VI

1861

(ÆT. 43–44)

Jan. 3. The third considerable snow-storm.

The berries which I celebrate appear to have a range — most of them — very nearly coterminous with what has been called the Algonquin Family of Indians, whose territories are now occupied by the Eastern, Middle, and Northwestern States and the Canadas, and completely surrounded those of the Iroquois, who occupied what is now the State of New York. These were the small fruits of the Algonquin and Iroquois families. The Algonquins appear to have described this kind of fruits generally by words ending in the syllables *meenar*.

It is true we have in the Northern States a few wild plums and inedible crab-apples, a few palatable grapes and nuts, but I think that our various species of berries are our *wild fruits* to be compared with the more celebrated ones of the tropics, and that, taking all things into consideration, New England will bear comparison with the West India Islands. I have not heard of any similar amusement there superior to huckleberrying here, the object not being merely to get a shipload of something which you can eat or sell.

Why should the Ornamental Tree Society confine its labors to the highway only? An Englishman laying out

his ground does not regard simply the avenues and walks. Does not the landscape deserve attention?

What are the natural features which make a township handsome? A river, with its waterfalls and meadows, a lake, a hill, a cliff or individual rocks, a forest, and ancient trees standing singly. Such things are beautiful; they have a high use which dollars and cents never represent. If the inhabitants of a town were wise, they would seek to preserve these things, though at a considerable expense; for such things educate far more than any hired teachers or preachers, or any at present recognized system of school education. I do not think him fit to be the founder of a state or even of a town who does not foresee the use of these things, but legislates chiefly for oxen, as it were.

Far the handsomest thing I saw in Boxboro was its noble oak wood. I doubt if there is a finer one in Massachusetts. Let her keep it a century longer, and men will make pilgrimages to it from all parts of the country; and yet it would be very like the rest of New England if Boxboro were ashamed of that woodland.

I have since heard, however, that she is contented to have that forest stand instead of the houses and farms that might supplant [it], because the land pays a much larger tax to the town now than it would then.

I said to myself, if the history of this town is written, the chief stress is probably laid on its parish and there is not a word about this forest in it.

It would be worth the while if in each town there were a committee appointed to see that the beauty of the town received no detriment. If we have the largest

boulder in the county, then it should not belong to an individual, nor be made into door-steps.

As in many countries precious metals belong to the crown, so here more precious natural objects of rare beauty should belong to the public.

Not only the channel but one or both banks of every river should be a public highway. The only use of a river is not to float on it.

Think of a mountain-top in the township — even to the minds of the Indians a sacred place — only accessible through private grounds! a temple, as it were, which you cannot enter except by trespassing and at the risk of letting out or letting in somebody's cattle! in fact the temple itself in this case private property and standing in a man's cow-yard, — for such is commonly the case!

New Hampshire courts have lately been deciding — as if it was for them to decide — whether the top of Mt. Washington belonged to A or to B; and, it being decided in favor of B, as I hear, he went up one winter with the proper officer and took formal possession of it. But I think that the top of Mt. Washington should not be private property; it should be left unappropriated for modesty and reverence's sake, or if only to suggest that earth has higher uses than we put her to. I know it is a mere figure of speech to talk about temples nowadays, when men recognize none, and, indeed, associate the word with heathenism.

It is true we as yet take liberties and go across lots, and steal, or "hook," a good many things, but we naturally take fewer and fewer liberties every year, as we

meet with more resistance. In old countries, as England, going across lots is out of the question. You must walk in some beaten path or other, though it may [be] a narrow one. We are tending to the same state of things here, when practically a few will have grounds of their own, but most will have none to walk over but what the few allow them.

Thus we behave like oxen in a flower-garden. The true fruit of Nature can only be plucked with a delicate hand not bribed by any earthly reward, and a fluttering heart. No hired man can help us to gather this crop.

How few ever get beyond feeding, clothing, sheltering, and warming themselves in this world, and begin to treat themselves as human beings, — as intellectual and moral beings! Most seem not to see any further, — not to see over the ridge-pole of their barns, — or to be exhausted and accomplish nothing more than a full barn, though it may be accompanied by an empty head. They venture a little, run some risks, when it is a question of a larger crop of corn or potatoes; but they are commonly timid and count their coppers, when the question is whether their children shall be educated. He who has the reputation of being the thriftiest farmer and making the best bargains is really the most thriftless and makes the worst. It is safest to invest in knowledge, for the probability is that you can carry that with you wherever you go.

