

JOURNAL

VOLUME XIV

THE JOURNAL OF
HENRY DAVID THOREAU

VOLUME XIV

I

AUGUST, 1860 (ÆT. 43)

Aug. 1. P. M. — To Cliffs.

The earliest corn has shed its pollen, say a week or ten days. Rye, wheat, and oats and barley have bloomed, say a month.

I stand at the wall-end on the Cliffs and look over the Miles meadow on Conantum. It is an unusually clear day after yesterday's rain.

How much of beauty — of color, as well as form — on which our eyes daily rest goes unperceived by us! No one but a botanist is likely to distinguish nicely the different shades of green with which the open surface of the earth is clothed, — not even a landscape-painter if he does not know the species of sedges and grasses which paint it. With respect to the color of grass, most of those even who attend peculiarly to the aspects of Nature only observe that it is more or less dark or light, green or brown, or velvety, fresh or parched, etc. But if you are studying grasses you look for another and different beauty, and you find it, in the wonderful variety of color, etc., presented by the various species.

Take the bare, unwooded earth now, and consider the beautiful variety of shades (or tints?) of green that clothe it under a bright sun. The pastured hills of Conantum, now just imbrowned (probably by the few now stale flowering tops of the red-top which the cows have avoided as too wiry), present a hard and solid green or greenish brown, just touched here and there delicately with light patches of sheep's fescue (though it may be only its radical leaves left), as if a dew lay on it there, — and this has some of the effect of a watered surface, — and the whole is dotted with a thousand little shades of projecting rocks and shrubs. Then, looking lower at the meadow in Miles's field, that is seen as a bright-yellow and sunny stream (yet with a slight tinge of glaucous) between the dark-green potato-fields, flowing onward with windings and expansions, and, as it were, with rips and waterfalls, to the river meadows.

Again, I sit on the brow of the orchard, and look northwest down the river valley (at mid-afternoon). There flows, or rests, the calm blue winding river, lake-like, with its smooth silver-plated sides, and wherever weeds extend across it, there too the silver plate bridges it, like a spirit's bridge across the Styx; but the rippled portions are blue as the sky. This river reposes in the midst of a broad brilliant yellow valley amid green fields and hills and woods, as if, like the Nanking or Yang-ho (or what-not), it flowed through an Oriental Chinese meadow where yellow is the imperial color. The immediate and raised edge of the river, with its willows and button-bushes and polygonums, is a light

green, but the immediately adjacent low meadows, where the sedge prevails, is a brilliant and cheerful yellow, intensely, incredibly bright, such color as you never see in pictures; yellow of various tints, in the lowest and sedgiest parts deepening to so much color as if gamboge had been rubbed into the meadow there; the most cheering color in all the landscape; shaded with little darker isles of green in the midst of this yellow sea of sedge. Yet it is the bright and cheerful yellow, as of spring, and with nothing in the least autumnal in it. How this contrasts with the adjacent fields of red-top, now fast falling before the scythe!

When your attention has been drawn to them, nothing is more charming than the common colors of the earth's surface. See yonder flashing field of corn through the *shimmering* air. (This was said day before yesterday.)

The deciduous woods generally have now and for a long time been nearly as dark as the pines, though, unlike the pines, they show a general silveriness.

For some days have seen stigmas of what I have called *Cyperus dentatus*, but it is evidently later than the *diandrus*.

See a berry (not ripe) of the two-leaved Solomon's-seal dropped at the mouth of a mouse or squirrel's hole, and observe that many are gone from these plants, as if plucked by mice.

The sphagnum shows little black-balled drumsticks now. The nuthatch is active now. Meadow-haying commenced. *Cinna arundinacea* (?) almost.

Looked in two red maple swamps to find the young plants. If you look carefully through a dense red maple

swamp now, you find many little maples, a couple of inches high which have sprung up chiefly on certain spots alone, especially where the seed has fallen on little beds of sphagnum, which apparently have concealed the seed at the same time that they supplied the necessary moisture. There you find the little tree already deeply rooted, while the now useless winged seed lies empty near by, with its fragile wing half wasted away, as if wholly unrelated to that plant, — not visibly attached, but lying empty on one side. But so far as I look, I see only one maple to a seed, but, indeed, I see only a single seed at a time. You do not find dense groves of them generally, as you might expect from the abundance of seed that falls.

Nevertheless, you will be surprised, on looking through a large maple swamp which two months ago was red with maple seed falling in showers around, at the very small number of maple seeds to be found there, and probably every one of these will be empty. The little maples appear oftenest to have sprung from such as fell into crevices in the moss or leaves and so escaped. Indeed, almost every seed that falls to the earth is picked up by some animal or other whose favorite and perhaps peculiar food it is. They are daily busy about it in the season, and the few seeds which escape are exceptions. There is at least a squirrel or mouse to a tree. If you postpone your search but for a short time, you and yourself only gleaning after them. You may find several of their holes under every tree, if not within it. They ransack the woods. Though the seed may be almost microscopic, it is nuts to them; and this apparently is

one of the principal ends which these seeds were intended to serve.

Look under a nut tree a month after the nuts have fallen, and see what proportion of sound nuts to the abortive ones and shells you will find ordinarily. They have been dispersed, and many effectually planted, far and wide by animals. You have come, you would say, after the feast was over, and are presented with shells only. It looks like a platform before a grocery. These little creatures must live, and, pray, what are they to eat if not the fruits of the earth? — *i. e.* the graminivorous [*sic*] ones.¹

Aug. 2. The wing of the sugar maples is dry and ripe to look at, but the seed end and seed are quite green. I find, as Michaux did, one seed always abortive.

P. M. — Up Assabet.

The young red maples have sprung up chiefly on the sandy and muddy shores, especially where there is a bay or eddy.

At 2 P. M. the river is twelve and seven eighths above summer level, higher than for a long time, on account of the rain of the 31st. Seed of hop-hornbeam not ripe. The button-bush is about in prime, and white lilies considerably past prime. Mikania begun, and now, perhaps, the river's brink is at its height. The black willow down is even yet still seen here and there on the water.

The river, being raised three or four inches, looks quite full, and the bur-reed, etc., is floating off in con-

¹ *Vide* below.

siderable masses. See those round white patches of eggs on the upright sides of dark rocks.

There is now and of late a very thin, in some lights purplish, scum on the water, outside of coarser drift that has lodged, — a brown scum, somewhat gossamer-like as it lies, and browner still on your finger when you take it up. What is it? The pollen of some plant?

As we rest in our boat under a tree, we hear from time to time the loud snap of a wood pewee's bill overhead, which is incessantly diving to this side and that after an insect and returning to its perch on a dead twig. We hear the sound of its bill when it catches one.

In huckle-berry fields I see the seeds of berries recently left on the rocks where birds have perched. How many of these small fruits they may thus disseminate!

Aug. 3. The knotty-rooted cyperus out some days at least.

Aug. 4. 8.30 A. M. — Start for Monadnock.¹

Begins to rain at 9 A. M., and rains from time to time thereafter all day, the mountain-top being constantly enveloped in clouds.

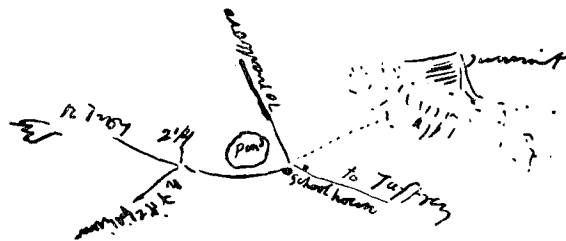
Notice in Troy much of the *cyperinus* variety of wool-grass, now done, of various heights. Also, by roadside, the *Ribes Cynosbati*, with its prickly berries now partly reddened but hardly ripe. Am exhilarated by the peculiar raspberry scent by the roadside this wet day — and of the dicksonia fern. Raspberries still quite common,

¹ [See account of the Monadnock excursion in *Familiar Letters*, pp. 368-372; Riv. 428-433.]

though late. The high blackberries, the mulberry kind, all still green and red; and also on the 9th, except one berry on a rock.

There was a little sunshine on our way to the mountain, but the cloud extended far down its sides all day, so that one while we mistook Gap Monadnock for the true mountain, which was more to the north.

According to the guide-board it is two and one fourth miles from Troy to the first fork in the road near the little pond and schoolhouse, and I should say it was near two miles from there to the summit, — all the way uphill from the meadow.



We crossed the immense rocky and springy pastures, containing at first raspberries, but much more hard-hack in flower, reddening them afar; where cattle and horses collected about us, sometimes came running to us, as we thought for society, but probably not. I told Bent of it, — how they gathered about us, they were so glad to see a human being, — but he said I might put it in my book so, it would do no harm, but then the fact was they came about me for salt. "Well," said I, "it was probably because I had so much salt in my constitution." Said he, "If you had had a little salt with you [you]

could hardly have got away from them." "Well," said I, "[I] had some salt in my pocket." "That's what they smelt," said he. Cattle, young and old, with horns in all stages of growth, — young heifers with budding horns, — and horses with a weak [?] Sleepy-David look, though sleek and handsome. They gathered around us while we took shelter under a black spruce from the rain.

We were wet up to our knees before reaching the woods or steep ascent where we entered the cloud. It was quite dark and wet in the woods, from which we emerged into the lighter cloud about 3 P. M., and proceeded to construct our camp, in the cloud occasionally amounting to rain, where I camped some two years ago.

Choosing a place where the spruce was thick in this sunken rock yard, I cut out with a little hatchet a space for a camp in their midst, leaving two stout ones six feet apart to rest my ridge-pole on, and such limbs of these as would best form the gable ends. I then cut four spruces as rafters for the gable ends, leaving the stub ends of the branches to rest the cross-beams or girders on, of which there were two or three to each slope; and I made the roof very steep. Then cut an abundance of large flat spruce limbs, four or five feet long, and laid them on, shingle-fashion, beginning at the ground and covering the stub ends. This made a foundation for two or three similar layers of smaller twigs. Then made a bed of the same, closed up the ends somewhat, and all was done. All these twigs and boughs, of course, were dripping wet, and we were wet through up to our middles. But we made a good fire at the door, and in an hour or two were completely dried.

