

VII

JUNE, 1860

(ÆT. 42)

June 1. 2 P. M. — River $1\frac{3}{8}$ above summer level.
6 P. M. $1\frac{6}{8}$ “ “ “

Farmer has heard the quail a fortnight. Channing yesterday. The barberry flower is now in prime, and it is very handsome with its wreaths of flowers. Many low blackberry flowers at Lee's Cliff. June-grass there well out. Krigia, how long?

Breams' nests begun at Hubbard's Grove shore. They have carefully cleaned the bottom, removing the con-ferva, small weeds, etc., leaving the naked stems of some coarse ones, as the bayonet rush, bare and red.

Young Stewart tells me that when he visited again that gray squirrel's nest which I described about one month ago up the Assabet, the squirrels were gone, and he thought that the old ones had moved them, for he saw the old about another nest. He found another, similar nest with three dead blind gray squirrels in it, the old one probably having been killed. This makes three gray squirrels' nests that I have seen and heard of (*seen* two of them) this year, made thus of leaves and sticks open in the trees, and I hear of some more similar ones found in former years, so that I think this mode of nesting their young may be the rule with them

here. Add to this one red squirrel's nest of the same kind.

June 2. Saturday. The past has been Anniversary Week in Boston, and there have been several rainy or cloudy days, as the 30th, afternoon and especially night, and 31st, and night of June 1st. Cleared up at noon to-day. This Anniversary Week is said to be commonly rainy.

P. M. — To river behind Hubbard's Grove.

Red clover first seen. A boy brought me yesterday a nest with two Maryland yellow-throats' eggs and two cowbirds' eggs in it, and said that they were all found together. Saw a pigeon yesterday; a turtle dove to-day.

You see now, in suitable shallow and warm places where there is a sandy bottom, the nests of the bream begun, — circular hollows recently excavated, weeds, confervæ, and other rubbish neatly removed, and many whitish root-fibres of weeds left bare and exposed.

There is a lively and washing northwest wind after the rain, it having cleared up at noon. The waves are breaking on this shore with such a swash that sometimes I cannot distinguish the bream poised over her nest within ten feet of me. The air is cleansed and clear, and therefore the waves, as I look toward the sun, sparkle with so bright and white a light, — so peculiarly fresh and bright. The impurities have all come down out of the air.

The yellow Bethlehem-star is pretty common now. The poison-dogwood is so late, and has such a proportion of thick gray stems, that at a little distance

they look like dead trees amid the green birches and alders.

8 P. M. — Up Assabet.

The river is four inches above summer level.

A cool evening. A cold, white twilight sky after the air has been cleared by rain, and now the trees are seen very distinctly against it, — not yet heavy masses of verdure, but a light openwork, the leaves being few and small yet, as regularly open as a sieve.

Cool as it is, the air is full of the ringing of toads, peeping of hylodes, and purring of (probably) *Rana palustris*. The last is especially like the snoring of the river. In the morning, when the light is similar, you will not hear a peeper, I think, and scarcely a toad. Bats go over, and a kingbird, very late. Mosquitoes are pretty common. Ever and anon we hear the stake-driver from a distance. There is more distinct sound from animals than by day, and an occasional bullfrog's trump is heard. Turning the island, I hear a very faint and slight screwing or working sound once, and suspect a screech owl, which I after see on an oak. I soon hear its mournful scream, probably to its mate, not loud now, but, though within twenty or thirty rods, sounding a mile off. I hear it louder from my bed in the night.

Water-bugs dimple the surface now quite across the river, in the moonlight, for it is a full moon. The evergreens are very dark and heavy.

Hear the sound of Barrett's sawmill, at first like a drum, then like a train of cars. The water has been raised a little by the rain after the long drought, and so

he [is] obliged to saw by night, in order to finish his jobs before the sun steals it from him again.

June 3. 6 A. M. — River three and three sixteenth inches above summer level; *i. e.*, the river has begun to fall within twenty-four hours and less after the rain ceased.

2 P. M. — To bayberry.

These are the clear breezy days of early June, when the leaves are young and few and the sorrel not yet in its prime. Perceive the meadow fragrance.

Am surprised to [see] some twenty or more crows in a flock still, cawing about us.

The roads now strewn with red maple seed. The pines' shoots have grown generally from three to six inches, and begin to make a distinct impression, even at some distance, of white and brown above their dark green. The foliage of deciduous trees is still rather yellow-green than green.

There are in the Boulder Field several of the creeping juniper which grow quite flat on the ground, somewhat like the *empetrum*, most elevated in the middle.

Not only brakes, many of them tall, and branching two feet at least from the ground, have their branches nibbled off, but the carrion-flower has very commonly lost its leaves, either by rabbits or woodchucks.

Tree-toads heard. See a common toad three quarters of an inch long.

There are various sweet scents in the air now. Especially, as I go along an arbor-vitæ hedge, I perceive a very distinct fragrance like strawberries from it.

June 4. Leave off flannel. Yesterday and to-day uncomfortably warm when walking.

The foliage of the elms over the street impresses me as dense and heavy already, — comparatively.

The black-poll warblers (*Sylvia striata*) appear to have left, and some other warblers, if not generally, with this first clear and bright and warm, peculiarly June weather, immediately after the May rain. About a month ago, after the strong and cold winds of March and April and the (in common years) rain and high water, the ducks, etc., left us for the north. Now there is a similar departure of the warblers, on the expansion of the leaves and advent of yet warmer weather. Their season with us, *i. e.* those that go further, is when the buds are bursting, till the leaves are about expanded; and probably they follow these phenomena northward till they get to their breeding-places, flying from tree to tree, *i. e.* to the next tree which contains their insect prey.

2 P. M. — To Fair Haven Hill.

They began to carry round ice about the 1st.

What I called *Carex conoidea* in '59, was seen June 2d this year in fruit, and may have flowered with *C. pallescens*. C. Hubbard's first meadow, south side of Swamp Brook willows. *Glyceria fluitans*, say two or three days, Depot Brook.

I see the great blue devil's-needles coasting along the river now, and coupled.

Carex retrorsa (much of it going to seed), Hubbard's Bath shore, say ten days. Has the general aspect of *pallescens*.

At Staples Meadow I observe that a great deal of the pitcher-plant is quite dry, dead, and slate-colored, with some green flower-buds pushing up, perhaps. I think it was thus half killed by the drought of April and May.

The clear brightness of June was well represented yesterday by the buttercups (*Ranunculus bulbosus*) along the roadside. Their yellow so glossy and varnished within; but not without. Surely there is no reason why the new butter should not be yellow now.

The time has come now when the laborers, having washed and put on their best suits, walk into the fields on the Sabbath, and lie on the ground at rest.

Aphides on alders, which dirty your clothes with their wool as you walk.

A catbird has her nest in our grove. We cast out strips of white cotton cloth, all of which she picked up and used. I saw a bird flying across the street with so long a strip of cloth, or the like, the other day, and so slowly, that at first I thought it was a little boy's kite with a long tail. The catbird sings less now, while its mate is sitting, or maybe taking care of her young, and probably this is the case with robins and birds generally.

At the west spring of Fair Haven Hill I cast a bit of wood against a pitch pine in bloom (perhaps not yet in prime generally), and I see the yellow pollen-dust blown away from it in a faint cloud, distinctly for three rods at least, and gradually rising all the while (rising five or six feet perhaps).

I hear that the nest of that marsh hawk which we saw on the 29th (*q. v.*) has since been found with five

eggs in it. So that bird (male), whose mate was killed on the 16th of May, has since got a new mate and five eggs laid.

One asks me to-day when it is that the leaves are fully expanded, so that the trees and woods look dark and heavy with leaves. I answered that there were leaves on many if not on most trees already fully expanded, but that there were not many on a tree, the shoots having grown only some three inches, but by and by they will have grown a foot or two and there will be ten times as many leaves. Each tree (or most trees) now holds out many little twigs, some three inches long, with two or three fully expanded leaves on it, between us and the sun, making already a grateful but thin shade, like a coarse sieve, so open that we see the fluttering of each leaf in its shadow; but in a week or more the twigs will have so extended themselves, and the number of fully expanded leaves be so increased, that the trees will look heavy and dark with foliage and the shadow be dark and opaque, — a gelid shade.

Hazy, and mountains concealed.

I notice to-day, for example, that most maple, birch, willow, alder, and elm leaves are fully expanded, but most oaks and hickories, ash trees, etc., are not quite.

You may say that now, when most trees have fully expanded leaves and the black ash fairly shows green, the leafy season has fairly commenced. (I see that I so called it May 31 and 27, 1853.)

June 5. A. M. — Northeast wind and rain, steady rain.

Hemlock bead-work handsome, but hardly yet large ones.

When I open my window at night I hear the peeping of hylodes distinctly through the rather cool rain (as also some the next morning), but not of toads; more hylodes than in the late very warm evenings when the toads were heard most numerously. The hylodes evidently love the cooler nights of spring; the toads, the warm days and nights of May. Now it requires a cool (and better if wet) night, which will silence the toads, to make the hylodes distinct.

June 6. Rain still (the second day), — clears up before night, — and so cool that many have fires.

The grass began to look fairly green or summer-like generally about the 1st.

6.30 P. M. — On river, up Assabet, after the rain.

The water has risen to eight and three quarters inches above summer level, and is rising fast. But little rain has fallen this afternoon.