But most men, it seems to me, do not care for Nature and would sell their share in all her beauty, as long as they may live, for a stated sum — many for a glass of rum. Thank God, men cannot as yet fly, and lay waste

the sky as well as the earth! We are safe on that side for the present. It is for the very reason that some do not care for those things that we need to continue to protect all from the vandalism of a few.

We cut down the few old oaks which witnessed the transfer of the township from the Indian to the white man, and commence our museum with a cartridge-box taken from a British soldier in 1775!

He pauses at the end of his four or five thousand dollars, and then only fears that he has not got enough to carry him through, — that is, merely to pay for what he will eat and wear and burn and for his lodging for the rest of his life. But, pray, what does he stay here for? Suicide would be cheaper. Indeed, it would be nobler to found some good institution with the money and then cut your throat. If such is the whole upshot of their living, I think that it would be most profitable for all such to be carried or put through by being discharged from the mouth of a cannon as fast as they attained to years of such discretion.

As boys are sometimes required to show an excuse for being absent from school, so it seems to me that men should show some excuse for being here. Move along; you may come upon the town, sir.

I noticed a week or two ago that one of my white pines, some six feet high with a thick top, was bent under a great burden of very moist snow, almost to the point of breaking, so that an ounce more of weight would surely have broken it. As I was confined to the house by sickness, and the tree had already been four or five days in that position, I despaired of its ever recovering

itself; but, greatly to my surprise, when, a few days after, the snow had melted off, I saw the tree almost perfectly upright again.

It is evident that trees will bear to be bent by this cause and at this season much more than by the hand of man. Probably the less harm is done in the first place by the weight being so gradually applied, and perhaps the tree is better able to bear it at this season of the year.

Jan. 8. Trees, etc., covered with a dense hoar frost. It is not leaf-like, but composed of large spiculæ — spear-like — on the northeast sides of the twigs, the side from which the mist was blown. All trees are bristling with these spiculæ on that side, especially firs and arbor-vitæ.

They taught us not only the use of corn and how to plant it, but also of whortleberries and how to dry them for winter, and made us baskets to put them in. We should have hesitated long to eat some kinds, if they had not set us the example, knowing by old experience that they were not only harmless but salutary. I have added a few to my number of edible berries by walking behind an Indian in Maine, who ate such as I never thought of tasting before. Of course they made a much greater account of wild fruits than we do.

It appears from the above evidence[1] that the Indians used their dried berries commonly in the form of huckleberry cake, and also of huckleberry porridge or pudding.

What we call huckleberry cake, made of Indian meal

[1] [The "evidence" was omitted from the Journal.]

and huckleberries, was evidently the principal cake of the aborigines, and was generally known and used by them all over this part of North America, as much or more than plum-cake by us. They enjoyed it all alone ages before our ancestors heard of Indian meal or huckleberries.

We have no national cake so universal and well known as this was in all parts of the country where corn and huckleberries grew.

If you had travelled here a thousand years ago, it would probably have been offered you alike on the Connecticut, the Potomac, the Niagara, the Ottawa, and the Mississippi.

Botanists have long been inclined to associate this family in some way with Mt. Ida, and, according to Tournefort arrange [*sic*] whortleberries were what the ancients meant by the vine of Mt. Ida, and the common English raspberry is called *Rubus Idæus* from the old Greek name. The truth of it seems to be that blueberries and raspberries flourish best in cool and airy situations on hills and mountains, and I can easily believe that something like them, at least, grows on Mt. Ida. But Mt. Monadnock is as good as Mt. Ida, and probably better for blueberries, though it does not [*sic*] mean "bad rock," — but the worst rocks are the best for blueberries and for poets.

Jan. 11. Horace Mann brings me the contents of a crow's stomach in alcohol. It was killed in the village within a day or two. It is quite a mass of frozen-thawed apple, — pulp and skin, — with a good many pieces of

skunk-cabbage berries one fourth inch or less in diameter, and commonly showing the pale-brown or blackish outside, interspersed, looking like bits of acorns, — never a whole or even half a berry, — and two little bones as of frogs (?) or mice (?) or *tadpoles;* also a street pebble a quarter of an inch in diameter, hard to be distinguished in appearance from the cabbage seeds.

I presume that every one of my audience knows what a huckleberry is, — has seen a huckleberry, gathered a huckleberry, and, finally, has tasted a huckleberry, — and, that being the case, I think that I need offer no apology if I make huckleberries my theme this evening.