The most thickly leaved and flattest limbs of the spruce are such as spread flat over the rocks far and wide (while the upper ones were more bushy and less flat); not the very lowest, which were often partly under the surface and but meagrely leafed, but those close above them.

Standing and sitting before the fire which we kindled under a shelving rock, we could dry us much quicker than at any fireside below, for, what with stoves and reduced fireplaces, they could not have furnished such blaze or heat in any inn's [?] kitchen or parlor. This fire was exactly on the site of my old camp, and we burned a hole deep into the withered remains of its roof and bed.

It began to clear up and a star appeared at 8 P. M. Lightning was seen far in the south. Cloud, drifting cloud, alternated with moonlight all the rest of the night. At 11.30 P. M. I heard a nighthawk. Maybe it hunted then because prevented by the cloud at evening.

I heard from time to time through the night a distant sound like thunder or a falling of a pile of lumber, and I suspect that this may have been the booming of night-hawks at a distance.

Aug. 5. The wind changed to northerly toward morning, falling down from over the summit and sweeping through our camp, open on that side, and we found it rather cold!

About an hour before sunrise we heard again the nighthawk; also the robin, chewink, song sparrow,

Fringilla hyemalis; and the wood thrush from the woods below.

Had a grand view of the summit on the north now, it being clear. I set my watch each morning by sunrise, and this morning the lichens on the rocks of the southernmost summit (south of us), just lit by the rising sun, presented a peculiar yellowish or reddish brown light (being wet) which they did not any morning afterward. The rocks of the main summit were olive-brown, and C. called it the Mount of Olives.

I had gone out before sunrise to gather blueberries, — fresh, dewy (because wet with yesterday's rain), almost crispy blueberries, just in prime, much cooler and more grateful at this hour, — and was surprised to hear the voice of people rushing up the mountain for berries in the wet, even at this hour. These alternated with bright light-scarlet bunchberries not quite in prime.

The sides and angles of the cliffs, and their rounded brows (but especially their southeast angles, for I saw very little afterward on the north side; indeed, the cliffs or precipices are not on that side), were clothed with these now lively olive-brown lichens (umbilicaria), alike in sun and shade, becoming afterward and generally dark olive-brown when dry. *Vide* my specimens. Many of the names inscribed on the summit were produced by merely rubbing off the lichens, and they are thus distinct for years.

At 7.30 A. M. for the most part in cloud here, but the country below in sunshine. We soon after set out to walk to the lower southern spur of the mountain. It is chiefly a bare gray and extremely diversified rocky sur-

face, with here and there a spruce or other small tree or bush, or patches of them, or a little shallow marsh on the rock; and the whole mountain-top for two miles was covered, on countless little shelves and in hollows between the rocks, with low blueberries of two or more species or varieties, just in their prime. They are said to be later here than below. Beside the kinds (black and blue *Pennsylvanicum*) common with us, there was the downy *Vaccinium Canadense* and a form or forms intermediate between this and the former, *i. e.* of like form but less hairy. The *Vaccinium Canadense* has a larger leaf and more recurved and undulating on its surface, and generally a lighter green than the common. There were the blue with a copious bloom, others simply black (not shiny, as ours commonly) and on largish bushes, and others of a peculiar blue, as if with a skim-coat of blue, hard and thin, as if glazed, such as we also have. The black are scarce as with us.

These blueberries grew and bore abundantly almost wherever anything else grew on the rocky part of the mountain, — except perhaps the very wettest of the little swamps and the thickest of the little thickets, — quite up to the summit, and at least thirty or forty people came up from the surrounding country this Sunday to gather them. When we behold this summit at this season of the year, far away and blue in the horizon, we may think of the blueberries as blending their color with the general blueness of the mountain. They grow alike in the midst of the cladonia lichens and of the lambkill and moss of the little swamps. No shelf amid the piled rocks is too high or dry for them, for every-

where they enjoy the cool and moist air of the mountain. They are evidently a little later than in Concord, — say a week or ten days later. Blueberries of every degree of blueness and of bloom. There seemed to be fewer of them on the more abrupt and cold westerly and northwesterly sides of the summit, and most in the hollows and shelves of the plateau just southeast of the summit.

Perhaps the prettiest berry, certainly the most novel and interesting to me, was the mountain cranberry, now grown but yet hard and with only its upper cheek red. They are quite local, even on the mountain. The vine is most common close to the summit, but we saw very little fruit there; but some twenty rods north of the brow of this low southern spur we found a pretty little dense patch of them between the rocks, where we gathered a pint in order to make a sauce of them. They here formed a dense low flat bed, covering the rocks for a rod or two, some lichens, green mosses, and the mountain potentilla mingled with them; and they rose scarcely more than one inch above the ground. These vines were only an inch and a half long, clothed with small, thick, glossy leaves, with two or three berries together, about as big as huckleberries, on the recurved end, with a red cheek uppermost and the other light-colored. It was thus a dense, firm sward [?] of glossy little leaves dotted with bright-red berries. They were very easy to collect, for you only made incessant dabs at them with all your fingers together and the twigs and leaves were so rigid that you brought away only berries and no leaves.

I noticed two other patches where the berries were thick, *viz.* one a few rods north of the little rain-water lake of the rocks, at the first, or small, meadow (source of Contoocook) at northeast end of the mountain, and another not more than fifty rods northwest of the summit, where the vines were much ranker and the berries larger. Here the plants were four or five inches high, and there were three or four berries of pretty large huckleberry size at the end of each, and they branched like little bushes. In each case they occupied almost exclusively a little sloping shelf between the rocks, and the vines and berries were especially large and thick where they lay up against the sloping sunny side of the rock.

We stewed these berries for our breakfast the next morning, and thought them the best berry on the mountain, though, not being quite ripe, the berry was a little bitterish — but not the juice of it. It is such an acid as the camper-out craves. They are, then, somewhat earlier than the common cranberry. I do not know that they are ever gathered hereabouts. At present they are very firm berries, of a deep, dark, glossy red. Doubtless there are many more such patches on the mountain.¹

We heard the voices of many berry-pickers and visitors to the summit, but neither this nor the camp we built afterward was seen by any one.

¹ Brought some home, and stewed them the 12th, and all thought them quite like, and as good as, the common cranberry. Yet George Emerson speaks of it as "austere" and inferior to the common cranberry.

P. M. — Walked to the wild swamp at the northeast spur. That part is perhaps the most interesting for the wild confusion of its variously formed rocks, and is the least, if at all, frequented. We found the skull and jaws of a large rodent, probably a hedgehog, — larger than a woodchuck's, — a considerable quantity of dry and hard dark-brown droppings, of an elliptical form, like very large rat-droppings, somewhat of a similar character but darker than the rabbit's, and I suspect that these were the porcupine's.

Returned over the top at 5 P. M., after the visitors, men and women, had descended, and so to camp.

Aug. 6. The last was a clear, cool night. At 4 A. M. see local lake-like fogs in some valleys below, but there is none here.

This forenoon, after a breakfast on cranberries, leaving, as usual, our luggage concealed under a large rock, with other rocks placed over the hole, we moved about a quarter of a mile along the edge of the plateau eastward and built a new camp there. It was [a] place which I had noticed the day before, where, sheltered by a perpendicular ledge some seven feet high and close to the brow of the mountain, grew five spruce trees. Two of these stood four feet from the rock and six or more apart; so, clearing away the superfluous branches, I rested stout rafters from the rock-edge to limbs of the two spruces and placed a plate beam across, and, with two or three cross-beams or girders, soon had a roof which I could climb and shingle. After filling the inequalities with rocks and rubbish, I soon had a sloping floor on

which to make our bed. Lying there on that shelf just on the edge of the steep declivity of the mountain, we could look all over the south and southeast world without raising our heads. The rock running east and west was our shelter on the north.

Our huts, being built of spruce entirely, were not noticeable two or three rods off, for we did [not] cut the spruce amid which they were built more than necessary, bending aside their boughs in order to enter. My companion, returning from a short walk, was lost when within two or three rods, the different rocks and clumps of spruce looked so much alike, and in the moonlight we were liable to mistake some dark recess between two neighboring spruce ten feet off for the entrance to our house. We heard this afternoon the tread of a blueberry-picker on the rocks two or three rods north of us, and saw another as near, south, and, stealing out, we came round from another side and had some conversation with them, — two men and a boy, — but they never discovered our house nor suspected it. The surface is so uneven that ten steps will often suffice to conceal the ground you lately stood on, and yet the different shelves and hollows are so much alike that you cannot tell if one is new or not. It is somewhat like travelling over a huge fan. When in a valley the nearest ridge conceals all the others and you cannot tell one from another.

This afternoon, again walked to the larger northeast swamp, going directly, *i. e.* east of the promontories or part way down the slopes. Bathed in the small rocky basin above the smaller meadow. These two swamps are about the wildest part of the mountain and

most interesting to me. The smaller occurs on the northeast side of the main mountain, *i. e.* at the northeast end of the plateau. It is a little roundish meadow a few rods over, with cotton-grass in it, the shallow bottom of a basin of rock, and out the east side there trickles a very slight stream, just moistening the rock at present and collecting enough in one cavity to afford you a drink. This is evidently a source of the Contoocook, the one I noticed two years ago as such.

The larger swamp is considerably lower and more northerly, separating the northeast spur from the main mountain, probably not far from the line of Dublin. It extends northwest and southeast some thirty or forty rods, and probably leaked out now under the rocks at the northwest end, — though I found water only half a dozen rods below, — and so was a source probably of the Ashuelot. The prevailing grass or sedge in it, growing in tufts in the green moss and sphagnum between the fallen dead spruce timber, was the *Eriophorum vaginatum* (long done) and the *E. gracile*. Also the *Epilobium palustre*, apparently in prime in it, and common wool-grass (*Scirpus Eriophorum*). Around its edge grew the *Chelone glabra* (not yet out), meadow-sweet in bloom, black choke-berry just ripening, red elder (its fruit in prime), mountain-ash, *Carex trisperma* and *Deweyana* (small and slender), and the fetid currant in fruit (in a torrent of rocks at the east end), etc., etc.