The hemlocks generally have not grown quite enough to be handsomest, but the younger and lower growths are seen now in the dark and cavernous recesses, very fair with so many bright eyes on their green.

Saw those swarms of black moths fluttering low over the water on the 2d and to-night.

The *Salix nigra* is now getting stale. It is a very densely flowered willow, perhaps the most so of any. The sterile ones seen afar (even by moonlight on the 2d) are dense masses of yellow (now more pale) against the

green of trees in the rear. They have but little leafiness themselves as yet.

Not only the foliage begins to look dark and dense, but many ferns are fully grown, as the cinnamon and interrupted, perfectly recurved over the bank and shore, adding to the leafy impression of the season. The *Osmunda regalis* looks later and more tender, reddish-brown still. It preserves its habit of growing in circles, though it may be on a steep bank and one half the circle in the water.

The new leaves are now very fair, pure, unspotted green, commonly more or less yellowish. The swamp white oak leaf looks particularly tender and delicate. The red maple is much harder and more matured. Yet the trees commonly are not so densely leaved but that I can see through them; *e. g.*, I see through the red oak and the bass (below Dove Rock), looking toward the sky. They are a mere network of light and shade after all. The oak may be a little the thickest. The white ash is considerably thinner than either.

The grass and foliage are particularly fresh and green after the two days of rain, and we mark how the darkening elms stand along the highways. Like wands or wreaths seen against the horizon, they streak the sky with green.

How full the air of sound at sunset and just after, especially at the end of a rain-storm! Every bird seems to be singing in the wood across the stream, and there are the hylodes and the sounds of the village. Beside, sounds are more distinctly heard.

Ever and anon we hear a few *sucks* or strokes from

the bittern, the stake-driver, wherever we lie to, as if he had taken the job of extending all the fences into the river to keep cows from straying round. We hear but three or four toads in all, to-night, but as many hylodes as ever. It is too cool, both water and air (especially the first), after the rain, for the toads. At 9 A. M. it is 58. This temperature now, after a rain-storm has cooled the water, will silence the toads generally but make the hylodes more musical than ever.

As the light is obscured after sunset, the birds rapidly cease their songs, and the swallows cease to flit over the river. And soon the bats are seen taking the places of the swallows and flying back and forth like them, and commonly a late kingbird will be heard twittering still in the air. After the bats, or half an hour after sunset, the water-bugs begin to spread themselves over the stream, though fifteen minutes earlier not one was seen without the pads, — now, when it is difficult to see them or the dimples they make, except you look toward the reflected western sky. It is evident that they dare not come out thus by day for fear of fishes, and probably the nocturnal or vespertinal fishes, as eels and pouts, do not touch them. I think I see them all over Walden by day, and, if so, it may be because there is not much danger from fishes in that very deep water. I wonder if they spread thus over the whole breadth of Flint's Pond. It would be a measure of the size of a lake to know that it was so large that these insects did not cross it.

See to-night three dead (fresh) suckers on the Assabet. What has killed them?

June 7. 6 A. M. — River nine and fifteen sixteenths above summer level; has risen one and three sixteenths inches since last evening at 6.30. Thus, it having rained two days most of the time, though not much the last afternoon, the river had risen some six inches at the end of the last afternoon, by the time it cleared up, and only some one and a quarter inches in the next twelve hours of night.

P. M. — To Gowing's Swamp and Copan.

Red maple seed is still in the midst of its fall; is blown far from the trees.

This is a southwest-breezy day, after the rain of the last two days. There is on the whole a fresh and breezy coolness in June thus far, perhaps owing to the rains and the expanded foliage.

White clover already whitens some fields and resounds with bees.

Am surprised to find that in that frosty Holbrook Road Hollow (call it Frosty Poplar Hollow) none of the poplars (*P. tremuliformis*) less than ten feet high (or parts of others less than ten feet above the ground) in the bottom of the hollow have burst their buds yet, making this which in some localities is perhaps the earliest conspicuous tree, in others the latest to leaf. Also the shrub oaks are but just begun to leaf here, and many maples and white birches have but lately leafed, having yet very small and tender leaves. These poplars, and I think the oaks (for I detect no dead and withered leaflets on them), etc., have here acquired a new habit, and are retarded in their development, just as if they grew in a colder latitude, like the plants by the snow in Tucker-

man's Ravine. They have not put forth and then been frost-bitten, as in most hollows, but the spring has come later to them. The poplars generally look quite dead still amid the verdure that surrounds the hollow; only those that rise about ten feet are unfolded at the top. The amount of development is a matter of elevation here. Generally speaking, all poplar buds above a certain level have burst, and all below are inert. The line of separation is very distinct now, because the tops of the tallest are already leafed out and are green. This level line extends to the hillsides all around, and above it all trees are leafed out. This is true of the shrub oaks also, except that a great many of them which stand much higher have already leafed and been frost-bitten, which makes them look about as late as those which apparently have not leafed. This hollow seems to be peculiar, — a dry depression between Beck Stow's and the Great Meadows, — to be steadily cold and late, and not warm by day so that the buds burst and are then killed by frost, as usual. Perhaps it is not so much a frosty hollow as a cold one. It is most open north and south.

Standing at Holbrook's barrel spring, a female chestnut-sided warbler hops within four feet of me, inquisitively holding its head down one side to me and peeping at me.

Seeing house-leek on several rocks in the fields and by roadside in the neighborhood of Brooks Clark's, Farmer told me that it was the work of Joe Dudley, a simple fellow who lives at one of the Clarks; that, though half-witted, he knew more medicinal plants

than almost anybody in the neighborhood. Is it necessary that the simpler should be a simpleton?

I noticed rye (winter rye) just fairly begun to bloom, May 29th.

A painted turtle beginning her hole for eggs at 4 P. M.

Yellow bugs have come by thousands this clear and rather warm day after the rain; also squash-bugs have come. When, in a warm day after rain, the plants are tender and succulent, this is the time they work most.

River at 6 P. M., twelve and five eighths inches above summer level.

To-night the toads ring loudly and generally, as do hylodes also, the thermometer being at 62 at 9 P. M. Four degrees more of warmth, the earth being drier and the water warmer, makes this difference. It appears, then, that the evening just after a rain-storm (as the last), thermometer 58, the toads will be nearly silent, but the hylodes wide awake; but the next evening, with thermometer at 62, both will be wide awake.

Dor-bugs come humming by my head to-night.

The peculiarities of the new leaves, or young ones, are to be observed. *As I now remember*, there is the whitish shoot of the white pine; the reddish brown of the pitch pine, giving a new tinge to its tops; the bead-work of the hemlock; the now just conspicuous bursting lighter glaucous-green buds of the black spruce in cold swamps; the frizzly-looking glaucous-green shoots and leaflets of the fir (and fragrant now or soon); the thin and delicate foliage of the larch; the inconspicuous and fragrant arbor-vitæ; the bead-work of the *Juniperus repens* (red cedar inconspicuous); probably the bead-

work of the yew;¹ the tented leaves of the white oak; the crimson black and white oaks and black shrub lately, and now, in hollows, the downy grayish (at first) of black and white, etc.; the now tender, delicate green of swamp white and chincapin; the large and yellowish, rapidly expanding (at first), of the nut trees; the gamboge-yellow of the birches (now as dark as most, for leaves are acquiring one shade at present); the thick darker green of alders; the downyish of buttonwood *still small*; the soon developed and darkened and fluttering early aspens and Gilgads; the still silvery *Populus grandidentata*; the small-leafed and yellowish locust; the early yellow of *Salix alba*; the fine-leaved *S. nigra*; the wreath-and-column-leaved elm; the suddenly expanding but few-leaved ash trees, showing much stalk, or stem, and branch; the button-bush, with shoots before leaves; the reddish-leafed young checkerberry; the suddenly developed and conspicuous viburnums (sweet and naked); the unequal-leafing paniced andromeda; the purplish-brown stipules of the *Amelanchier Botryapium*; the downy stipules of the *A. oblongifolia*. The red maples now become darker and firm, or hard. The large-leafed sumachs.

June 8. River at 6 A. M. twelve and seven eighths inches above summer level.

2 P. M. — To Well Meadow *via* Walden.

Within a day or two has begun that season of summer when you see afternoon showers, maybe with thunder, or the threat of them, dark in the horizon, and are

¹ June 8th, grown one inch or more, but not very distinct in color.

uncertain whether to venture far away or without an umbrella. I noticed the very first such cloud on the 25th of May, — the dark iris of June. When you go forth to walk at 2 P. M. you see perhaps, in the southwest or west or maybe east horizon, a dark and threatening mass of cloud showing itself just over the woods, its base horizontal and dark, with lighter edges where it is rolled up to the light, while all beneath is the kind of dark slate of falling rain. These are summer showers, come with the heats of summer.

June-grass just begun to bloom in the village.

A great yellow and dark butterfly (C. saw something like it a week ago).¹

What delicate fans are the great red oak leaves now: just developed, so thin and of so tender a green! They hang loosely, flaccidly, down at the mercy of the wind, like a new-born butterfly or dragon-fly. A strong and cold wind would blacken and tear them now. They remind me of the frailest stuffs hung around a dry-goods shop. They have not been hardened by exposure yet, these raw and tender lungs of the tree. The white oak leaves are especially downy, and lint your clothes.