What more encouraging sight at the end of a long ramble than the endless successive patches of green bushes, — perhaps in some rocky pasture, — fairly blackened with the profusion of fresh and glossy berries?

There are so many of these berries in their season that most do not perceive that birds and quadrupeds make any use of them, since they are not felt to rob us; yet they are more important to them than to us. We do not notice the robin when it plucks a berry, as when it visits our favorite cherry tree, and the fox pays his visits to the field when we are not there.

Jan. 14. Coldest morning yet; 20° (?).

Pliny says, "In minimis Natura praestat" (Nature excels in the least things). The *Wellingtonia gigantea*, the famous California tree, is a great thing; the seed from which it sprang, a little thing; and so are all seeds or origins of things.

Richard Porson said: "We all speak in metaphors. Those who appear not to do it, only use those which are worn out, and are overlooked as metaphors. The original fellow is therefore regarded as only witty; and the dull are consulted as the wise." He might have said that the former spoke a dead language.

John Horne Tooke is reported in "Recollections" by Samuel Rogers as having said: "Read few books well. We forget names and dates; and reproach our memory. They are of little consequence. We feel our limbs enlarge and strengthen; yet cannot tell the dinner or dish that caused the alteration. Our minds improve though we cannot name the author, and have forgotten the particulars." I think that the opposite would be the truer statement, books differ so immensely in their nutritive qualities, and good ones are so rare.

Gosse, in his "Letters from Alabama," says that he thinks he saw a large dragon-fly (*Æslona*), which was hawking over a brook, catch and devour some minnows about one inch long, and says it is known that "the larvæ of the greater water-beetles (*Dyticidæ*) devour fish."

It is the discovery of science that stupendous changes in the earth's surface, such as are referred to the Deluge, for instance, are the result of causes still in operation, which have been at work for an incalculable period. There has not been a sudden re-formation, or, as it were, new creation of the world, but a steady progress according to existing laws. The same is true in detail also. It is a vulgar prejudice that some plants are "spontaneously generated," but science knows

that they come from seeds, *i. e.* are the result of causes still in operation, however slow and unobserved. It is a common saying that "little strokes fall great oaks," and it does not imply much wisdom in him who originated it. The sound of the axe invites our attention to such a catastrophe; we can easily count each stroke as it is given, and all the neighborhood is informed by a loud crash when the deed is consummated. But such, too, is the rise of the oak; little strokes of a different kind and often repeated raise great oaks, but scarcely a traveller hears these or turns aside to converse with Nature, who is dealing them the while.

Nature is slow but sure; she works no faster than need be; she is the tortoise that wins the race by her perseverance; she knows that seeds have many other uses than to reproduce their kind. In raising oaks and pines, she works with a leisureliness and security answering to the age and strength of the trees. If every acorn of this year's crop is destroyed, never fear! she has more years to come. It is not necessary that a pine or an oak should bear fruit every year, as it is that a pea-vine should. So, botanically, the greatest changes in the landscape are produced more gradually than we expected. If Nature has a pine or an oak wood to produce, she manifests no haste about it.

Thus we should say that oak forests are produced by a kind of accident, *i. e.* by the failure of animals to reap the fruit of their labors. Yet who shall say that they have not a fair knowledge of the value of their labors — that the squirrel when it plants an acorn,

or the jay when it lets one slip from under its foot, has not a transient thought for its posterity?

Possibly here, a thousand years hence, every oak will know the human hand that planted it.

How many of the botanist's *arts* and inventions are thus but the rediscovery of a lost art, *i. e.* lost to him here or elsewhere!

Horace Mann told me some days ago that he found, near the shore in that muddy bay by the willows in the rear of Mrs. Ripley's, a great many of the *Sternothærus odoratus*, assembled, he supposed, at their breeding-time, or, rather, about to come out to lay their eggs. He waded in [and] collected — I think he said — about a hundred and fifty of them for Agassiz!

I see in the Boston *Journal* an account of robins in numbers on the savin trees in that neighborhood, feeding on their berries. This suggests that they may plant its berries as well as the crows.

Jan. 15. More snow last night, and still the first that fell remains on the ground. Rice thinks that it is two feet deep on a level now. We have had no thaw yet.

Rice tells me that he baits the "seedees" and the jays and crows to his door nowadays with corn. He thinks he has seen one of these jays stow away somewhere, without swallowing, as many as a dozen grains of corn, for, after picking it up, it will fly up into a tree near by and deposit so many successively in different crevices before it descends.