I noticed a third, yet smaller, quite small, swamp, yet more southerly, on the edge of the plateau, evidently another source of a river, where the snows melt.

At 5 P. M. we went to our first camp for our remain-

ing baggage. From this point at this hour the rocks of the precipitous summit (under whose south side that camp is placed), lit by the declining sun, were a very light gray, with reddish-tawny touches from the now drying *Aira flexuosa* on the inaccessible shelves and along the seams. Returned to enjoy the evening at the second camp.

Evening and morning were the most interesting seasons, especially the evening. Each day, about an hour before sunset, I got sight, as it were accidentally, of an elysium beneath me. The smoky haze of the day, suggesting a furnace-like heat, a trivial dustiness, gave place to a clear transparent enamel, through which houses, woods, farms, and lakes were seen as in [a] picture indescribably fair and expressly made to be looked at. At any hour of the day, to be sure, the surrounding country looks flatter than it is. Even the great steep, furrowed, and rocky pastures, red with hardhack and raspberries, which creep so high up the mountain amid the woods, in which you think already that you are half-way up, perchance, seen from the top or brow of the mountain are not for a long time distinguished for elevation above the surrounding country, but they look smooth and tolerably level, and the cattle in them are not noticed or distinguished from rocks unless you search very particularly. At length you notice how the houses and barns keep a respectful, and at first unaccountable, distance from these near pastures and woods, though they *are* seemingly flat, that there is a broad neutral ground between the roads and the mountain; and yet when the truth flashes upon you, you have to imagine the long, ascending path through them.

To speak of the landscape generally, the open or cleared land looks like a thousand little swells or tops of low rounded hills, — tent-like or like a low hay-cap spread, — tawny or green amid the woods. As you look down on this landscape you little think of the hills where the traveller walks his horse. The woods have not this swelling look. The most common color of open land (from apex at 5 p. m.) is tawny brown, the woods dark green. At midday the darker green of ever-greens amid the hardwoods is quite discernible half a dozen miles off. But, as the most interesting view is at sunset, so it is the part of [the] landscape nearest to you and most immediately beneath the mountain, where, as usual, there is that invisible gelid haze to glass it.

The nearest house to the mountain which we saw from our camp — one on the Jaffrey road — was in the shadow even of the low southern spur of the mountain which we called the Old South, just an hour before the sun set, while a neighbor on a hill within a quarter of a mile eastward enjoyed the sunlight at least half an hour longer. So much shorter are their days, and so much more artificial light and heat must they obtain, at the former house. It would be a serious loss, methinks, one hour of sunlight every day. *We* saw the sun so much longer. Of course the labors of the day were brought to an end, the sheep began to bleat, the doors were closed, the lamps were lit, and preparations for the night were made there, so much the earlier.

The landscape is shown to be not flat, but hilly, when the sun is half an hour high, by the shadows of the hills.

But, above all, from half an hour to two hours before sunset many western mountain-ranges are revealed, as the sun declines, one behind another, by their dark outlines and the intervening haze; *i. e.*, the ridges are dark lines, while the intervening valleys are a cloud-like haze. It was so, at least, from 6 to 6.30 p. m. on the 6th; and, at 5 p. m. on the 8th, it being very hazy still, I could count in the direction of Saddleback Mountain eight distinct ranges, revealed by the darker lines of the ridges rising above this cloud-like haze. And I might have added the ridge of Monadnock itself within a quarter of a mile of me.

Of course, the last half of these mountain-ridges appeared successively higher and seemed higher, all of them (*i. e.* the last half), than the mountain we were on, as if you had climbed to the heights of the sky by a succession of stupendous terraces reaching as far as you could see from north to south. The Connecticut Valley was one broad gulf of haze which you were soon over. They were the Green Mountains that we saw, but there was no greenness, only a bluish mistiness, in what we saw; and all of Vermont that lay between us and their summit was but a succession of parallel ranges of mountains. Of course, almost all that we mean commercially and agriculturally by Vermont was concealed in those long and narrow haze-filled valleys. I never saw a mountain that looked so high and so melted away at last cloud-like into the sky, as Saddleback this eve, when your eye had clomb to it by these eight successive terraces. You had to begin at this end and ascend step by step to recognize it for a mountain at all. If you

had first rested your eye on *it*, you would have seen it for a cloud, it was so incredibly high in the sky.

After sunset the ponds are white and distinct.¹ Earlier we could distinguish the reflections of the woods perfectly in ponds three miles off.

I heard a cock crow very shrilly and distinctly early in the evening of the 8th. This was the most distinct sound from the lower world that I heard up there at any time, not excepting even the railroad whistle, which was louder. It reached my ear perfectly, to each note and curl, — from some submontane cock. We also heard at this hour an occasional bleat from a sheep in some mountain pasture, and a lowing of a cow. And at last we saw a light here and there in a farmhouse window. We heard no sound of man except the railroad whistle and, on Sunday, a church-bell. Heard no dog that I remember. Therefore I should say that, of all the sounds of the farmhouse, the crowing of the cock could be heard furthest or most distinctly under these circumstances. It seemed to wind its way through the layers of air as a sharp gimlet through soft wood, and reached our ears with amusing distinctness.

Aug. 7. Morning — dawn and sunrise — was another interesting season. I rose always by four or half past four to observe the signs of it and to correct my watch. From our first camp I could not see the sun rise, but only when its first light (yellowish or, rather, pink-



¹ At 5 P. M. the 5th, being on the apex, the small pond by the schoolhouse is mostly smooth plated, with a darker rippled portion in the middle.

ish) was reflected from the lichen-clad rocks of the southern spur. But here, by going eastward some forty rods, I could see the sun rise, though there was invariably a low stratum or bar of cloud in the horizon. The sun rose about five. The tawny or yellowish pastures about the mountain (below the woods; what was the grass?) reflected the auroral light at 4.20 A. M. remarkably, and they were at least as distinct as at any hour.

There was every morning more or less solid white fog to be seen on the earth, though none on the mountain. I was struck by the localness of these fogs. For five mornings they occupied the same place and were about the same in extent. It was obvious that certain portions of New Hampshire and Massachusetts were at this season commonly invested with fog in the morning, while others, or the larger part, were free from it. The fog lay on the lower parts only. From our point of view the largest lake of fog lay in Rindge and southward; and southeast of Fitzwilliam, *i. e.* about Winchendon, very large there. In short, the fog lay in great spidery lakes and streams answering to the lakes, streams, and meadows beneath, especially over the sources of Miller's River and the region of primitive wood thereabouts; but it did [not] rest on lakes always, *i. e.*, where they were elevated, as now some in Jaffrey were quite clear. It suggested that there was an important difference, so far as the health and spirits of the inhabitants were concerned, between the town where there was this regular morning fog and that where there was none. I shall always remember the inhabitants of State Line as dwellers in the fog. The geography and statistics of fog have

not been ascertained. If we awake into a fog, it does not occur to us that the inhabitants of a neighboring town which lies higher may have none, neither do they, being ignorant of this happiness, inform us of it. Yet, when you come to look down thus on the country every morning, you see that here this thick white veil of fog is spread and not there. It was often several hundred feet thick, soon rising, breaking up, and drifting off, or rather seeming to drift away, as it evaporated. There was commonly such a risen fog drifting through the interval between this mountain and Gap Monadnock.

One morning I noticed clouds as high as the Peterboro Hills, — a lifted fog, — ever drifting easterly but making no progress, being dissipated. Also long rolls and ant-eaters of cloud, at last reduced by the sun to mere vertebræ. That morning (the 8th) the great and general cloud and apparently fog combined over the lowest land running southwest from Rindge was apparently five hundred or more feet deep, but our mountain was above all.

This forenoon I cut and measured a spruce on the north side the mountain, and afterward visited the summit, where one of the coast surveyors had been signalling, as I was told, to a mountain in Laconia, some fifty-five miles off, with a glass reflector.

After dinner, descended into the gulf and swamp beneath our camp. At noon every roof in the southern country sloping toward the north was distinctly revealed, — a lit gray.

In the afternoon, walked to the Great Gulf and

meadow, in the midst of the plateau just east of and under the summit.

Aug. 8. Wednesday. 8.30 A. M. Walk round the west side of the summit. Bathe in the rocky pool there, collect mountain cranberries on the northwest side, return over the summit, and take the bearings of the different spurs, etc. Return to camp at noon.

Toward night, walk to east edge of the plateau.

Aug. 9. At 6 A. M., leave camp for Troy, where we arrive, after long pauses, by 9 A. M., and take the cars at 10.5.

I observed these plants on the rocky summit of the mountain, above the forest: —

Raspberry, not common.

Low blueberries of two or three varieties.¹

Bunchberry.

Solidago thyrsoides.

Fetid currant, common; leaves beginning to be scarlet; grows amid loose fallen rocks.

Red cherry, some ripe, and handsome.

Black choke-berry.

Potentilla tridentata, still lingering in bloom.

Aralia hispida, still lingering in bloom.

Cow-wheat, common, still in bloom.

Mountain cranberry, not generally abundant; full grown earlier than lowland ditto.²

Black spruce.

Lambkill, lingering in flower in cool and moist places.

Aster acuminatus, abundant; not generally open, but fairly begun to bloom.

¹ *Vide* p. [11].

² *Vide* p. [12].