This is truly June when you begin to see brakes (dark green) fully expanded in the wood-paths.

That sedge which grows in the Fox Path Hollow (by the Andromeda Ponds), the coarser one, rather around the sides or slopes than at the very bottom, is a slender *Carex siccata*, almost all out of bloom, — all except that which is at the bottom of the hollow. For I see here

¹ *Papilio Turnus*.

on a smaller scale the same phenomena as at Holbrook Poplar Hollow (*vide* yesterday). The paniced cornel looks generally dead, just beginning to leaf; young white and black oaks are in the red; and the second amelanchier is in the flower still here. Indeed, shrub oaks, and young oaks generally and conspicuously, are quite late — just in the red — now in hollows and other cold parts of the woods; and *generally* these shrubs, including hazel even, have not been frost-bitten, but have not put forth till now.

Carex bromoides may have been out a fortnight at Well Meadow; and *C. scabrata*, say ten days. *C. tenella* (near the earliest cowslip) all in seed and much seed fallen and no sterile flower; say three weeks. *C. intumescens*, say five or six days (*e. g.*, just south of earliest cowslip).

Hoed potatoes first time two or three days ago; my corn to-day.

All stagnant water is covered with the lint from the new leaves, — harmless to drink, — especially after rain. If you [take] a scarlet oak leaf and rub the under side on your coat-sleeve, it will not whiten it, but a white oak leaf will color it as with meal.

Carex polytrichoides grows at Well Meadow.

I see a small mist of cobweb, globular, on a dead twig eight inches above the ground in the wood-path. It is from an inch and a half to two inches in diameter, and when I disturb it I see it swarming with a mass of a thousand minute spiders. A spider-nest lately hatched.

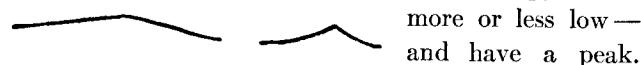
In early June, methinks, as now, we have clearer days, less haze, more or less breeze, — especially after rain, —

and more sparkling water than before. (I look from Fair Haven Hill.) As there is more shade in the woods, so there is more shade in the sky, *i. e.* dark or heavy clouds contrasted with the bright sky, — not the gray clouds of spring.

The leaves generally are almost fully expanded, *i. e.* some of each tree.

You seek the early strawberries in any the most favorable exposure, — on the sides [of] little knolls or swells, or in the little sandy hollows where cows have pawed, settling the question of superiority and which shall lead the herd, when first turned out to pasture.

As I look at the mountains in the horizon, I am struck by the fact that they are all pyramidal — pyramids,

 more or less low —
and have a peak.

Why have the mountains usually a peak? This is not the common form of hills. They do not so impress us at least.

River at 7 P. M. fourteen and a half above summer level.

June 9. 7 A. M. — River fourteen and one eighth above summer level only, though after considerable rain in the night.

We have had half a dozen showers to-day, distinct summer showers from black clouds suddenly wafted up from the west and northeast; also some thunder and hail, — large white stones.

Standing on the Mill-Dam this afternoon, after one of these showers, I noticed the air full of some kind of

down, which at first I mistook for feathers or lint from some chamber, then for light-winged insects, for it rose and fell just like the flights of may-flies. At length I traced it to the white willow behind the blacksmith's shop, which apparently the rain has released. The wind was driving it up between and over the buildings, and it was flying all along the Mill-Dam in a stream, filling the air like a flight of bright-colored gauze-winged insects, as high as the roofs. It was the willow down with a minute blackish seed in the midst or beneath. In the moist air, seen against the still dark clouds, like large white dancing motes, from time to time falling to earth. The rain had apparently loosened them, and the slight breeze succeeding set them a-going.

As I stood talking with one on the sidewalk, I saw two yellow dor-bugs fall successively to the earth from the elm above. They were sluggish, as usual by day, and appeared to have just lost their hold, perhaps on account of the rain or the slight wind arising. I also see them floating in the river, into which they have fallen, or perhaps they have been carried off by its rising. They might be called blunderers.

6 P. M. — Paddle to Flint's hedge.

River fourteen and three quarters above summer level.

Viburnum Lentago nearly in prime.

An abundance of *Carax scoparia* now conspicuously browns the shores, especially below Flint's willows. The *C. lagopodioides* is apparently in prime (out say one week or less) at Flint's hedge. That is apparently the *C. rosea* there under the hickory; observed the 23d of

May. The *C. monile* is now quite conspicuous along the river, as well as the *C. bullata*.

A kingbird's nest and one egg.

C. says that a fox stood near, watching him, in Britton's Hollow to-day. No doubt she had young.

The water-bugs begin to venture out on to the stream from the shadow of a dark wood, as at the Island. So soon as the dusk begins to settle on the river, they begin to steal out, or to extend their circling from amid the bushes and weeds over the channel of the river. They do not simply then, if ever, venture forth, but then invariably, and at once, the whole length of the stream, they one and all sally out and begin to dimple its broad surface, as if it were a necessity so to do.

June 10. Another showery day, or rather shower-threatening.

2 P. M. — To Annursnack.

A very strong northwest wind, and cold. At 6 P. M. it was 58°. This, with wind, makes a very cold day at this season. Yet I do not need fire in the house.

This violent and cool wind must seriously injure the just developed tender leaves. I never observed so much harm of this kind done. Leaves of all kinds are blown off and torn by it, as oak, maple, birch, etc. As I sit under a white oak, I see the fragments torn off — a quarter or half the leaf — filling the air and showering down at each ruder blast, and the ground is spotted green with them. There are not many whole leaves of the white oak blown off, but these torn fragments rather. At the Assabet stone bridge, the water along the shore

is lined with a broad green mass of them, which have been blown into it, three or four feet wide, washed against the shore. Such a wind makes tearing work with them, now that they are so tender.

There is much handsome interrupted fern in the Painted-Cup Meadow, and near the top of one of the clumps we noticed something like a large cocoon, the color of the rusty cinnamon fern wool. It was a red bat, the New York bat, so called. It hung suspended, head directly downward, with its little sharp claws or hooks caught through one of the divisions at the base of one of the pinnæ, above the fructification. It was a delicate rusty brown in color, very like the wool of the cinnamon fern, with the whiter bare spaces seen through it early in the season. I thought at first glance it was a broad brown cocoon, then that it was the plump body of a monstrous emperor moth. It was rusty or reddish brown, white or hoary within or beneath the tips, with a white apparently triangular spot beneath, about the insertion of the wings. Its wings were very compactly folded up, the principal bones (darker-reddish) lying flat along the under side of its body, and a hook on each meeting its opposite under the chin of the creature. It did not look like fur, but more like the plush of the ripe cat-tail head, though more loose, — all trembling in the wind and with the pulsations of the animal. I broke off the top of the fern and let the bat lie on its back in my hand. I held it and turned it about for ten or fifteen minutes, but it did not awake. Once or twice it opened its eyes a little, and even it raised its head, opened its mouth, but soon drowsily dropped its head and fell

asleep again. Its ears were rounded and nearly bare. It was more attentive to sounds than to motions. Finally, by shaking it, and especially by hissing or whistling, I thoroughly awakened it, and it fluttered off twenty or thirty rods to the woods. I cannot but think that its instinct taught it to cling to the interrupted fern, since it might readily be mistaken for a mass of its fruit. Raised its old-haggish head. Unless it showed its head wide awake, it looked like a tender infant.

June 11. 6 A. M. — River twelve inches above summer level at 10.30 A. M. Sail to Tall's Island.

Wind northwest, pretty strong, and not a warm day.

I notice the patches of bulrushes (*Scirpus lacustris*) now generally eighteen inches high and very dark green, but recently showing themselves.

The evergreens are now completely invested by the deciduous trees, and you get the full effect of their dark green contrasting with the yellowish green of the deciduous trees.

The wind does not blow through our river-valley just as the vanes indicate at home, but conformably to the form of the valley somewhat. It depends on whether you have a high and hilly shore to guide it, or a flat one which it may blow across. With a northwest wind, it is difficult to sail from the willow-row to Hubbard's Bath, yet I can sail more westerly from the island point in Fair Haven Bay to the bath-place above; and though I could not do the first to-day, I did sail all the way from Rice's Bar to half a mile above Sherman's Bridge by all the windings of the river.

If the bend is due east and the wind northwest I can sail round it. Again, as I was approaching Bittern Cliff, I had but little wind, but I said to myself, As soon as I reach the cliff I shall find myself in a current of wind blowing into the opening of the pond valley; and I did. Indeed, the wind flows through that part of the river-valley above the water-line somewhat as the water does below it.

I see from time to time a fish, scared by our sail, leap four to six feet through the air above the waves. See many small blue devil's-needles to-day, but no mates with them, and is it not they that the kingbird stoops to snap up, striking the water each time?

