\frac{1}{2}$ feet, say on the 16th. The *Andromeda calyculata* is now quite covered, and I walk on the crust over an almost uninterrupted plain there; only a few blueberries and

¹ Add 2 for ice at bottom = 16 -. Vide Feb. 12th.

² + 2 = $28\frac{1}{2} +$.

³ + 2 = $25\frac{1}{2}$.

Andromeda paniculata rise above it. Near the last, I break through. It is so light beneath that the crust breaks there in great cakes under my feet, and immediately falls about a foot, making a great hole, so that once pushing my way through — for regularly stepping is out of the question in the weak places — makes a pretty good path.

In Wheeler's squirrel wood, which on the 12th gave 10^1 inches of snow now gives 15^2 which is what I should have judged from the changes in Trillium Wood. They are affected alike.

The sprout-land just south of this wood gives as average of fourteen measurements $21\frac{4}{10}$,³ which I suspect is too much, it is so sheltered a place.

By the railroad against Walden I heard the lisp of a chickadee, and saw it on a sumach. It repeatedly hopped to a bunch of berries, took one, and, hopping



to a more horizontal twig, placed it under one foot and hammered at it with its bill. The snow was strewn with

¹ + 2 = 12.

² + 2 = 17.

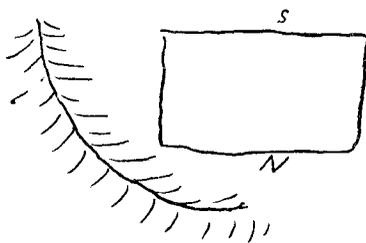
³ + 2 = $23\frac{4}{10}$.

the berries under its foot, but I could see no *shells* of the fruit. Perhaps it clears off the crimson only. Some of the bunches are very large and quite upright there still.

Again, I suspect that on meadows the snow is not so deep and has a firmer crust. In an ordinary storm the depth of the snow will be affected by a wood twenty or more rods distant, or as far as the wood is a fence.

The snow is so light in the swamps under the crust, amid the andromeda, that a cat could almost run there. There are but few tracks of mice, now the snow is so deep. They run underneath.

The drift about Lynch's house is like this:—



There is a strong wind this afternoon from northwest, and the snow of the 28th is driving like steam over the fields, drifting into the roads. On the railroad causeway

it lies in perfectly straight and regular ridges a few feet apart, northwest and southeast. It is dry and scaly, like coarse bran. Now that there is so much snow, it slopes up to the tops of the walls on both sides.

What a difference between life in the city and in the country at present, — between walking in Washington Street, threading your way between countless sledges and travellers, over the discolored snow, and crossing Walden Pond, a spotless field of snow surrounded by woods, whose intensely blue shadows and your own

are the only objects. What a solemn silence reigns here!

Jan. 31. P. M. — Up North Branch.

There are a few inches of light snow on top of the little, hard and crusted, that I walked on here last, above the snow ice. The old tracks are blotted out, and new and fresher ones are to be discerned. It is a *tabula rasa*. These fresh falls of snow are like turning over a new leaf of Nature's *Album*. At first you detect no track of beast or bird, and Nature looks more than commonly silent and blank. You doubt if anything has been abroad, though the snow fell three days ago, but ere long the track of a squirrel is seen making to or from the base of a tree, or the hole where he dug for acorns, and the shells he dropped on the snow around that stump.

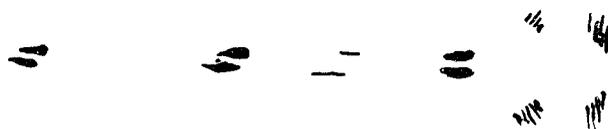
The wind of yesterday has shaken down countless oak leaves, which have been driven hurry-scurry over this smooth and delicate and unspotted surface, and now there is hardly a square foot which does not show some faint trace of them. They still spot the snow thickly in many places, though few can be traced to their lairs. More hemlock cones also have fallen and rolled down the bank. The fall of these withered leaves after each rude blast, so clean and dry that they do not soil the snow, is a phenomenon quite in harmony with the winter.

Perhaps the tracks of the mice are the most amusing of any, they take such various forms and, though small, are so distinct. Here is where one has come down the bank and hopped meanderingly across the river.

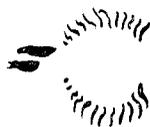


Or  An inch and a quarter wide by five, six, or seven apart from centre to centre.

But what track is this, just under the bank?



It must be a bird, which at last struck the snow with its wings and took to flight. There were but four hops in all, and then it ended as above, though there was nothing near enough for it to hop upon from the snow. The form of the foot was somewhat like that of a squirrel, though only the outline was distinguished. The foot was about two inches long, and it was about two inches from outside of one foot to outside of the other. Sixteen inches from hop to hop, the rest in proportion. Looking narrowly, I saw where one wing struck the bank ten feet ahead, thus:  as it passed. A quarter of a mile down-stream  it occurred again, thus:

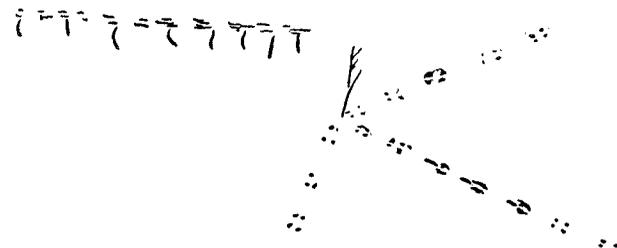


and near by still less of a track, but marks as if it had pecked in the snow. Could it be the track of a crow with its toes unusually close together? Or was it an owl?¹

Some creature has been eating elm blossom-buds and dropping them over the snow.

¹ Probably a crow. *Vide* Feb. 1st. Hardly a doubt of it.

The tracks of the mice suggest extensive hopping in the night and going a-gadding. They commence and terminate in the most insignificant little holes by the side of a twig or tuft, and occasionally they give us the type of their tails very distinctly, even sideways to the course on a bank-side, thus:—



Saw also the tracks, probably of a muskrat, for a few feet leading from hole to hole just under the bank.