Red elder, ripe, apparently in prime, not uncommon.
Arenaria Grœnlandica, still pretty common in flower.
Solidago lanceolata, not uncommon; just fairly begun.
Epilobium angustifolium, in bloom; not common, however.
Epilobium palustre, some time, common in mosses, small and slender.
 Wild holly, common; berries not quite ripe.
Viburnum nudum, common; berries green.
 White pine; saw three or four only, mostly very small.
 Mountain-ash, abundant; berries not ripe; generally very small, largest in swamps.
 Diervilla, not uncommon, still.
 Rhodora, abundant; low, *i. e.* short.
 Meadow-sweet, abundant, apparently in prime.
 Hemlocks; two little ones with rounded tops.
Chelone glabra, not yet; at northeast swamp-side.
 Yarrow.
 Canoe birch, very small.
Clintonia borealis, with fruit.
 Checkerberry.
 Gold-thread.
 One three-ribbed goldenrod, northwest side (not *Canadense*).
 Tall rough goldenrod, not yet; not uncommon.
Populus tremuliformis, not very common.
Polygonum cilinode, in bloom.
 Yellow birch, small.
 Fir, a little: four or five trees noticed.
 Willows, not uncommon, four or five feet high.
 Red maple, a very little, small.
 Water andromeda, common about the bogs.
 Trientalis.
 Pearly everlasting, out.
Diplopappus umbellatus, in bloom, not common (?); northeast swamp-side, also northwest side of mountain.
Juncus trifidus.
 Some *Juncus paradoxus*? } about edge of marshes.
 Some *Juncus acuminatus*?

CYPERACEÆ

Eriophorum gracile, abundant, whitening the little swamps.
Eriophorum vaginatum, abundant, little swamps, long done, (this the coarse grass in tufts, in marshes).
 Wool-grass, not uncommon, (common kind).
Carex trisperma (?) or *Deweyana*, with large seeds, slender and drooping, by side of northeast swamp. *Vide* press.
Carex scoparia? or *straminea*? a little.
C. debilis.
Carex, small, rather close-spiked, *C. canescens*-like (?), common.
 A fine grass-like plant very common, perhaps *Eleocharis tenuis*; now without heads, but marks of them.

GRASSES

Aira flexuosa.
Glyceria elongata, with appressed branches (some purplish), in swamp.
 Blue-joint, apparently in prime, one place.
Festuca ovina, one place.
Cinna arundinacea, one place.
Agrostis scabra (?), at our spring, *q. v.*

FERNS AND LICHENS, ETC.

A large greenish lichen flat on rocks, of a peculiarly concentric growth, *q. v.*
 Some common sulphur lichen.
 The very bright handsome crustaceous yellow lichen, as on White Mts., *q. v.*
 Two or three umbilicaria lichens, *q. v.*, giving the dark brown to the rocks.
 A little, in one place, of the old hat umbilicaria, as at Flint's Pond Rock.
 Green moss and sphagnum in the marshes.
 Two common cladonias, white and greenish.
 Stereocaulon.
Lycopodium complanatum, one place.
Lycopodium annotinum, not very common.
 Common polypody.



Dicksonia fern, *q. v.*

Sensitive fern, and various other common ones.

I see that in my last visit, in June, '58, I also saw here Labrador tea (on the north side), two-leaved Solomon's-seal, *Amelanchier Canadensis* var. *oligocarpa* and var. *oblongifolia*, one or two or three kinds of willows, a little mayflower, and chiogenes, and *Lycopodium clavatum*.

The prevailing trees and shrubs of the mountain-top are, in order of commonness, etc., low blueberry, black spruce, lambkill, black choke-berry, wild holly, *Viburnum nudum*, mountain-ash, meadow-sweet, rhodora, red cherry, canoe birch, water andromeda, fetid currant.

The prevailing and characteristic smaller plants, excepting grasses, cryptogamic, etc.: *Potentilla tridentata*, *Solidago thyrsoides*, bunchberry, cow-wheat, *Aster acuminatus*, *Arenaria Grælandica*, mountain cranberry, *Juncus trifidus*, *Clintonia borealis*, *Epilobium palustre*, *Aralia hispida*.

Of *Cyperaceæ* the most common and noticeable now were *Eriophorum gracile* and *vaginatum*, a few sedges, and perhaps the grass-like *Eleocharis tenuis*.

The grass of the mountain now was the *Aira flexuosa*, large and abundant, now somewhat dry and withered, on all shelves and along the seams, quite to the top; a pinkish tawny now. Most would not have noticed or detected any other. The other kinds named were not common. You would say it was a true mountain grass. The only grass that a careless observer would notice. There was nothing like a sod on the mountain-top. The tufts of *J. trifidus*, perhaps, came the nearest to it.

The black spruce is the prevailing tree, commonly six or eight feet high; but very few, and those only in the most sheltered places, as hollows and swamps, are of regular outline, on account of the strong and cold winds with which they have to contend. Fifteen feet high would be unusually large. They cannot grow here without some kind of lee to start with. They commonly consist of numerous flat branches close above one another for the first foot or two, spreading close over the surface and filling and concealing the hollows between the rocks; but exactly at a level with the top of the rock which shelters them they cease to have any limbs on the north side, but all their limbs now are included within a quadrant between southeast and southwest, while the stem, which is always perfectly perpendicular, is bare and smooth on the north side; yet it is led onward at the top by a tuft of tender branches a foot in length and spreading every way as usual, but the northern part of these successively die and disappear. They thus remind you often of masts of vessels with sails set on one side, and sometimes one of these almost bare masts is seen to have been broken short off at ten feet from the ground, such is the violence of the wind there. I saw a spruce, healthy and straight, full sixteen feet without a limb or the trace of a limb on the north side. When building my camp, in order to get rafters six feet long and an inch and a half in diameter at the small end, I was obliged to cut down spruce at least five inches in diameter at one foot from the ground. So stout and tapering do they grow. They spread so close to the rocks that the lower branches are often half worn away for a

foot in length by their rubbing on the rocks in the wind, and I sometimes mistook the creaking of such a limb for the note of a bird, for it is just such a note as you would expect to hear there. The two spruce which formed the sides of my second camp had their lower branches behind the rock so thick and close, and, on the outsides of the quadrant, so directly above one another perpendicularly, that they made two upright side walls, as it were, very convenient to interlace and make weather-tight.

I selected a spruce growing on the highest part of the plateau east of the summit, on its north slope, about as high as any tree of its size, to cut and count its rings. It was five feet five inches high. As usual, all its limbs except some of the leading twigs extended toward the south. One of the lowermost limbs, so close to the ground that I thought its green extremity was a distinct tree, was ten feet long. There were ten similar limbs (though not so long) almost directly above one another, within two feet of the ground, the largest two inches thick at the butt. I cut off this tree at one foot from the ground. It was there five inches in diameter and had forty-four rings, but four inches of its growth was on the south side the centre and only one inch on the north side. I cut it off again nineteen inches higher and there were thirty-five rings.

Our fuel was the dead spruce — apparently that which escaped the fire some forty years ago!! — which lies spread over the rocks in considerable quantity still, especially at the northeast spur. It makes very good dry fuel, and some of it is quite fat and sound. The

spruce twigs were our bed. I observed that, being laid bottom upward in a hot sun, as at the foot of our bed, the leaves turned pale-brown, as if boiled, and fell off very soon.

The black spruce is certainly a very wild tree, and loves a primitive soil just made out of disintegrated granite.

After the low blueberry I should say that the lamb-kill was the commonest shrub. The black choke-berry also was very common, but this and the rhodora were both dwarfish. Though the meadow-sweet was very common, I did not notice any hardhack; yet it was exceedingly prevalent in the pastures below.

The *Solidago thyrsoides* was the goldenrod of the mountain-top, from the woods quite to the summit. Any other goldenrod was comparatively scarce. It was from two inches to two feet high. It grew both in small swamps and in the seams of the rocks everywhere, and was now in its prime.

The bunchberry strikes one from these parts as much as any, — about a dozen berries in a dense cluster, a lively scarlet on a green ground.

Spruce was the prevailing tree; blueberry, the berry; *S. thyrsoides*, the goldenrod; *A. acuminatus*, the aster (the only one I saw, and very common); *Juncus trifidus*, the juncus; and *Aira flexuosa*, the grass, of the mountain-top.

The two cotton-grasses named were very common and conspicuous in and about the little meadows.

The *Juncus trifidus* was the common grass (or grass-

like plant) of the very highest part of the mountain, — the peak and for thirty rods downward, — growing on the shelves and especially on the edges of the *scars* rankly, and on this part of the mountain almost alone had it fruited, — for I think that I saw it occasionally lower and elsewhere on the rocky portion without fruit.

The apparently common green and white cladonias, together with yet whiter stereocaulon, grew all over the flat rocks in profusion, and the apparently common greenish rock lichen (*q. v.* in box) grew concentricwise in large circles on the slopes of rocks also, not to mention the common small umbilicaria (*q. v.*) of one or two kinds which covered the brows and angles of the rocks.

The berries now ripe were: blueberries, bunchberries, fetid currant, red cherry, black choke-berry (some of them), mountain cranberry (red-checked and good cooked), red elder (quite showy), *Clintonia borealis*, raspberry (not common). And berries yet green were: *Aralia hispida* (ripe in Concord, *much* of it), wild holly (turning), *Viburnum nudum* (green), mountain-ash.

The birds which I noticed were: robins, chewinks, *F. hyemalis*, song sparrow, nighthawk, swallow (a few, probably barn swallow, one flying over the extreme summit), crows (sometimes flew over, though mostly heard in the woods below), wood thrush (heard from woods below); and saw a warbler with a dark-marked breast and yellowish angle to wing and white throat,

and heard a note once like a very large and powerful nuthatch. Some small hawks.

The bird peculiar to the mountain was the *F. hyemalis*, and perhaps the most common, flitting over the rocks, unless the robin and chewink were as common. These, with the song sparrow and wood thrush, were heard regularly each morning. I saw a robin's nest in one of the little swamps. The wood thrush was regularly heard late in the afternoon, its strain coming up from the woods below as the shadows were lengthening.