I find the Sudbury meadows unexpectedly wet. There is at least one foot of water on the meadows generally. I cut off the principal bends, pushing amid the thin sedge and pipes, and land on Tall's Island. I had carried india-rubber boots to look for wrens' nests, but the water was very much too deep, and I could not have used them except on the very edge in some places. Yet the river in Concord this morning was but just one foot above summer level and about eighteen inches above where it was just before the middle of May, when everybody remarked on its extreme lowness, and Ebby Conant observed to me, "It is lower than ever it was known to be, is n't it?" I told him that I had seen it as low, *in the summer*, about every other year. If you should lower it eighteen inches now here, there would still be much water on the Sudbury meadows. The amount of it is, the Sudbury meadows are so low, referred to the river, that when the river is nineteen and

one eighth inches above extreme low water (the lowest we have had this year) you can push over the greater part of the Sudbury meadows in a boat. Accordingly, on far the greater part of these meadows there is now very little grass, *i. e.* sedge, but thin pipes and sedge, — the *Carex stricta* and *monile* commonly (too wet for *scoparia* and *stellulata*). I do not see the great *Scirpus fluviatilis* there yet. The greater part of the meadows are evidently too wet for the *C. stricta* (occasionally some large tussocks surrounded by water) and *monile* even, and the pipes are but thin. There are many large spaces of pads, — two at Tall's Island, — showing that they are wet all summer. The sedges, even, are thick and rank only on the more elevated and drier edges of the meadow. This is more like a lagoon than a meadow, in fact. It is too wet even for sedges to flourish, for they are not dense, as on other meadows, except on the higher parts near the hills or shores. *C. stricta* grows thinly (with thin pipes) or occasionally in large tufts. On dry parts only, the *C. monile*, etc., etc.

Landing on Tall's Island, I perceive a sour scent from the wilted leaves and scraps of leaves which were blown off yesterday and strew the ground in all woods.

Just within the edge of the wood there, I see a small painted turtle on its back, with its head stretched out as if to turn over. Surprised by the sight, I stooped to investigate the cause. It drew in its head at once, but I noticed that its shell was partially empty. I could see through it from side to side as it lay, its entrails having been extracted through large openings just before the

hind legs. The dead leaves were flattened for a foot over, where it had been operated on, and were a little bloody. Its paunch lay on the leaves, and contained much vegetable matter, — old cranberry leaves, etc. Judging by the striæ, it was not more than five or six years old, — or four or five. Its fore parts were quite alive, its hind legs apparently dead, its inwards gone; apparently its spine perfect. The flies had entered it in numbers. What creature could have done this which it would be difficult for a man to do? I thought of a skunk, weazel, mink, but I do not believe that they could have got their snouts into so small a space as that in front of the hind legs between the shells. The hind legs themselves had not been injured nor the shell scratched. I thought it most likely that it was done by some bird of the heron kind which has a long and powerful bill. And probably this accounts for the many dead turtles which I have found and thought died from disease. Such is Nature, who gave one creature a taste or yearning for another's entrails as its favorite tidbit!! I thought the more of a bird, for, just as we were shoving away from this isle, I heard a sound just like a small dog barking hoarsely, and, looking up, saw it was made by a bittern (*Ardea minor*), a pair of which were flapping over the meadows and probably had a nest in some tussock thereabouts. No wonder the turtle is wary, for, notwithstanding its horny shell, when it comes forth to lay its eggs it runs the risk of having its entrails plucked out. That is the reason that the box turtle, which lives on the land, is made to shut itself up entirely within the shell, and I suspect that the

mud tortoise only comes forth by night. What need the turtle has of some horny shield over those tender parts and avenues to its entrails! I saw several of these painted turtles dead on the bottom.¹

Already I see those handsome fungi spots on the red maple leaves, yellow within, with a green centre, then the light-red ring deepening to crimson. The largest a quarter of an inch in diameter.

Heard many redstarts on the Island. Saw creepers and one wood pewee nest on a swamp white oak, not quite done.

On our way up, we ate our dinner at Rice's shore, and looked over the meadows, covered there with waving sedge, light-glaucous as it is bent by the wind, reflecting a grayish or light-glaucous light from its under side. That meadow opposite Rice's Bath is comparatively well covered with sedge, as the *great* Sudbury meadow is not.

I now first begin to notice the silvery under sides of the red maple and swamp white oak leaves, turned up by the wind. Looking at a hillside of young trees, what various shades of green! The oaks generally are a light and tender and yellowish green; the white birches, dark green now; the maples, dark and silvery.

Notice pads and pontederias are now pretty thick. The white lily pads reddish, and showing their crimson under sides from time to time when the wind blows hardest.

The potamogeton (the large common one) is remark-

¹ Vide June 10, 1858.

able as a *brown* leaf, — fit color for the brown water on which it floats, — but the potamogetons' are few and scarcely obvious yet on the river.

A painted turtle laying, at 5 P. M.

Saw a sphinx moth night before last.

The *Carex tentaculata* at Clamshell in prime, say one week. It abounds at Forget-me-not Shore, — dense-flowered, spreading spikes.

At 9 P. M., 54°, and no toads nor peepers heard.

Some fields began to be white with whiteweed on the 9th.

June 12. P. M. Up Assabet.

I find several *Emys insculpta* nests and eggs, and see two painted turtles going inland to lay at 3 P. M. At this moment these turtles are on their way inland to lay their eggs all over the State, warily drawing in their heads and waiting when you come by. Here is a painted turtle just a rod inland, its back all covered with the fragments of green leaves blown off and washed up yesterday, which now line the shore. It has come out through this wrack. As the river has gone down, these green leaves mark the bank in lines just like sawdust.

I see a young yellow-spot turtle in the Assabet, still quite broad and roundish though I count about seven striae. It is very handsome.

At 7.30 P. M. I hear many toads, it being a warm night, but scarcely any hylodes.¹

River ten and one third above summer level.

¹ 17th, have heard no more hylodes

June 13. 2 P. M. To M. Miles's *via* Clamshell.

Hear of a snapping turtle which had begun to lay her eggs last night in Cyrus Hosmer's corn-field, this side of Clamshell. He found it by its scaring his horse as he was plowing between his corn. The horse started and stopped at it. I saw its track. I see how I can find them. Select a cultivated field, especially a sandy one near the river or a brook, and walk along its edge, parallel with the stream, at this season, and you will see by the track if a turtle has recently been out that way, — can follow it and find the eggs.

I first heard that *tchuck* sound — as of a fish striking a pad — on the 2d of June, when there were very few weeds in the river, and have since heard it repeatedly.

I noticed as I sat in my boat by the riverside last evening, half an hour after sunset, a very low and local, yet dense, fog close to the shore, under the edge of the sedge on one side, a foot high by three or four wide for several rods. It occupied such a space as a shadow does under a hedge. It occurred to me that perhaps the water was cooler there than elsewhere.

I find, on the face of Clamshell Hill, *Carex Muhlenbergii* about ripe, the perigynia nerved distinctly on both sides. I think that this is the same with that of May 26 and June 10, etc., — all that I may have thought *cephalophora* this year, — though I did not find them distinctly nerved on both sides. They were younger. The achenium of this is orbicular. It grows, then, here and probably at Lee's south slope, Annursnack Hill (very common), and is generally long done.

I see, at Martial Miles's, two young woodchucks,

taken sixteen days ago, when they were perhaps a fortnight old. There were four in all, and they were dug out by the aid of a dog. The mother successively *pushed out* her little ones to the dog to save herself, and one was at once killed by the dog. These two are now nearly one-third grown. They have found a hole within the house, into which they run, and whither they have carried shavings, etc., and made a nest. Thence they run outdoors, and feed close about the house, lurking behind barrels, etc. They eat yarrow, clove[r], catnep, etc., and are fed with milk and bread. They do not drink the milk like a dog or like a cat, but simply suck it, taking the sharp edge of the shallow tin dish in their mouths. They are said to spit like a cat. They eat bread sitting upright on their haunches and holding it in their fore paws, just like a squirrel. That is their common and natural mode of eating. They are as gray — or grayer (or hoary) — as the old. Mrs. Miles says they sleep on their heads, *i. e.*, curling their heads right under them; also that they can back as straight into their hole as if they went head foremost. I saw a full-grown one this afternoon which stood so erect and still, its paws hanging down and inobvious as its ears, that it might be mistaken for a short and very stout stake.

At Ledum Swamp the woodwardia is recent; generally not yet expanded; one of the latest ferns. The *Eriophorum vaginatum* is generally gone to seed. The *Carex canescens* (the glaucous *scoparia*-like) is the prevailing *Carex* there, hanging over the ditches and the pool.

I find in J. Hosmer's spring a seedling skunk-cabbage

with the nut attached. It had fallen into the spring, perhaps, from a mouse's store, and a single green leaf two or three inches long had grown from it while a root had penetrated the mud. The strawberry about Hosmer's tub spring has its seeds in pits and is therefore *Fragaria Virginiana*.

The *Eriophorum polystachyon* is well cottoned out.

Now perceive the smell of red clover blossoms.

This afternoon the streets are strewn with the leaves of the buttonwood, which are still falling. Looking up, I see many more hanging wilted or withered, — half-formed leaves. I think that the leaves of these trees were especially injured by the cold wind of the 10th, as the other trees, and are just now falling in consequence. I can tell when I am under a buttonwood by the number of leaves on the ground. With the other trees it was mainly a mechanical injury, done rather by the wind than the cold, but the tender shoots of this tree were killed.

Yesterday I could still see through the bass and the red oak up the Assabet, and the last was a little the densest.

On the 11th I saw, swimming near me on the Sudbury meadows, apparently the *Bryttus obesus*, judging from its stripes and form. It was quite tame and apparently rather sluggish.