Speaking of Roman wormwood springing up abun-

dantly when a field which has been in grass for twenty years or more is plowed, Rice says that, if you carefully examine such a field before it is plowed, you will find very short and stinted specimens of wormwood and pigweed there, — and remarkably full of seed too!

Feb. 5. Horace Mann brings me a screech owl, which was caught in Hastings's barn on the meeting-house avenue. It had killed a dove there. This is a decidedly gray owl, with none of the reddish or nut brown of the specimen of December 26, though it is about the same size, and answers exactly to Wilson's mottled owl.

Rice brings me an oak stick with a woodpecker's hole in it by which it reached a pupa.

The first slight rain and thaw of this winter was February 2d.

Feb. 8. Coldest day yet; −22° at least (all we can read), at 8 A. M., and, [so far] as I can learn, not above −6° all day.

Feb. 15. A little thunder and lightning late in the afternoon. I see two flashes and hear two claps.

A kitten is so flexible that she is almost double; the hind parts are equivalent to another kitten with which the fore part plays. She does not discover that her tail belongs to her till you tread upon it.

How eloquent she can be with her tail! Its sudden swellings and vibrations! She jumps into a chair and then stands on her hind legs to look out the window; looks steadily at objects far and near, first turning her

gaze to this side then to that, for she loves to look out a window as much as any gossip. Ever and anon she bends back her ears to hear what is going on within the room, and all the while her eloquent tail is reporting the progress and success of her survey by speaking gestures which betray her interest in what she sees.

Then what a delicate hint she can give with her tail! passing perhaps underneath, as you sit at table, and letting the tip of her tail just touch your legs, as much as to say, I am here and ready for that milk or meat, though she may not be so forward as to look round at you when she emerges.

Only skin-deep lies the feral nature of the cat, unchanged still. I just had the misfortune to rock on to our cat's leg, as she was lying playfully spread out under my chair. Imagine the sound that arose, and which was excusable; but what will you say to the fierce growls and flashing eyes with which she met me for a quarter of an hour thereafter? No tiger in its jungle could have been savager.

Feb. 21. I have just read a book called "Carolina Sports by Land and Water; including Incidents of Devil-Fishing, Wild-cat, Deer and Bear Hunting, Etc. By the Hon. Wm. Elliott."

The writer is evidently a regular sportsman, and describes his sporting with great zest. He was withal the inventor and institutor of devil-fishing, which consists in harpooning a monstrous salt-water fish, and represents himself in a plate harpooning him. His motive, however, was not profit or a subsistence, but sport.

However, I should have found nothing peculiar in the book, if it did not contain, near the end, so good an example of human inconsistency. I quote some sentences in the order in which they occur, only omitting the intermediate pages. After having described at length his own sporting exploits, using such words as these, for instance. Being in pursuit of a wildcat, he says (page 163):—

"It was at this moment that Dash, espying something in motion in the leafy top of a bay-tree, cracked off his Joe Manton with such good effect, that presently we heard a heavy body come tumbling through the limbs until it splashed into the water. Then came a stunning burst from the hounds — a clash from the whole orchestra in full chorus! — a growl from the assailed, with an occasional squeak on the part of the assailants, which showed that the game was not all on one side. We were compelled, all the while, to be delighted ear-witnesses only of the strife, which resulted in the victory of the hounds." This proved to be a raccoon, though they thought it the wildcat.

Again (page 168), being in pursuit of another cat, which had baffled them a long time with great cunning, he says: "The cat, with huge leaps, clambered up a tree; and now he had reached the very pinnacle, and as he gathered himself up to take a flying leap for a neighboring tree, I caught up my gun, and let slip at him in mid-flight. The arrowy posture in which he made his pitch, was suddenly changed, as the shot struck him to the heart; and doubling himself up, after one or two wild gyrations, into a heap, he fell dead, from a height of full fifty feet, into the very jaws of the dogs!"

Again (page 178), being [in] pursuit of a deer, which he had wounded, and his gun being discharged, he tried to run him down with his horse, but, as he tells us, "the noble animal refused to trample on his fellow quadruped," so he made up for it by kicking the deer in the side of the head with his spurred boot. The deer enters a thicket and he is compelled to pursue the panting animal on foot. "A large fallen oak lies across his path; he gathers himself up for the leap, and falls exhausted directly across it. Before he could recover his legs, and while he lay thus poised on the tree, I fling myself at full length upon the body of the struggling deer — my left hand clasps his neck, while my right detaches the knife; whose fatal blade, in another moment, is buried in his throat. There he lay in his blood, and I remained sole occupant of the field." Opposite is a plate which represents him in the act of stabbing the deer.