But, above all, this was an excellent place to observe the habits of the nighthawks. They were heard and seen regularly at sunset, — one night it was at 7.10, or exactly at sunset, — coming upward from the lower and more shaded portion of the rocky surface below our camp, with their *spark spark*, soon answered by a companion, for they seemed always to hunt in pairs, — yet both would dive and boom and, according to Wilson, only the male utters this sound. They pursued their game thus a short distance apart and some sixty or one hundred feet above the gray rocky surface, in the twilight, and the constant *spark spark* seemed to be a sort of call-note to advertise each other of their neighborhood. Suddenly one would hover and flutter more stationarily for a moment, somewhat like a kingfisher, and then dive almost perpendicularly downward with a rush, for fifty feet, frequently within three or four rods of us, and the loud booming sound or rip was made just at the curve, as it ceased to fall, but whether voluntarily or involuntarily I know not. They appeared to be diving for their insect prey. What eyes they must

have to be able to discern it *beneath* them against the rocks in the twilight! As I was walking about the camp, one flew low, within two feet of the surface, about me, and lit on the rock within three rods of me, and uttered a harsh note like *c-o-w, c-o-w*, — hard and gritty and allied to their common notes, — which I thought expressive of anxiety, or to alarm me, or for its mate.

I suspect that their booming on a distant part of the mountain was the sound which I heard the first night which was like very distant thunder, or the fall of a pile of lumber.

They did not fly or boom when there was a cloud or fog, and ceased pretty early in the night. They came up from the same quarter — the shaded rocks below — each night, two of them, and left off booming about 8 o'clock. Whether they then ceased hunting or withdrew to another part of the mountain, I know not. Yet I heard one the first night at 11.30 P. M., but, as it had been a rainy day and did not clear up here till some time late in the night, it may have been compelled to do its hunting then. They began to boom again at 4 A. M. (other birds about 4.30) and ceased about 4.20. By their color they are related to the gray rocks over which they flit and circle.

As for quadrupeds, we saw none on the summit and only one small gray rabbit at the base of the mountain, but we saw the droppings of rabbits all over the mountain, and they must be the prevailing large animal, and we heard the motions probably of a mouse about our camp at night. We also found the skull of a rodent

larger than a woodchuck or gray rabbit, and the tail-bones (maybe of the same) some half-dozen inches long, and saw a large quantity of dark-brown oval droppings (*q. v.*, preserved). I think that this was a porcupine, and I hear that they are found on the mountain. Mr. Wild saw one recently dead near the spring some sixteen years ago. I saw the ordure of some large quadruped, probably this, on the rocks in the pastures beneath the wood, composed chiefly of raspberry seeds.

As for insects: There were countless ants, large and middle-sized, which ran over our bed and inside our clothes. They swarmed all over the mountain. Had young in the dead spruce which we burned. Saw but half a dozen mosquitoes. Saw two or three common yellow butterflies and some larger red-brown ones, and moths. There were great flies, as big as horse-flies, with shining black abdomens and buff-colored bases to their wings. Disturbed a swarm of bees in a dead spruce on the ground, but they disappeared before I ascertained what kind they were. On the summit one noon, *i. e.* on the very apex, I was pestered by great swarms of small black wasps or winged ants about a quarter of an inch long, which fluttered about and settled on my head and face. Heard a *fine* (in the sod) cricket, a dog-day locust once or twice, and a *creaking* grasshopper.

Saw two or three frogs, — one large *Rana fontinalis* in that rocky pool on the southwest side, where I saw the large spawn which I supposed to be bullfrog spawn two years ago, but now think must have been *R. fontinalis*

The rocky area — or summit of the mountain above the forest — which I am describing is of an irregular form from a mile and a half to two miles long, north and south, by three quarters to a mile wide at the widest part, in proportion as you descend lower on the rocks.

There are three main spurs, *viz.* the northeast, or chief, one, toward Monadnock Pond and the village of Dublin; the southerly, to Swan's [?]; and the northerly, over which the Dublin path runs. These afford the three longest walks. The first is the longest, wildest, and least-frequented, and rises to the greatest height at a distance from the central peak. The second affords the broadest and smoothest walk. The third is the highest of all at first, but falls off directly. There are also two lesser and lower spurs, on the westerly side, — one quite short, toward Troy, by which you might come up from that side, the other yet lower, but longer, from north 75° west. But above all, for walking, there is an elevated rocky plateau, so to call it, extending to half a mile east of the summit, or about a hundred rods east of the ravine. This slopes gently toward the south and east by successive terraces of rock, and affords the most amusing walking of any part of the mountain.

The most interesting precipices are on the south side of the peak. The greatest abruptness of descent (from top to bottom) is on the west side between the two lesser ravines.

The northeast spur (of two principal summits beyond the swamp) has the most dead spruce on it.

The handsome ponds near the mountain are a long pond chiefly in Jaffrey, close under the mountain on the

east, with a greatly swelling knoll extending into it on the east side; Monadnock Pond in Dublin, said to be very deep, about north-northeast (between the north-east spur and Dublin village); a large pond with a very white beach much further off in Nelson, about north (one called it Breed's?); Stone Pond, northwesterly, about as near as Monadnock Pond. Also large ponds in Jaffrey, Rindge, Troy; and many more further off.

The basis of my map was the distance from the summit to the second camp, measured very rudely by casting a stone before. Pacing the distance of an easy cast, I found it about ten rods, and thirteen such stone's throws, or one hundred and thirty rods, carried me to the camp. As I had the course, from the summit and from the camp, of the principal points, I could tell the rest nearly enough. It was about fifty rods from the summit to the ravine and eighty more to the camp.

It was undoubtedly Saddleback Mountain which I saw about S. 85° W. What was that elevated part of the Green Mountains about N. 50° W., which one called falsely Camel's Hump? — the next elevated summit north of Saddleback.

It would evidently be a noble walk from Watatic to Goffstown perchance, over the Peterboro mountains, along the very backbone of this part of New Hampshire, — the most novel and interesting walk that I can think of in these parts.

They who simply climb to the peak of Monadnock have seen but little of the mountain. I came not to look *off from* it, but to look *at* it. The view of the pinnacle itself from the plateau below surpasses any view which

you get from the summit. It is indispensable to see the top itself and the sierra of its outline from one side. The great charm is not to look off from a height but to walk over this novel and wonderful rocky surface. Moreover, if you would enjoy the prospect, it is, methinks, most interesting when you look from the edge of the plateau immediately down into the valleys, or where the edge of the lichen-clad rocks, only two or three rods from you, is seen as the lower frame of a picture of green fields, lakes, and woods, suggesting a more stupendous precipice than exists. There are much more surprising effects of this nature along the edge of the plateau than on the summit. It is remarkable what haste the visitors make to get to the top of the mountain and then look away from it.

Northward you see Ascutney and Kearsarge Mountains, and faintly the White Mountains, and others more northeast; but above all, toward night, the Green Mountains.

But what a study for rocks does this mountain-top afford! The rocks of the pinnacle have many regular nearly right-angled slants to the southeast, covered with the dark-brown (or olivaceous) umbilicaria. The rocks which you walk over are often not only worn smooth and slippery, but grooved out, as if with some huge rounded tool,



or they are much oftener convex:

You see huge buttresses or walls put up by Titans, with true joints, only recently loosened by an earthquake as if ready to



topple down. Some of the lichen-clad rocks are of a rude brick-loaf form or small cottage form:

You see large boulders, left just on the edge of the steep descent of the plateau, commonly resting on a few small stones, as if the Titans were in the very act of transporting them when they were interrupted; some left standing on their ends, and almost the only convenient rocks in whose shade you can sit sometimes. Often you come to a long, thin rock, two or three rods long, which has the appearance of having just been split into underpinning-stone, — perfectly straight-edged and parallel pieces, and lying as it fell, ready for use, just as the mason leaves it. Post-stones, door-stones, etc. There were evidences of recent motion as well as ancient.



I saw on the flat sloping surface of rock a fresher white space exactly the size and form of a rock which was lying by it and which had lately covered it. What had upset it? There were many of these whitish marks where the dead spruce had lain but was now decayed or gone.

The rocks were not only coarsely grooved but finely scratched from northwest to southeast, commonly about S. 10° E. (but between 5° and 20° east, or, by the true meridian, more yet).¹ I could have steered myself in a fog by them.

Piles of stones left as they were split ready for the

¹ Hitchcock, p. 387, calls the rock of Monadnock granite, and says the scratches are north and south, nearly, and very striking. *Vide* three pages forward.

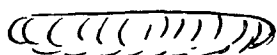
builder. I saw one perfect triangular hog-trough — except that it wanted one end — and which would have been quite portable and convenient in a farmer's yard. The core, four or five feet long, lay one side.



The rocks are very commonly in terraces with a smooth rounded edge to each. The most remarkable of these terraces that I noticed was between the second camp and the summit, say some forty rods from the camp. These terraces were some six rods long and six to ten feet wide, but the top slanting considerably back into the mountain, and they were about four or five feet

high each. There were four such in succession here, running S. 30° E. The edges of

these terraces, here and commonly, were rounded and grooved like the rocks at a waterfall, as if water and gravel had long washed over them.

Some rocks were shaped like huge doughnuts:  The edges of cliffs were frequently lumpishly rounded, covered with lichens, so that you could not stand near the edge. The extreme east and northeast parts of the plateau, especially near the little meadow, are the most interesting for the forms of rocks. Sometimes you see where a huge oblong square stone has been taken out from the edge of a terrace, leaving a space which looks like a giant's grave unoccupied.

On the west side the strata ran north and

south and dipped to east about 60° with the horizon. There were broad veins of white quartz (sometimes one foot wide) running directly many rods.



Near the camp there was a succession of great rocks, their corners rounded semi-circularly and grooved at the same time like the capital of a column reversed. The most rugged walking is on the steep westerly slope.

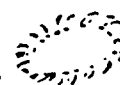


We had a grand view, especially after sunset, as it grew dark, of the *sierra* of the summit's outline west of us, — the teeth of the sierra often turned back toward the summit, — when the rocks were uniformly black in the shade and seen against the twilight.