June 14. I see near at hand two of those large yellow (and black) butterflies which I have probably seen nearly a month. They rest on the mud near a brook. Two and three quarters to three inches in alar

extent; yellow with a broad black border, outside of which a row of small yellow spots; three or four black marks transversely to the fore wings, and two fine lines parallel with the body on the hinder (?) wings; a small and slender swallow tail with reddish brown and blue at the tail; body black above and yellow along the sides.¹

P. M. — To Second Division.

At Dugan Desert many fresh turtle-tracks. They generally steer for some more elevated and perhaps bushy place. The tail makes a serpentine track, the tracks of the flippers and claws quite distinct, and you see where the turtle rested on its shell, flattening the sand, from time to time. You can easily trace one to where the sand has been disturbed, and dig up its eggs, as I did, — six eggs, about two and a half to three inches deep. *Emys insculpta*.

The juncus of Second Division is just beginning² at the west or northwesterly edge, next the higher ground. It may be that most of it does not bloom. The stigmas are prominent [on] a few plants, the anthers scarcely perceptible yet. The sepals are rather a green [?] purple, with a green centre, than green.

The slender grass mixed with the above, apparently *Trisetum palustre*, is now very commonly in bloom, apparently several days; also the smaller (fifteen-inch) *festuca* two or three days, in dry ground.

The white water ranunculus is abundant in the brook; out say a week, and well open in the sunshine. It is [a]

¹ C. says it is the *Papilio Turnus* of Say.

² Say, rather, in a day or two.

pretty white flower (with yellow centre) seen above the dark brown-green leaves in the rapid water, its peduncle recurved so as to present the flower erect half an inch to an inch above the surface, while the buds are submerged.

See a pigeon. A brood of little partridges in the wood-paths. The old bird utters a loud wiry, mewing sound of alarm, the young a very fine sharp sound like cherry-birds. For a week at least have seen cowbirds about cows.

The common cress gone to seed; only a little lingers.

I felt that the season of storms, *i. e.* of two days' rain, was past about June 1st.

Saw a rainbow in afternoon of 7th.

June 15. 2 P. M. — River four and one half above summer level.

For some time I have not heard toads by day,¹ and not for a long time in numbers; yet they still ring at night. Perhaps it is entirely a matter of temperature, — that in June and maybe the latter half of May (?) they require the coolness of the evening to arouse them. The hylodes appear to have done.

I paddle to Clamshell.

Notice the down of the white willow near the bridge, twenty rods off, whitening Sassafraz Shore for two or three rods like a dense white foam. It is all full of little seeds not sprouted, is as dense as fur, and has first blown fifteen rods overland. This is a late willow to ripen, but the black willow shows no down yet, *as I notice*. It is very conspicuously white along the shore,

¹ But rarely.

a foot or two wide, — a dense downy coat or fleece on the water. Has blown northeast.

See froth about the base of some grass in a meadow. The large early wool-grass of the meadows will shed pollen in a day or two — can *see* stamens — on Hosmer's Flat shore. This it is grows in circles.

As I stood there I heard that peculiar hawk-like (for rhythm) but more resonant or clanging kind of scream which I may have heard before this year, plover-like, indefinitely far, — over the Clamshell plain. After proceeding half a dozen rods toward the hill, I heard the familiar willet note of the upland plover and, looking up, saw one standing erect — like a large tell-tale, or chicken with its head stretched up — on the rail fence. After a while it flew off southwest and low, then wheeled and went a little higher down the river. Of pigeon size, but quick quivering wings. Finally rose higher and flew more or less zigzag, as if uncertain where it would alight, and at last, when almost out of sight, it pitched down into a field near Cyrus Hubbard's. It was the same note I heard so well on Cape Cod in July, '55, and probably the same I heard in the Shaw-sheen valley, May 15, 1858. I suspect, then, that it breeds here.



The button-bush is now fairly green.

The *Carex stricta* tufts are now as large as ever, and, the culms falling over, they are like great long-haired

heads, now drooping around the great tussocks. I know of no other sedge that make so massive and conspicuous a tussock, yet with a slender leaf. This the one that reflects the peculiar glaucous sheen from its bent surfaces.

The turtles are apparently now in the midst of their laying. I go looking for them, to see where they have left the water for this purpose. See a snapping turtle whose shell is about ten inches long making her hole on the top of the sand-bank at the steam-mill site, within four rods of the road. She pauses warily at sound of my boat, but I should have mistaken her for a dark stone if she had [not] lifted her snout above her shell. I went to her as she lay and hissed by the hole at 4 p. m. It was about three and a half inches across, and not perpendicular but chiefly on one side; say five inches deep (as yet), and four plus inches wide beneath, but only about one inch of the bottom exposed when you looked straight down, — in short, like the common *Emys picta's* hole. She had copiously wet the ground before or while digging, as the *picta* does. Saw two or three similar holes made by her afterward. There was her broad track (some ten inches wide) up the sandy or gravelly bank, and I saw where she had before dug, or begun to dig, within a rod of this, but had retreated to the river. I withdrew to the bridge to observe her (not having touched her), but she took the occasion to hasten to the river.

A thunder-shower in the north goes down the Merrimack.

We have had warmer weather for several days, say

since 12th. A new season begun, — daily baths, thin coat, etc.¹

The bullfrogs now *commonly* trump at night, and the mosquitoes are now really troublesome.

June 16. I notice this forenoon, about my melons, an excrement five to six eighths of an inch long, narrowed and with a sort of stem at one end, full of wing-cases of beetles, etc., and black, looking at first like the cocoon of some insect, but moist and fresh. Also saw four or five on the sidewalk as I went to the post-office (after a warm night). It is probably the excrement of the toad, of which I have seen no account.

I saw great puffs on the andromeda the 14th.

At 2 P. M. 85°, and about same for several days past. I have heard no hylodes since the 12th, and no purring frogs (*Rana palustris*). Think they ceased about the same time, or with the 85° heat, *i. e.* with ribbon for neck and thinnest sack.

Thunder-showers show themselves about 2 P. M. in the west, but split at sight of Concord and go east on each side, we getting only a slight shower.

At evening paddle to Clamshell.

The meadows full of lightning-bugs to-night; first seen the 14th. (There had then been a thunder-shower *in the north*.)

Rose-bugs two or three days at least.

It appears to me that these phenomena occur simultaneously, say June 12th, *viz.* :—

¹ Heat probably about 85° at 2 P. M. *Vide* [below]

Heat about 85° at 2 P. M. True summer.

Hylodes cease to peep.

Purring frogs (*Rana palustris*) cease.

Lightning-bugs first seen.

Bullfrogs trump *generally*.

Mosquitoes begin to be really troublesome.

Afternoon thunder-showers almost regular.¹

Sleep with open window (10th), and wear thin coat and ribbon on neck.

Turtles fairly and generally begun to lay.

As I stand at Clamshell, it occurs to me that I never see the stinkpot laying its eggs on land by day; that therefore it must lay its eggs by night.² Where, then, shall I look for them now by night with a lantern? Why not here as well as anywhere? And I turn my eyes in the twilight to the shore there, when I see a turtle just entering the water. Running to it with haste, I see it (after it has entered the river) to be a stinkpot, which probably was frightened by us. Had come forth to lay, or, possibly, was returning. I think I never see the *picta* and *insculpta* and yellow-spot ashore by night.

The pickerel-weed appears to have suddenly shot up to about its final height, but it is mainly owing to the river having rapidly fallen a foot within a few days. So far as the height of this plant is concerned, the river now reaches its summer régime. Not yet the potamogetons.

Channing found a marsh hawk's nest on the Great Meadows this afternoon, with three eggs considerably developed. This is the third I have heard of this year.³

¹ 15th, 16th, 17th.

² No. *Vide* back in Journal to when Ricketson here once.

³ *Vide* July 3d.

June 17. Quite a fog this morning.

About 1 P. M., notice thunder-clouds in west and hear the muttering. As yesterday, it splits at sight of Concord and goes south and north. Nevertheless about 3 P. M. begins a steady gentle rain here for several hours, and in the night again, the thunder, as yesterday, mostly forerunning or superficial to the shower.

This the third day of thunder-showers in afternoon, though the 14th it did not rain here.

Carex flava out, possibly a week.

June 18. The tumultuous singing of birds, a burst of melody, wakes me up (the window being open) these mornings at dawn. What a *matinée* to have poured into your slumber!

2 P. M. — To Walden and Cliffs.

Rabbit clover is now two or three inches high.

I see in the southerly bays of Walden the pine pollen now washed up thickly; only at the bottom of the bays, especially the deep long bay, where it is a couple of rods long by six to twenty-four inches wide and one inch deep; pure sulphur-yellow, and now has no smell. It has come quite across the pond from where the pines stand, full half a mile, probably washed across most of the way.

I have scarcely seen a warbler for a fortnight, or since the leaves have been developed, though I hear plenty of them in the tree-tops.

Standing on Emerson's Cliff, I see very distinctly the redness of a luxuriant field of clover on the top of Fair Haven Hill, some two thirds of a mile off, the day being

cloudy and misty, the sun just ready to break out. You might have mistaken the redness for that of withered pine boughs where wood was cut last winter.

On this Emerson hill I notice, among other growths after the cutting two years ago, — the huckleberry and blueberry, — that the sedge *P. Pennsylvanica* has shot up into large and luxuriant and densely set tufts, giving to the spaces between the little oak sprouts and clumps quite a grassy appearance.