Page 267. — He tells us that his uncle once had a young wildcat, — a mere kitten, — but that, to prevent its worrying the poultry, "a cord was fastened round his neck, and a clog attached to the end." Still he would endeavor to catch the fowls.

"My uncle one day invited several of his friends, to witness this development of natural propensity in his savage pet. The kitten, with his clog attached, was let out of the box; and it was curious to observe with what stealthy pace he approached the spot where the poultry were feeding. They scarcely seemed to notice the diminutive thing that was creeping toward them; when, crouching low, and measuring exactly the distance which

separated them, he sprang upon the back of the old rooster, and hung on by claw and teeth to the feathers, while the frightened bird dragged him, clog and all, over the yard. After several revolutions had been made, the cat let go his hold on the back of the fowl, and, with the quickness of lightning, *caught the head* in his mouth, clinched his teeth, shut his eyes, stiffened his legs, and hung on with the most desperate resolution, while the fowl, rolling over in agony, buffeted him with his wings. All in vain! In a few seconds more he was dead, and we looked with abhorrence on the savage animal, that had just taken his first degree in blood. In this case, there could have been no teaching — no imitation. It was the undoubted instinct of a cruel nature! We wondered that this young beast of prey should have known, from this instinct, *the vital part of its victim!* — and we wondered still more, that in the providence of God, he had seen fit to create an animal with an instinct so murderous. Philosophy is ready with her explanation, and our abhorrence may be misplaced, since from his very organization, he is compelled to destroy life *in order to live!* Yet, knowing this, our abhorrence still continues; whence we may draw the consolatory conclusion — that the instincts of a man naturally differ from those of a wild-cat."

A few pages further (page 282) in a chapter called "Random Thoughts on Hunting," which is altogether a eulogy on that pursuit, he praises it because it develops or cultivates among other qualities "the *observation*, that familiarizes itself with the nature and habits of the quarry — the *sagacity* that anticipates its projects of

escape — and the *promptitude* that defeats them! — the rapid glance, the steady aim, the quick perception, the ready execution; these are among the faculties and qualities continually called into pleasing exercise."

Physician, heal thyself!

This plucking and stripping a pine cone is a business which he and his family understand perfectly. That is their *forte*. I doubt if you could suggest any improvement. After ages of experiment their instinct has settled on the same method that our reason would finally, if we had to open a pine cone with our teeth; and they were thus accomplished before our race knew that a pine cone contained any seed.

He does not prick his fingers, nor pitch his whiskers, nor gnaw the solid core any more than is necessary. Having sheared off the twigs and needles that may be in his way, — for like a skillful woodchopper he first secures room and verge enough, — he neatly cuts off the stout stem of the cone with a few strokes of his chisels, and it is his. To be sure, he may let it fall to the ground and look down at it for a moment curiously, as if it were not his; but he is taking note where it lies and adding it to a heap of a hundred more like it in his mind, and it now is only so much the more his for his seeming carelessness. And, when the hour comes to open it, observe how he proceeds. He holds it in his hands, — a solid embossed cone, so hard it almost rings at the touch of his teeth. He pauses for a moment perhaps, — but not because he does not know how to begin, — he only listens to hear what is in the wind, not being in a hurry.

He knows better than try to cut off the tip and work his way downward against a *chevaux-de-frise* of advanced scales and prickles, or to gnaw into the side for three quarters of an inch in the face of many armed shields. But he does not have to think of what he knows, having heard the latest æolian rumor. If there ever was an age of the world when the squirrels opened their cones wrong end foremost, it was not the golden age at any rate. He whirls the cone bottom upward in a twinkling, where the scales are smallest and the prickles slight or none and the short stem is cut so close as not to be in his way, and then he proceeds to cut through the thin and tender bases of the scales, and each stroke tells, laying bare at once a couple of seeds. And then he strips it as easily as if its scales were chaff, and so rapidly, twirling it as he advances, that you cannot tell how he does it till you drive him off and inspect his unfinished work.