In Morse's Gazetteer (1797) it is said, "Its base is five miles in diameter north to south, and three from east to west. . . . Its summit is a bald rock." By the summit he meant the very topmost part, which, it seems, was always a "bald rock."

There were all over the rocky summit peculiar yellowish gravelly spots which I called scars, commonly of an oval form, not in low but elevated places, and looking as if a little mound had been cut off there.

The edges of these, on the very pinnacle of the mountain, were formed of the *Juncus trifidus*, now gone to seed. If they had been in hollows, you would have said that they were the bottom of little pools, now dried up, where the gravel and stones had been washed bare. I am not certain about their origin. They suggested some force which had suddenly cut



off and washed or blown away the surface there, like a thunder-spout [*sic*], or lightning, or a hurricane. Such spots were very numerous, and had the appearance of a fresh scar.

Much, if not most, of the rock appears to be what Hitchcock describes and represents as graphic granite (*vide* his book, page 681).

Hitchcock says (page 389) that he learns from his assistant, Abraham Jenkins, Jr., that "on the sides of and around this mountain [Monadnock]¹ diluvial grooves and scratches are common; having a direction about N. 10° W. and S. 10° E. The summit of the mountain, which rises in an insulated manner to the height of 3250 feet, is a naked rock of gneiss of several acres in extent, and this is thoroughly grooved and scored. One groove measured fourteen feet in width, and two feet deep; and others are scarcely of less size. Their direction at the summit, by a mean of nearly thirty measurements with a compass, is nearly north and south."

According to Heywood's Gazetteer, the mountain is "talc, mica, slate, distinctly stratified," and is 3718 feet high.

Though there is little or no soil upon the rocks, owing apparently to the coolness, if not moisture, you have rather the vegetation of a swamp than that of sterile rocky ground below. For example, of the six prevailing trees and shrubs — low blueberry, black spruce, lamb-kill, black choke-berry, wild holly, and *Viburnum nudum* — all but the first are characteristic of swampy and low

¹ [The brackets are Thoreau's.]

ground, to say nothing of the commonness of wet mosses, the two species of cotton-grass, and some other plants of the swamp and meadow. Little meadows and swamps are scattered all over the mountain upon and amid the rocks. You are continually struck with the proximity of gray and lichen-clad rock and mossy bog. You tread alternately on wet moss, into which you sink, and dry, lichen-covered rocks. You will be surprised to see the vegetation of a swamp on a little shelf only a foot or two over, — a bog a foot wide with cotton-grass waving over it in the midst of cladonia lichens so dry as to burn like tinder. The edges of the little swamps — if not their middle — are commonly white with cotton-grass. The *Arenaria Grænlandica* often belies its name here, growing in wet places as often as in dry ones, together with *eriphorum*.

One of the grandest views of the summit is from the east side of the central meadow of the plateau, which I called the Gulf, just beneath the pinnacle on the east, with the meadow in the foreground.

Water stands in shallow pools on almost every rocky shelf. The largest pool of open water which I found was on the southwest side of the summit, and was four rods long by fifteen to twenty feet in width and a foot deep. Wool- and cotton-grass grew around it, and there was a dark green moss and some mud at the bottom. There was a smoother similar pool on the next shelf above it. These were about the same size in June and in August, and apparently never dry up. There was also the one in which I bathed, near the northeast little meadow. I had a delicious bath there, though the water was warm,

but there was a pleasant strong and drying wind blowing over the ridge, and when I had bathed, the rock felt like plush to my feet.


The *cladonia* lichens were so dry at midday, even the day after rain, that they served as tinder to kindle our fire, — indeed, we were somewhat troubled to prevent the fire from spreading amid them, — yet at night, even before sundown, and morning, when we got our supper and breakfast, they would not burn thus, having absorbed moisture. They had then a cool and slightly damp feeling.

Every evening, excepting, perhaps, the Sunday evening after the rain of the day before, we saw not long after sundown a slight scud or mist begin to strike the summit above us, though it was perfectly fair weather generally and there were no clouds over the lower country.

First, perhaps, looking up, we would see a small scud not more than a rod in diameter drifting just over the apex of the mountain. In a few minutes more a somewhat larger one would suddenly make its appearance, and perhaps strike the topmost rocks and invest them for a moment, but as rapidly drift off northeast and disappear. Looking into the southwest sky, which was clear, we would see all at once a small cloud or scud a rod in diameter beginning to form half a mile from the summit, and as it came on it rapidly grew in a mysterious manner, till it was fifty rods or more in diameter, and draped and concealed for a few moments all the summit above us, and then passed off and disappeared northeastward just as it had come on. So that it ap-

peared as if the clouds had been attracted by the summit. They also seemed to rise a little as they approached it, and endeavor to go over without striking. I gave this account of it to myself. They were not attracted to the summit, but simply generated there and not elsewhere. There would be a warm southwest wind blowing which was full of moisture, alike over the mountain and all the rest of the country. The summit of the mountain being cool, this warm air began to feel its influence at half a mile distance, and its moisture was rapidly condensed into a small cloud, which expanded as it advanced, and evaporated again as it left the summit. This would go on, apparently, as the coolness of the mountain increased, and generally the cloud or mist reached down as low as our camp from time to time, in the night.

One evening, as I was watching these small clouds forming and dissolving about the summit of our mountain, the sun having just set, I cast my eyes toward the dim bluish outline of the Green Mountains in the clear red evening sky, and, to my delight, I detected exactly over the summit of Saddleback Mountain, some sixty miles distant, its own little cloud, shaped like a parasol and answering to that which capped our mountain, though in this case it did not rest on the mountain, but was considerably above it, and all the rest of the west horizon for forty miles was cloudless.

I was convinced that it was the local  cloud of that mountain because it was directly over the summit, was of small size and of umbrella form answering to the summit, and there was no other cloud to be seen in that horizon. It was a beautiful and serene

object, a sort of fortunate isle, — like any other cloud in the sunset sky.

That the summit of this mountain is cool appears from the fact that the days which we spent there were remarkably warm ones in the country below, and were the common subject of conversation when we came down, yet we had known nothing about it, and went warmly clad with comfort all the while, as we had not done immediately before and did not after we descended. We immediately perceived the difference as we descended. It was warm enough for us on the summit, and often, in the sheltered southeast hollows, too warm, as we happened to be clad, but on the summits and ridges it chanced that there was always wind, and in this wind it was commonly cooler than we liked. Also our water, which was evidently rain-water caught in the rocks and retained by the moss, was cool enough if it were only in a little crevice under the shelter of a rock, *i. e.* out of the sun.

Yet, though it was thus cool, and there was this scud or mist on the top more or less every night, there was, as we should say, no dew on the summit any morning. The lichens, blueberry bushes, etc., did not feel wet, nor did they wet you in the least, however early you walked in them. I rose [?] to observe the sunrise and picked blueberries every morning before sunrise, and saw no dew, only once some minute dewdrops on some low grass-tips, and that was amid the wet moss of a little bog, but the lambkill and blueberry bushes above it were not wet. Yet the Thursday when we left, we found that though there was no dew on the summit there

was a very heavy dew in the pastures below, and our feet and clothes were completely wet with it, as much as if we had stood in water.

I should say that there were no true springs (?) on the summit, but simply rain-water caught in the hollows of the rocks or retained by the moss. I observed that the well which we made for washing — by digging up the moss with our hands — half dried up in the sun by day, but filled up again at night.

The principal stream on the summit, — if not the only one, — in the rocky portion described, was on the southeast side, between our two camps, though it did not distinctly show itself at present except a little below our elevation. For the most part you could only see that water had flowed there between and under the rocks.

I fancied once or twice that it was warmer at 10 P. M. than it was immediately after sunset.

The voices of those climbing the summit were heard remarkably far. We heard much of the ordinary conversation of those climbing the peak above us a hundred rods off, and we could hear those on the summit, or a hundred and thirty rods off, when they shouted. I heard a party of ladies and gentlemen laughing and talking there in the night (they were camping there), though I did not hear what they said. We heard, or imagined that we heard, from time to time, as we lay in our camp by day, an occasional chinking or clinking sound as if made by one stone on another.

In clear weather, in going from one part of the summit to another it would be most convenient to steer by distant objects, as towns or mountains or lakes, rather

2 to 3 lbs.

18 hard-boiled eggs.

2½ lbs. sugar and a little salt.

About ¼ lb. of tea.

2 lbs. hard-bread.

½ loaf home-made bread and
a piece of cake.

Omit eggs.

2 lbs. of sugar would have done.

¾ as much would have done.

The right amount of bread,
but might have taken more
home-made and more *solid*
sweet cake.

N. B. — Carry salt (or some of it) in a wafer-box. Also some sugar in a small box.

N. B. — Observe next time: the source of the stream which crosses the path; what species of swallow flies over mountain; what the grass which gives the pastures a yellowish color seen from the summit.

The morning would probably never be ushered in there by the chipping of the chip-bird, but that of the *F. hyemalis* instead, — a dry, hard occasional chirp, more in harmony with the rocks. There you do not hear the *link* of the bobolink, the chatter of red-wings and crow blackbirds, the wood pewee, the twitter of the kingbird, the half [*sic*] strains of the vireo, the passing goldfinch, or the occasional plaintive note of the blue-bird, all which are now commonly heard in the lowlands.

That area is literally a chaos, an example of what the earth was before it was finished.¹

Do I not hear the mole cricket at night?

Aug. 10. 2 P. M. — Air, 84°; Boiling Spring this afternoon., 46°; Brister's, 49°; or where there is little or no

¹ *Vide* Aug. 26 and 28, and Sept. 1.

surface water the same as in spring. Walden is at surface 80° (air over it 76).

Aster dumosus and pennyroyal out; how long? Sand cherry is well ripe — some of it — and tolerable, better than the red cherry or choke-cherry. *Juncus paradoxus*, that large and late juncus (tailed), as in Hubbard's Close and on island above monument and in Great Meadows, say ten days.