Notice those remarkable galls on a shrub oak, two or three together, or hardly so broad as this, each with a grub in it.



June 19. Dewy clouds in the air to-day and yesterday, yet not threatening rain; somewhat dog-day-like.

Let an oak be hewed and put into the frame of a house, where it is sheltered, and it will last several centuries. Even as a sill it may last one hundred and fifty years. But simply cut it down and let it lie, though in an open pasture, and it will probably be thoroughly rotten in twenty-five years. There is the oak cut down at Clamshell some twenty years ago, the butt left on the ground. It has about two-thirds wasted away, and is hardly fit for fuel.

The leading shoot of one of my young white pines (not the rankest, but easily reached) has grown sixteen and a quarter inches. Let me measure it again in a few days.¹

¹ *Vide* 27th and July 4th.

2 P. M. — To Flint's Pond.

Going through the cold hollows at Ripple Lake, where the wood was cut some twenty-two years ago, I observe that they are still almost entirely sedge, — bare grassy hollows, — while at a certain height all around the wood rises abruptly and densely to the height of fifteen or twenty feet. These portions are kept bare and are likely to be an indefinite time longer. The sedge of these hollows is the *Pennsylvanica*, slender *siccata*, and some *vestita*, as well as grass. There are numberless chocolate-colored and other devil's-needles coursing up and down these hollows now.

Observe a nest crowded full with four young brown thrashers half fledged. You would think they would die of heat, so densely packed and overflowing. Three head one way, and the other lies across. How quickly a fox would gobble them up!

Ripple Lake northeast shore is lined with a pale-yellowish pine pollen, though there are no pines within a dozen rods, and those (white pines) on the east. Half of the pool is gray with the dust, as with meal. Is not this paler yellow that of the white pine? So of Goose Pond. Thus these ponds and pools in the woods catch the pine pollen that may be floating in the atmosphere, and it is washed up to one side (the northeast side). At Flint's also. They are *pollen-ometers*. I see at Flint's a great many winged insects collected on it.

The devil's-needles now abound in wood-paths and about the Ripple Lakes. Even if your eyes were shut you would know they were there, hearing the rustling

of their wings as they flit by or wheel in pursuit of one another. Very various colors and sizes.

I observe that the water-bugs confine themselves to the shore, even of Ripple Lake, now by *day*, though I doubt if there are fishes that would disturb them in the middle here.

The eriocaulon shows white heads two to five inches high.

I follow a distinct fox-path amid the grass and bushes for some forty rods beyond Britton's Hollow, leading from the great fox-hole. It branches on reaching the peach-orchard. No doubt by these routes they oftenest go and return to their hole. As broad as a cart-wheel, and at last best seen when you do not look too hard for it.

Some tall rough goldenrod is three feet high, and generally in rich ground it is two or more. Also some fragrant goldenrod is two feet high. The *Carex tentaculata* is peculiar whitish-spiked. The clethra has a peculiarly fresh, shining leaf. The red oak leaf has a hard gloss to it.

Some large round oak-apples on small trees or bushes are interesting and handsome even as a fruit, — a lemon or orange. Here are some five inches in circumference, glossy-green on one side (pale on the other) with whitish prominences.

Those two pointed



ones of yesterday are a pale dull green, with similar whitish points.

Pads already eaten for some time, in straight lines as if racked by shot; and I see that they are thus eaten

from the upper side, for here is one place begun but not eaten through.

Is not that the *Glyceria pallida* now out a day or two in the small fen just south of Lincoln bound on the Turnpike? *Eriophorum gracile* (the triangular-leafed) well out, same place with the last, probably some days. Redstarts are common here now. Sugar maple keys are falling on the Common. The green sarsaparilla berries make quite a show as you catch sight of them half concealed by their leaves.

June 20. No dew this morning, but early in the forenoon.

Heavy rain (with holdings up) all day and part of the following night. Very little wind, and that north-east. (This the result of the two days of dewy clouds, dogdayish.) It comes down perpendicularly. Nearly an inch and a quarter falls into a large tin pail with upright sides (which I had placed in the garden for the purpose) between 8 A. M. and 12, and by the next morning there is two and one eighth inches, — which is the whole of it. More rain falls to-day than any day since March, if not this year. It is a warm rain, and I sit all the day and evening with my window open. It beats down the potatoes, grass, etc., and so weighs down the luxuriant shoots of the currant that they either break off or require to be broken off at a great sacrifice of growth, — eighteen to twenty-four inches long.

June 21. 6 A. M. — The river has risen to seven and a half inches above summer level (probably from

about two or three above in the morning of yesterday). At 7 P. M. it is eleven and a half inches above summer level.

The wind is still northeast, and the air is now so cold (cooled by the rain) that most have fires, and it is uncomfortably cool out of the sun, which does not shine much this forenoon.

Phalaris Americana (some probably two or three days). It is the rankest and for its size most conspicuous common grass. You see great dark-green islets of it by the side of, or even in, the river, where it is muddy, with the large whitish panicles (?) lifted above the broad rank leaves. These are four or five feet high, very luxuriant.

I first noticed elms full of dark shade at a distance some three or four days ago. As soon as they are well leafed it is seen how gracefully they droop.

At 12 M. it is only 59° above zero, and I am surprised to hear some toads ring, which I have not heard lately by day; as if this degree of coolness even (at midday) was agreeable to them, corresponding to 62 or more at evening.

At noon the sun comes fairly out and the wind rises. June has been quite a breezy month thus far. I have waited in vain for perfectly smooth water in which to watch the bream poised over her nest. There has been almost a steady breeze or breeziness with the waving of new-leafed boughs.

2 P. M. — To Little Truro.

Carex flava grows up the railroad, about as far as the spring on the north side. I see, on the railroad track,

young partridges about as big as my fist, while the old bird in grass does not see me at first. The young now make a sound not so fine, more like some of the notes of little chickens. The old bird steps about alarmed with swollen throat, or neck-feathers puffed up.

Crossing William Brown's dry field in front of the schoolhouse, I see a young thrasher which has just left the nest, and the old bird about it. I oftenest find them in half-open dry fields where there are scattered birches, pines, and shrub oaks.

The earliest cinquefoil grows abundantly in Brown's dry pastures, but I scarcely see one in bloom now. The silvery cinquefoil is abundant.

Having noticed the pine pollen washed up on the shore of three or four ponds in the woods lately and at Ripple Lake, a dozen rods from the nearest pine, also having seen the pollen carried off visibly half a dozen rods from a pitch pine which I had jarred, and rising all the while when there was very little wind, it suggested to me that the air must be full of this fine dust at this season, that it must be carried to great distances, when dry, and falling at night perhaps, or with a change in the atmosphere, its presence might be detected remote from pines by examining the edges of pretty large bodies of water, where it would be collected to one side by the wind and waves from a large area.

So I thought over all the small ponds in the township in order to select one or more most remote from the woods or pines, whose shores I might examine and so test my theory. I could think of none more favorable

than this little pond only four rods in diameter, a watering-place in John Brown's pasture, which has but few pads in it. It is a small round pond at the bottom of a hollow in the midst of a perfectly bare, dry pasture. The nearest wood of any kind is just thirty-nine rods distant northward, and across a road from the edge of the pond. Any other wood in other directions is five or six times as far. I knew it was a bad time to try my experiment, — just after such heavy rains and when the pines are effete, — a little too late. The wind was now blowing quite strong from the northeast, whereas all the pollen that I had seen hitherto had been collected on the northeast sides of ponds by a southwest wind. I approached the pond from the northeast and, looking over it and carefully along the shore there, could detect no pollen. I then proceeded to walk round it, but still could detect none. I then said to myself, If there was any here before the rain and northeast wind, it must have been on the northeast side and then have been washed over and now up high quite at or on the shore. I looked there carefully, stooping down, and was gratified to find, after all, a distinct yellow line of pollen dust about half an inch in width — or washing off to two or three times that width — quite on the edge, and some dead twigs which I took up from the wet shore were completely coated with it, as with sulphur. This yellow line reached half a rod along the southwest side, and I then detected a little of the dust slightly graying the surface for two or three feet out there. (Many little snow(?)-fleas on it.)

When I thought I had failed, I was much pleased to detect, after all, this distinct yellow line, revealing unmistakably the presence of pines in the neighborhood and thus confirming my theory. As chemists detect the presence of ozone in the atmosphere by exposing to it a delicately prepared paper, so the lakes detect for us thus the presence of the pine pollen in the atmosphere. They are our *pollinometers*. How much of this invisible dust must be floating in the atmosphere, and be inhaled and drunk by us at this season!! Who knows but the pollen of some plants may be unwholesome to inhale, and produce the diseases of the season?¹

Of course a large pond will collect the most, and you will find most at the bottom of long deep bays into which the wind blows.

I do not believe that there is any part of this town on which the pollen of the pine may not fall. The time to examine the ponds this year was, I should say, from the 15th to the 20th of this month. Looking at the trees to-day, I find that the pines are now effete, especially the pitch pine, the sterile flowers now turned reddish. The white pine is lighter-colored, and all but a very little indeed is effete. In the white pine it is a dense cluster of twenty or thirty little flowers about the base of this year's shoot.

I did not expect to find any pollen, the pond was so small and distant from any wood, but I thought that I would examine. Who knows but the pollen of various kinds floating through the air at this season may be the

¹ Vide June 20 and 22, 1858.

source of some of the peculiar perfumes which are not traceable to their sources?

Noticed a dead *Emys picta* on its back, — dead a month or two. The head was gone, and of course all the insides, and there was a hole in front of its hind legs on each side; the legs left. Was not this killed just as the one at Tall's Island?

That meadow-grass which emits the peculiar glaucous sheen from its bent and waving surface is the *Carex stricta*, either in tufts or growing thinly. (Vide 15th.) *Carex lupulina*, say four or five days, or maybe a week, at Little Truro Pond-hole. This in plenty just at the Hill Landing old bridge site.

Saw the pigeon-egg puffball formed on the 19th.

Started up a nighthawk in the dry field near the pond-hole. Probably they affect these dry and gravelly fields, as at Truro, where the small fescue grass grows and some tufts of *Carex scoparia* (?).

Tall fescue grass.

Eleocharis, the two small still in bloom, especially the smallest.

June 22. River at 6 A. M. eleven and fifteen sixteenths inches above summer level, having risen only seven sixteenths in the night. At 7 P. M. it is fifteen and one eighth above summer level.

I see minnows by the shore half an inch long.

Rice tells me that he saw in a mud-hole near the river in Sudbury, about a fortnight ago, a pout protecting her ova, which were in a ball about as big as an apple, all exposed, not at all hatched (I think he said on a stick),

under which she swam. There were also pouts of various sizes about there, some only two inches long (!), says his son William.

Hear the peculiar peep of young golden robins on the elms this morning.

What is that great toothless, thin-shelled green clam which Rice brought from the same mud-hole mentioned above, — just six inches long, three inches high, and two and three quarters broad? Very green, with rays. A handsome shell.¹

There is a strong northeast wind this afternoon, the thermometer 60° only at 12.30 P. M. and 65 at 5 P. M. But it is remarkably cold in the wind, and you require a thick coat. 65° now, with wind, is uncomfortably cold. I hear that it has killed some birds. Martins, etc., found dead in neighbors' yards.

The heavy rain of the 20th with the cold of the 21st has killed some birds. A martin and another bird were found dead in Wheildon's garden.

The leaves are now rapidly becoming hard and glazed, acquiring firmness as well as a darker color.

2 P. M. — To Great Meadows.

At Moore's Swamp the *Carex comosa* (?).

A painted turtle digging to lay in wood-path at 3.30 P. M. The throat of the hole in this hard ground is only seven eighths of an inch to an inch wide, and the hole is now about two inches deep and about the same in width beneath, expanding in all directions beneath, but chiefly toward the head of the turtle. 

On the northeast side of the Great Fields there are

¹ *Anodon fluviatilis*.

two or three little patches of sand one to two rods across with a few slivers of arrowhead stone sprinkled over them. It is easy to find an arrowhead if it is exposed. These spots are plowed only by the wind and rain, and yet I rarely cross them but I find a new arrowhead exposed.

The latest aspens at Holbrook's Hollow probably did not leaf till about a week ago, or the middle of June. I saw them on the 7th as well as to-day. They have now grown an inch.

Observe the tops of the flowering fern killed by frost along the south edge of the Great Meadows last night. These ferns are very tender and betray it.

I walk straight across the meadow from west of Holbrook's to the river, and the prevailing grasses were *Scirpus Eriophorum* (out several days), *Carex stellulata*, *C. bullata*, with oftenest two fertile spikes, methinks; this the order of their prevalence.¹ *Alopecurus geniculatus* in the Great Meadow path quite fresh, say several (three or four) days.

The pretty new moon in the west is quite red this evening.

June 23. River at 7 A. M. fifteen inches above summer level, having fallen.

A sparrow's nest with three fresh eggs in a hollow of a willow, two and a half feet from ground, at my boat's place. The bird has the usual marks, except perhaps the spot on the breast is more obvious, and the lines over the eyes more white and distinct. The eggs have a

¹ *Vide* June 16, 1859.

much *bluer*-white ground than those I have, and beside are but slightly spotted with brown except toward the larger end. The chip of the bird is metallic, not the hoarse chip of the spring song sparrow. *Vide* eggs in collection.¹

2 P. M. — To Bare Hill road.

This is a decidedly dogdayish day,² foretold by the red moon of last evening. The sunlight, even this forenoon, was peculiarly yellow, passing through misty clouds, and this afternoon the atmosphere is decidedly blue. I see it in the street within thirty rods, and perceive a distinct musty odor.

First *bluish*, *musty* dog-day, and sultry. Thermometer at two only 85°, however, and wind comes easterly soon and rather cool.³

The foliage is now thick and for the most part dark, and this kind of weather is probably the result of this amount of shadow; but it grows cooler with easterly wind before night.

I suspect that it may be true, as said, that the first half of June is cooler than the last half of May, on this account.

Smilacina racemosa, how long? *Agrostis scabra*,⁴ pond path at east end of Walden. *Poa compressa* may fairly begin on the railroad at Walden; also piper grass just begun.

I see a young *Rana sylvatica* in the woods, only

¹ *Vide* June 25, 1856.

² And the 24th also.

³ As it does the 24th.

⁴ Probably *vulgaris*.

five eighths of an inch long. Or is it a *hylodes*? — for I see a faint cross-like mark on the back and yet the black dash on the sides of the face.

At 7 P. M. the river is fifteen and three fourths inches above summer level.¹

It rained hard on the 20th and part of the following night, — two and one eighth inches of rain in all, there being no drought, — raising the river from some two or three inches above summer level to seven and a half inches above summer level at 7 A. M. of the 21st.

At 7 P. M. of the 21st, 11½ inches above summer level.

6 A. M. 22d, 11¼

7 P. M. 22d, 15¼

7 A. M. 23d, 15

7 P. M. 23d, 15¾

Thus two and one eighth inches of rain at this season, falling in one day, with little or no wind, raises the river while it is falling some four inches; on the next day it rises four more; the next night it rises seven sixteenths inch more; the next day (second after the rain) it rises three and three sixteenths inches; the next night it falls one eighth of an inch; it rises again three fourths of an inch, or five eighths absolutely; *i. e.*, it rises still the third day after the rain. That is, after a remarkably heavy rain of one day it does not rise as much in a night as it ordinarily falls in a day at this season.

June 24. 2 P. M. — To Clamshell.

The dogdayish weather continues.

¹ At height for this rise.

The leaves generally are eaten when young and tender, as the leaves of melons (squashes) as soon as they expand a little. When they become more hard and glazed they are less edible. Hence this and earlier is the season for galls of various kinds. The pads are already extensively eaten. I do not know what eats those shot-like lines, but I see the pads, especially of the yellow lilies, with many little black or dark-brown grubs on them (no doubt hatched on them), annular, and yellow beneath, and now eating them but not eating through, making crinkled lines all over them.

Notice no young breems in the nests yet.¹

That hilly road through Baker's land to Bare Hill is a true up-country road with the scent of ferns along it. There are birches, etc., enough in the road for bean-poles and to stick your peas with, and the man who has just built him a true country-house there is now indulging himself with pea-brush probably for the first time. The brush five times as high as his peas, which are now in bloom.

Have seen the flowering fern ripe for some days.

Saw young bluebirds fully grown yesterday, but with a feeble note and dull colors.

Start a woodcock from amid ferns.

Common curled dock, some time. Notice the red cups of the tops of trumpet-weed a foot [or] two high.

All plants leafed, say the middle of June, and summer commenced. River begins then to wear its summer aspect.

¹ Perhaps I do July 2d.

I perceive the rank, dog-like scent of meadow-rue. See white lily buds.

June 25. 2 P. M. — To Dugan Desert.

I see a female marsh hawk, beating along a wall, suddenly give chase to a small bird, dashing to right and left twenty feet high about a pine.

There are no turtle-tracks now on the desert, but I see many crow-tracks there, and where they have pecked or scratched in the sand in many places, possibly smelling the eggs!? Also the track of a fox over the sand, and find his excrement *buried* in the sand, and the crows have dabbled in the sand over it. It is full of fur as usual. What an unfailing supply of small game it secures that its excrement should be so generally of fur!

As near as I can make out with my glass, I see and hear the parti-colored warbler¹ at Ledum Swamp on the larches and pines. A bluish back, yellow breast with a reddish crescent above, and white belly, and a continuous *screeching* note to the end.

At evening up the Assabet.

7 P. M., river twelve and a half inches above summer level.

The water of the Assabet is now generally whitened with the down of the black willow floating on it, yet it is not yet collected in very dense masses, not quite in the prime of its fall. The coarsest kind of lint that falls on the stream. The phalaris grass, now maybe in its prime, is, with its great white spike lifted over [?] its rank

¹ Yes.

blades, eighteen inches above, perhaps the most conspicuous grass we have in Concord (or hereabouts, except the phragmites). Will soon close up into a narrow spike.

Scirpus lacustris, some days.

Hear four or five screech owls on different sides of the river, uttering those peculiar low screwing or working, ventriloquial sounds. Probably young birds, some of them, lately taken flight.

Farmers are just beginning their June-grass haying.

The *Glyceria pallida* (?)¹ grows in that ditch at the little brook on the Corner road, close to the road on the south side in A. Wheeler's (?) land.

June 26. Still hazy and dogdayish.

Go to the menagerie in the afternoon.

At 5 P. M., — river ten and a half inches above summer level, — cross the meadow to the Hemlocks.