Saw yesterday in Fitzwilliam from the railroad a pond covered with white lilies uniformly about half the size of ours!

Saw this evening, behind a picture in R. W. E.'s dining-room, the hoary bat. First heard it fluttering at dusk, it having hung there all day. Its rear parts covered with a fine hoary down.

Aug. 11. *Panicum capillare*; how long? *Cyperus strigosus*; how long?

Aug. 12. The river-bank is past height. The button-bush is not common now, though the clethra is in prime. The black willow hardly ceases to shed its down when it looks yellowish. *Setaria glauca*, some days. *Elymus Virginicus*, some days. *Andropogon furcatus* (in meadow); how long? Probably before *scoparius*. *Zizania* several days.

River at 5 P. M. three and three quarters inches below summer level.

Panicum glabrum (not *sanguinale*? — our common); how long? The upper glume equals the flower, yet it has many spikes.

Aug. 13. P. M. — To Great Meadows and Gowing's Swamp.

Purple grass (*Eragrostis pectinacea*), two or three days. *E. capillaris*, say as much. *Andropogon scoparius*, a day or two. *Calamagrostis coarctata*, not quite. *Glyceria obtusa*, well out; say several days.

Some of the little cranberries at Gowing's Swamp appear to have been frost-bitten. Also the blue-eyed grass, which is now black-topped.

Hear the steady shrill of the alder locust.

Rain this forenoon; windy in afternoon.

Aug. 14. Heavy rain.

Aug. 15. Fair weather.

See a blue heron.

Aug. 16. 2 P. M. — River about ten and a half inches above summer level.

Apparently the Canada plum began to be ripe about the 10th.

Aug. 17. We have cooler nights of late.

See at Pout's Nest two solitary tattlers, as I have seen them about the muddy shore of Gourgas Pond-hole and in the Great Meadow pools. They seem to like a mud-dier shore than the peewee.

Hear a whip-poor-will sing to-night.

Aug. 18. The note of the wood pewee sounds prominent of late.

Aug. 19. Examine now more at length that smooth, turnip-scented brassica which is a pest in some grain-fields. Formerly in Stow's land; this year in Warren's, on the Walden road. To-day I see it in Minot Pratt's, with the wild radish, which is a paler yellow and a rougher plant. I thought it before the *B. campestris*, but Persoon puts that under brassicas with *siliquis tetraedris*, which this is not, but, for aught that appears, it agrees with his *B. Napus*, closely allied, *i. e.* wild rape. Elliot speaks of this as introduced here. *Vide* Patent Office Report for 1853 and "Vegetable Kingdom," page 179. The *B. campestris* also is called rape.¹

Leersia (cut-grass) abundantly out, apparently several days.

Aug. 21. Soaking rains, and in the night.

A few fireflies still at night.

Aug. 22. P. M. — Row to Bittern Cliff.

Now, when the mikania is conspicuous, the bank is past prime,² for lilies are far gone, the pontederia is past prime, willows and button-bushes begin to look the worse for the wear thus early, — the lower or older leaves of the willows are turned yellow and decaying, — and many of the meadows are shorn. Yet now is the time for the cardinal-flower. The already, *methinks*, yellowing willows and button-bushes, the half-shorn meadows, the higher water on their edges, with wool-grass standing over it, with the notes of flitting bobolinks and red-wings of *this year*, in rustling flocks, all tell of the fall.

¹ *Vide* Sept. 8.

² *Vide* Sept. 5.

I hear two or three times behind me the loud *creaking* note of a wood duck which I have scared up, which goes to settle in a new place.

Some deciduous trees are now at least as dark as evergreens, the alders are darker than white pines, and as dark as pitch, as I now see them.

I try the temperature of the river at Bittern Cliff, the deep place. The air over river at 4.30 is 81°; the water at the top, 78°; poured from a bottle (into a dipper) which I let lie on the bottom half an hour, 73°, — or 5° difference. When I merely sunk the thermometer and pulled it up rapidly it stood 73½, though not in exactly the same place, — say two rods off.

When I used to pick the berries for dinner on the East Quarter hills I did not eat one till I had done, for going a-berrying implies more things than eating the berries. They at home got only the pudding: I got the forenoon out of doors, and the appetite for the pudding.

It is true, as is said, that we have as good a right to make berries private property as to make grass and trees such; but what I chiefly regret is the, in effect, dog-in-the-manger result, for at the same time that we exclude mankind from gathering berries in our field, we exclude them from gathering health and happiness and inspiration and a hundred other far finer and nobler fruits than berries, which yet we shall not gather ourselves there, nor even carry to market. We strike only one more blow at a simple and wholesome relation to nature. As long as the berries are free to all comers they are beautiful, though they may be few and small, but tell me that is a blueberry swamp which somebody has

hired, and I shall not want even to look at it. In laying claim for the first time to the spontaneous fruit of our pastures we are, accordingly, aware of a little meanness inevitably, and the gay berry party whom we turn away naturally look down on and despise us. If it were left to the berries to say who should have them, is it not likely that they would prefer to be gathered by the party of children in the hay-rigging, who have come to have a good time merely?

I do not see clearly that these successive losses are ever quite made up to us. This is one of the taxes which we pay for having a railroad. Almost all our improvements, so called, tend to convert the country into the town.

This suggests what origin and foundation many of our laws and institutions have, and I do not say this by way of complaining of this particular custom. Not that I love Cæsar less, but Rome more.

Yes, and a potato-field is a rich sight to me, even when the vines are half decayed and blackened and their decaying scent fills the air, though unsightly to many; for it speaks then more loudly and distinctly of potatoes than ever. I see their weather-beaten brows peeping out of the hills here and there, for the earth cannot contain them, when the creak of the cricket and the shrilling of the locust prevail more and more, in the sunny end of summer. There the confident husbandman lets them lie for the present, even as if he knew not of them, or as if that property were insured, so carelessly rich he is. He relaxes now his labors somewhat, seeing to their successful end, and takes long mornings, perchance, stretched in the shade of his ancestral elms.

Returning down the river, when I get to Clamshell I see great flocks of the young red-wings and some crow blackbirds on the trees and the ground. They are not very shy, but only timid, as inexperienced birds are. I do not know what they find to eat on this half bare, half grassy bank, but there they hop about by hundreds, while as many more are perched on the neighboring trees; and from time to time they all rise from the earth and wheel and withdraw to the trees, but soon return to the ground again. The red-wings are almost reddish about the throat. The crow blackbirds have some notes now just like the first croaks of the wood frog in the spring.

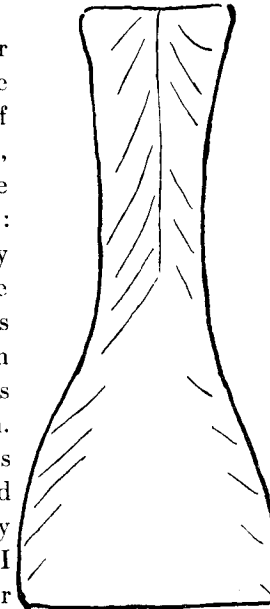
Sorghum nutans well out (behind the birch); how long? *Paspalum* ditto.

The recent heavy rains have washed away the bank here considerably, and it looks and smells more mouldy with human relics than ever. I therefore find myself inevitably exploring it. On the edge of the ravine whose beginning I witnessed, one foot beneath the surface and just over a layer some three inches thick of pure shells and ashes, — a gray-white line on the face of the cliff. — I find several pieces of Indian pottery with a rude ornament on it, not much more red than the earth itself. Looking farther, I find more fragments, which have been washed down the sandy slope in a stream, as far as ten feet. I find in all thirty-one pieces, averaging an inch in diameter and about a third of an inch thick. Several of them made part of the upper edge of the vessel, and have a rude ornament encircling them in three rows, as if pricked with a stick in the soft clay, and also an-

other line on the narrow edge itself. At first I thought to match the pieces again, like a geographical puzzle, but I did not find that any I [got] belonged together. The vessel must have been quite large, and I have not got nearly all of it. It appears to have been an impure clay with much sand and gravel in it, and I think a little pounded shell. It is [of] very unequal thickness, some of the unadorned pieces (probably the bottom) being half an inch thick, while near the edge it is not more than a quarter of an inch thick. There was under this spot and under the layer of shells a manifest hollowness in the ground, not yet filled up. I find many small pieces of bone in the soil of this bank, probably of animals the Indians ate.

In another bank, in the larger heap of been exposed, delicate stone form and size: stone. It is very on each side the middle is an eighth of an suspect that this open clamswith.

It is curious expected to find and in this very I reached it (I Indeed, I never



part of the midst of a much shells which has I found a tool of this of a soft slate-thin and sharp edge, and in not more than inch thick. I was used to

that I had expected as much as this, spot too, before mean the pot). I find a remark-

able Indian relic — and I find a good many — but I have first divined its existence, and planned the discovery of it. Frequently I have told myself distinctly what it was to be before I found it.

The river is fifteen and three quarters inches above summer level.¹

Aug. 24. This and yesterday very foggy, dogdayish days. Yesterday the fog lasted till nine or ten, and to-day, in the afternoon, it amounts to a considerable drizzling rain.

P. M. — To Walden to get its temperature. The air is only 66 (in the mizzling rain the 23d it was 78); the water at top, 75° (the 23d also 75). What I had sunk to the bottom in the middle, where a hundred feet deep by my line, left there half an hour, then pulled up and poured into a quart dipper, stood at 53°.² I tried the same experiment yesterday, but then in my haste was uncertain whether it was not 51°; certain that a little later it was 54°. So 53° it must be for the present. I may have been two or more minutes pulling up the line so as to prevent its snarling. Therefore I think the water must have acquired a temperature two or three degrees higher than it had at the bottom by the time I tried it. So it appears that the bottom of Walden has, in fact, the temperature of a genuine and cold spring, or probably is of the same temperature with the average mean temperature of the earth, and, I *suspect*, the same all the year. This shows that springs need not come from a very great depth in order to be cold. What various tem-


¹ And about the same the 25th.