The blue-eyed grass, now in its prime, occupies the drier and harder parts of the meadow, where I can walk dry-shod, but where the coarser sedge grows and it is lower and wetter there is none of it. I keep dry by following this blue guide, and the grass is not very high about it. You cross the meadows dry-shod by following the winding lead of the blue-eyed grass, which grows only on the firmer, more elevated, and drier parts.

The hemlocks are too much grown now and are too dark a green to show the handsomest bead-work by contrast.

Under the Hemlocks, on the bare bank, apparently the *Aira flexuosa*, not long.

¹ No. Torrey's *Poa dentata*.

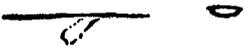
Young black willows have sprouted and put forth their two minute round leaflets where the cottony seeds have lodged in a scum against the alders, etc. Leaflets from one fortieth to one twenty-fifth of an inch in diameter. When separated from the continuous film of down they have a tendency to sink.

The Canada naiad (?), which I gathered yesterday, had perhaps bloomed. Thought I detected with my glass something like stamens about the little balls.

June 27. — 2 P. M. — Up Assabet to Farmer's.

See on the open grassy bank and shore, just this side the Hemlocks, a partridge with her little brood. Being in my boat, I went within three rods, and they were hardly scared at all. The young were but little bigger than chickens four or five days old, yet could fly two or three rods. The partridge now takes out her brood to feed, all the country over; and what an extensive range they have! — not confined to a barn-yard.

To-day it is cool and clear and quite windy, and the black willow down is now washed up and collected against the alders and weeds; the river mostly swept of its dust and looking more sparkling.

Farmer says that he found on the 24th a black snake laying her eggs on the side of the hill between his peach-orchard and the ledge in the woods. He showed me the place to-day. The hole was about three inches long by one wide and four or five inches deep, in a slanting direction.  He found the snake lying with her head and tail both

at once in the hole, occupied with laying; and she had then layed twelve eggs. He pressed out two more, — fourteen in all. They were not connected together, and were twice as large as the sternothærus' egg; soft-shelled. He left them on the ground, but when he went there this morning he saw some crows devour them before his eyes. This hole was not in sand, but in rather lean pasture sod, and hard, freshly made. It bore a general resemblance to a turtle's hole. Was close by where his uncle (?) tried to dig through to the other side of the world. Dug more or less for three years. Used to dig nights, as long as one candle lasted. Left a stone just between him and the other side, not to be removed till he was ready to marry Washington's sister. The foxes now occupy his hole.



Holcus lanatus, a week or ten days, Hosmer's field on Assabet, north of Poke-logan. *Juncus tenuis*, three or four days.

Farmer calls the flowering fern "staghorn;" says it is the common name with farmers.

His bees are swarming, all collected over the outside of the hive.

River at 6 p. m. seven and five eighths inches above summer level.

The pine shoot which on the 19th had grown sixteen and a quarter inches is now twenty and three quarters long, or has grown four and a half inches in eight days, a little more than half an inch a day. It had evidently grown much faster before.¹

¹ Vide July 4th.

Get from Farmer specimens of barley and wheat, and, in the former, apparently *Bromus secalinus*¹ (?); none of them yet out.

June 28. — Assabet Bath and Sunset Interval.

On the 25th I first noticed that the black willows — the sterile ones, not whitened with down — were just begun to be handsome, with their light ethereal green against other trees. They are now getting to be sufficiently thick.

This month, it must be 85° at 2 p. m. and *still* to make hot weather. 80° with wind is quite comfortable.

June-grass is now generally browned atop, its spikes being out of bloom and old. Herd's-grass out, two or three days.

I now see and hear many young birds about; young barn swallows on telegraph-wire, etc.

Farmer said yesterday that he thought foxes did not live so much in the depth of the woods as on open hill-sides, where they lay out and overlooked the operations of men, — studied their ways, — which made them so cunning.

The 21st I began to notice the *Festuca ovina* in dry pastures, prevailing and so marking a season. Fowl-meadow grass, though not quite in bloom, has now begun to make an impression on the inlands and in the meadows, with its dense-growing recurved or drooping green tops. *Panicum latifolium*, how long?

I see no tortoises laying nowadays, but I meet to-day with a wood tortoise which is eating the leaves of the

¹ Vide 30th.

early potentilla, and, soon after, another in Hosmer's sandy bank field north of Assabet Bridge, deliberately eating *sorrel*. It was evidently quite an old one, its back being worn quite smooth, and its motions peculiarly sluggish. It continued to eat when I was within a few feet, holding its head high and biting down at it, each time bringing away a piece of a leaf. It made you think of an old and sick tortoise eating some salutary herb to cure itself with, and reminded me of the stories of the ancients, who, I think, made the tortoises thus cure themselves with dittany or origanum when bitten by a venomous snake. That is, it impressed me as if it must know the virtues of herbs well and could select the one best suited [to] its condition of body. When I came nearer, it at once drew in its head. Its back was smooth and yellowish, — a venerable tortoise. When I moved off, it at once withdrew into the woods.

See two of those remarkably brilliant beetles near the caving edge here, with copper and green reflections (head green), and blue ones. They are sluggish and can be transported on a leaf.

On the alder leaves by the riverside in Sunset Interval, I see countless small black miller-like insects three eighths of an inch and of this form: but all of them had not feelers.

I think they were the same that hover in a swarm over the water at evening.

June 29. Dogdayish and showery, with thunder.

At 6 P. M. 91°, the hottest yet, though a thunder-



shower has passed northeast and grazed us, and, in consequence, at 6.30 or 7, another thunder-shower comes up from the southwest and there is a sudden burst from it with a remarkably strong, gusty wind, and the rain for fifteen minutes falls in a blinding deluge. I think I never saw it rain so hard. The roof of the depot shed is taken off, many trees torn to pieces, the garden flooded at once, corn and potatoes, etc., beaten flat.¹ You could not see distinctly many rods through the rain. It was the very strong gusts added to the weight of the rain that did the mischief. There was little or no wind before the shower; it belonged wholly to it. Thus our most violent thunder-shower followed the hottest hour of the month.

June 30. Try the temperature of the springs and pond. At 2.15 P. M. the atmosphere north of house is 83° above zero, and the same afternoon, the water of the Boiling Spring, 45°; our well after pumping, 49°; Brister's Spring, 49°; Walden Pond (at bottom, in four feet water), 71°; river at one rod from shore, 77°.² I see that the temperature of the Boiling Spring on the 6th of March, 1846, was also 45°, and I suspect it varies very little throughout the year.

If you paw into sand, both by day and night, you find the heat to be permanently greatest some three inches (to-day) below the surface, and this is about [the] depth at which the tortoises place their eggs. Where the tem-

¹ There was the same sudden and remarkably violent storm about two hours earlier all up and down the Hudson, and it struck the Great Eastern at her moorings in New York and caused some damage.

² 2 P. M., the 1st of July, the air is 77° and the river 75°.

perature is highest permanently and changes least between night and day.

At 2 P. M. the river is six inches above summer level.

Generally speaking, the fields are not imbrowned yet, but the freshness of the year is preserved. Standing on the side of Fair Haven Hill the verdure generally appears at its height, the air clear, and the water sparkling (after the rain of yesterday), and it is a world of glossy leaves and grassy fields and meads.

The foliage of deciduous trees is now so nearly as dark as evergreens that I am not struck by the contrast.

I think that the shadows under the edge of woods are less noticed now because the woods themselves are darker. So, too, with the darkness and shadows of elms.

Seen through this clear, sparkling, breezy air, the fields, woods, and meadows are very brilliant and fair. The leaves are now hard and glossy (the oldest), yet still comparatively fresh, and I do not see a single acre of grass that has been cut yet. The river meadows on each side the stream, looking toward the light, have an elysian beauty. A light-yellow plush or velvet, as if some gamboge had been rubbed into them. They are by far the most bright and sunny-looking spots, such is the color of the sedges which grow there, while the pastures and hillsides are dark-green and the grain-fields glaucous-green. It is remarkable that the meadows, which are the lowest part, should have this lightest, sunniest, yellowest look.

Now that season begins when you see the river to be so regularly divided longitudinally into pads, smooth water, and sparkling ripples between, in a clear day.

The older white oak leaves have now a blue or dark-purplish bloom on their cheeks or prominences, which you can rub off, leaving them green.

The grasses of Sedge Path are the early sedge (which is much of it turned by a smut), *Festuca ovina*, and the *Carex siccata*. *Bromus secalinus* by Walden, say yesterday. This and that in Farmer's barley the same, though some is downy and some smooth, and it does not open much in bloom because the glume does not reach beyond middle of second flower.

I hear no toads to speak of, of late, except a few at evening.

See in the garden the hole in which a toad sits by day. It is a round hole about the width of his  body across, and extending under one side about the length of my little finger; in the main, indeed, shaped like a turtle's nest, but not so broad beneath and not quite so deep. There sits the toad, in the shade, and concealed completely under the ground, with its head toward the entrance, waiting for evening. This was on the side of a corn-hill.

They are now cutting clover. *Scirpus subterminalis* is apparently just beginning at the Pout's Nest, the water being very low.

There is a turnip-like weed now in flower and going to [seed], a pest in grain-fields; same as I noticed formerly in Stow's field; say six weeks. Is it *Brassica campestris*?¹

¹ Vide Aug. 19th.