² *Vide* 28th.

peratures, then, the fishes of this pond can enjoy! They require no other refrigerator than their deeps afford. They can in a few moments sink to winter or rise to summer. Walden, then, must be included among the springs, but it is one which has no outlet, — is a well rather. It reaches down to where the temperature of the earth is unchanging. It is not a superficial pond, — not in the mere skin of the earth. It goes deeper. How much this varied temperature must have to do with the distribution of the fishes in it! The few trout must oftenest go down below in summer.

At the bottom of the deep cove I see much black birch and red maple just sprung up, and their seeds have evidently been drifted to this shore. The little birches are already fragrant.

Aug. 25. 2 P. M. — To Clamshell.

See a large hen-hawk sailing over Hubbard's meadow and Clamshell, soaring at last very high and toward the north. At last it returns southward, at that height impelling itself steadily and  swiftly forward with its wings set in this wise: *i. e.* more curved, or, as it were, trailing behind, without apparent motion. It thus moves half a mile directly.

The front-rank polygonum is apparently in prime; low, solid, of a pinkish rose-color. Notice the small botrychium's leaf.

As I row by, see a green bittern near by standing erect on Monroe's boat. Finding that it is observed, it draws in its head and stoops to conceal itself. When it flies it seems to have no tail. It allowed me to approach so

near, apparently being deceived by some tame ducks there.

Aug. 26. 2 P. M. — To White Pond.

The leersia or cut-grass in the old pad ditch by path beyond Hubbard's Grove.

As I cross the upland sprout-land south of Ledum Swamp, I see that the fine sedge there is half withered and brown, and it is too late for that cheerful yellow gleam.


Thread my way through the blueberry swamp in front of Martial Miles's. The high blueberries far above your head in the shade of the swamp retain their freshness and coolness a long time. Little blue sacks full of swampy nectar and ambrosia commingled, like schnapps or what-not, that you break with your teeth. Is not this the origin of the German name as given by Gerard? But there is far the greatest show of choke-berries there, rich to see. I wade and press my way through endless thickets of these untasted berries, their lower leaves now fast reddening. Yet they have an agreeable juice, — though the pulp may be rejected, — and perhaps they might be made into wine.

The shrilling of the alder locust is the solder that welds these autumn days together. All bushes (*arbusta*) resound with their song, and you wade up to your ears in it. Methinks the burden of their song is the countless harvests of the year, — berries, grain, and other fruits.

I am interested by the little ridge or cliff of foam which the breeze has raised along the White Pond shore, the westerly breeze causing the wavelets to lapse on the

shore and mix the water with the air gradually. Though this is named *White Pond* from the whiteness of its sandy shore, the line of foam is infinitely whiter, far whiter than any sand. This reminds me how far a white pond-shore, *i. e.* the sand, may be seen. I saw from Monadnock the north shore of a large pond in Nelson which was some eight miles north by the map, very distinct to every one who looked that way. Perhaps in such cases a stronger light is reflected from the water on to the shore. The highest ridge of foam is where it is held or retained and so built up gradually behind some brush or log on the shore, by additions below, into a little cliff, like a sponge. In other places it is rolled like a muff. It is all light and trembling in the air.

Thus we are amused with foam, a hybrid between two elements. A breeze comes and gradually mingles some of the water with the air. It is, as it were, the aspiration of the pond to soar into the air. The debatable ground between two oceans, the earth, or shore, being only the point of resistance, where they are held to mingle.

See nowadays the pretty little Castile-soap galls on the shrub oaks. Their figure  is like the Indian girdle of triangular points. Also other galls, yellowish and red on different sides.

The pussy clover heads were most interesting, large, and puffy, say ten days ago.

I notice milkweed in a hollow in the field by the cove at White Pond, as if the seed had settled there, owing to the lull of the wind.

It is remarkable how commonly you see the thistle-down sailing just over water (as I do after this — the 2d

of September — at Walden). I see there, *i. e.* at Walden, at 5 P. M., September 2d, many seedless thistle-downs sailing about a foot above the water, and some in it, as if there was a current just above the surface which prevented their falling or rising. They are probably wafted to the water because there is more air over water.

Aug. 27. P. M. — To Ministerial Swamp.

Clear weather within a day or two after the thick dog-days. The nights have been cooler of late, but the heat of the sun by day has been more local and palpable, as it were. It is as if the sun touched your shoulder with a hot hand while there are cool veins in the air. That is, I am from time to time surprised and oppressed by a melting heat on my back in the sun, though I am sure of a greater general coolness. The heat is less like that of an apartment equably warmed, and more like that [of] a red-hot iron carried about and which you occasionally come near.

See one of the shrilling green alder locusts on the under side of a grape leaf. Its body is about three quarters of an inch or less in length; antennæ and all, two inches. Its wings are at first perpendicular above its shoulders, it apparently having just ceased shrilling. Transparent, with lines crossing them.

Notice now that sour-tasting white (creamy, for consistence) incrustation between and on the berries of the smooth sumach, like frostwork. Is it not an exudation? or produced by the bite of an insect?

Calamagrostis coarctata grass by Harrington's Pool, Ministerial Swamp, say one week (not in prime).

Muhlenbergia glomerata, same place, say ten days, or past prime.

Gather some of those large and late low blackberries (as at Thrush Alley) which run over the thin herbage, green moss, etc., in open pitch pine woods.

Aug. 28. About 6.20 P. M. paddled on Walden. Near the shore I see at least one little skater to a foot, further off one to a yard, and in middle not more than one to a rod; but I see no gyrinus at all here to-night.

At first the sky was completely overcast, but, just before setting, the sun came out into a clear space in the horizon and fell on the east end of the pond and the hillside, and this sudden blaze of light on the still very fresh green leaves was a wonderful contrast with the previous and still surrounding darkness. Indeed, the bright sunlight was at this angle reflected from the water at the east end — while I in the middle was in the shade of the east woods — up under the verdure of the bushes and trees on the shore and on Pine Hill, especially to the tender under sides and to the lower leaves not often lit up. Thus a double amount of light fell on them, and the most vivid and varied shades of green were revealed. I never saw such a green *glow* before. The outline of each shrub and tree was a more or less distinct downy or silvery crescent, where the light was reflected from the under side of the most downy, or newest, leaves, — as I should not have seen it at midday, — either because the light fell more on the under sides of the leaves, being so horizontal and also reflected upward, or because the leaves stood more erect at this hour and after a cloudy

day, or for both reasons. The lit water at the east end was invisible to me, or no more than a line, but the shore itself was a very distinct whitish line. When the sun fell lower, and the sunlight no longer fell on the pond, the green blaze of the hillside was at once very much diminished, because the light was no longer reflected upward to it.

At sunset the air over the pond is $62^{\circ}+$; the water at the top, 74° ; poured from a stoppered bottle which lay at the bottom where one hundred feet deep, twenty or thirty minutes, 55° (and the same when drawn up in an open bottle which lay five minutes at the bottom); in an open bottle drawn up from about fifty feet depth (*there*) or more, after staying there five minutes, 63° . This about half the whole difference between the top and bottom, so that the temperature seems to fall regularly as you descend, at the rate of about one degree to five feet. When I let the stoppered bottle down *quickly*, the cork was forced out before it got to the bottom, when [?] the water drawn up stood at 66° . Hence it seemed to be owing to the rising of the warmer water and air in the bottle. Five minutes with the open bottle at the bottom was as good as twenty with it stoppered.

I found it 2° warmer than the 24th, though the air was then 4° warmer than now. Possibly, comparing one day with the next, it is warmer at the bottom in a cold day and colder in a warm day, because when the surface is cooled it mixes more with the bottom, while the average temperature is very slightly changed.

The *Lycopodium inundatum* common by Harrington's mud-hole, Ministerial Swamp.

Hear the night-warbler and whip-poor-will.

There was no prolonged melody of birds on the summit of Monadnock. They for the most part emitted sounds there more in harmony with the silent rocks, — a faint chipping or *chinking*, often somewhat as of two stones struck together.

Aug. 30. Surveying Minott's land.

Am surprised to find on his hard land, where he once raised potatoes, the hairy huckleberry, which before I had seen in swamps only. Here, too, they are more edible, not so insipid, yet not quite edible generally. They are improved, you would say, by the firmer ground. The berries are in longer racemes or clusters than any of our huckleberries. They are the prevailing berry all over this field. They are oblong and black, and the thick, shaggy-feeling coats left in the mouth are far from agreeable to the palate. Are now in prime.

Also find, in one of his ditches where peat was dug (or mud), the *Lemna polyrrhiza*; not found in Concord before, and said not to blossom in this country. I found it at Pushaw. Also the *Muhlenbergia glomerata* near the lemna, or southeast of it.

The hairy huckleberry and muhlenbergia, I think, grow here still because Minott is an old-fashioned man and has not scrubbed up and improved his land as many, or most, have. It is in a wilder and more primitive condition. The very huckleberries are shaggy there. There was only one straight side to his land, and that I cut through a dense swamp. The fences are all meandering, just as they were at least in 1746, when it was described.

The lemna reminds me strongly of that greenish or yellowish scum which I see mantling some barn-yard pools. It makes the same impression on the eye at a little distance. You would say it was the next higher stage of vegetation. The smallest of *pads*, one sixth of an inch in diameter and, like the white lily pad, crimson beneath. It completely covers two or three ditches under the edge of the wood there, except where a frog has jumped in and revealed the dark water, — and maybe there rests, his green snout concealed amid it; but it soon closes over him again when he has dived. These minute green scales completely cover some ditches, except where a careless frog has leapt in or swam across, augment the veil.

There is also, floating in little masses, a small ranunculus-like plant, flattish-stemmed with small forks, some of it made into minute caddis-cases. Perhaps it was cut up by some creature at the bottom. *Vide* press.