Feb. 27. 2 P. M. — It is very pleasant and warm, and the ground half bare. As I am walking down the Boston road under the hill this side Clark's, it occurs to me that I have just heard the twitter of a bluebird. (C. heard one the 26th.) I stop and listen to hear it again, but cannot tell whether it comes from the buttonwoods high over my head or from the lower trees on the hilltop. It is not the complete bluebird warble, but the twitter only. And now it seems to come from Pratt's house, where the window is open, and I am not sure but it is a caged bird. I walk that way, and now think that I distinguish the minstrel in a black speck in the top of a great elm on the Common. Messer is shingling

Clark's barn; so, to make sure, I cross over and ask him if he has heard a bluebird to-day, and he says he has several times. When I get to the elm near Minott's I hear one warble distinctly. Miss Minott and Miss Potter have both died within a fortnight past, and the cottage on the hillside seems strangely deserted; but the first bluebird comes to warble there as usual.

Mother hears a robin to-day.

Buttonwood sap flows fast from wounds made last fall.

Feb. 28. P. M. — Down Boston road under the hill.

Air full of bluebirds as yesterday. The sidewalk is bare and almost dry the whole distance under the hill.

Turn in at the gate this side of Moore's and sit on the yellow stones rolled down in the bay of a digging, and examine the radical leaves, etc., etc.

Where the edges of grassy banks have caved I see the fine fibrous roots of the grass which have been washed bare during the winter extending straight downward two feet (and how much further within the earth I know not), — a pretty dense grayish mass.

The buttonwood seed has apparently scarcely begun to fall yet,[1] — only two balls under one tree, but they loose and broken.[2]

March 3. *Sunday.* Hear that there was a flock of

[1] Yes, many had been blown bare, for the balls do not fall often.

[2] Almost entirely fallen March 7th, leaving the dangling stems and bare receptacles.

geese in the river last night. See and hear song sparrows to-day; probably here for several days.

It is an exceedingly warm and pleasant day. The snow is suddenly all gone except heels, and — what is more remarkable — the frost is generally out of the ground, *e. g.* in our garden, for the reason that it has not been in it. The snow came December 4th, before the ground was frozen to any depth, has been unusually deep, and the ground has not been again exposed till now. Hence, though we have had a little very cold weather and a good deal of steady cold, the ground generally has not been frozen.

March 8. I just heard peculiar faint sounds made by the air escaping from a stick which I had just put into my stove. It sounded to my ear exactly like the peeping of the hylodes in a distant pool, a cool and breezy spring evening, — as if it were designed to remind me of that season.

Saw the *F. hyemalis* March 4th.

To continue subject of March 3d, —

It is remarkable that, though in ordinary winters, when the ground is alternately bare and covered with snow several times, or is not covered till after it is frozen, it may be frozen a foot or more in depth generally, yet, if it is kept covered with snow, though only a thin coating, from first to last, it will not be frozen at all.

For example, the ground was half bare on the 27th, the walk under the Boston road hills pretty fair on the

28th, and the 3d, after rain, the earth was bare, the ways were about settled, the melted snow and rain having been soaked up at once by the thirsty and open ground. There was probably no frost on level ground except where the earth had of late been partly exposed in the middle of the road. The recent rain and melting accordingly raised the river less than it otherwise would. There has been no breaking up of the frost on roads, — no bad travelling as usual, — but as soon as the snow is gone, the ways are settled.

In short, Nature uses all sorts of conveyances, from the rudest drag to a balloon, but she will get her seeds along in due season.

Is it not possible that Loudon is right as it respects the primitive distribution of the birch? Are not the dense patches always such as have sprung up in open land (commonly old fields cleared by man), as is the case with the pitch pine? It disappears at length from a dense oak or pine wood. Perhaps originally it formed dense woods only where a space had been cleared for it by a burning, as now at the eastward. Perhaps only the oaks and white pines could (originally) possess the soil here against all comers, maple succeeding because it does not mind a wet foot.

Suppose one were to take such a boxful of birch seed as I have described into the meeting-house belfry in the fall, and let some of it drop in every wind, but always more in proportion as the wind was stronger, and yet so husband it that there should be some left for every gale even till far into spring; so that this seed might be

blown toward every point of the compass and to various distances in each direction. Would not this represent a single birch tree on a hill? Of which trees (though only a part on hills) we have perhaps a million. And yet some feel compelled to suppose that the birch trees which spring up after a burning are spontaneously generated — for want of seed! It is true [it] does not come up in great quantities at the distance I have spoken of, but, if only one comes up there this year, you may have a million seeds matured there a few years hence.

It is true that the greater part of these seeds fall near the trees which bore them, and comparatively few germinate; yet, when the surface is in a favorable condition, they may spring up in very unexpected places.

A lady tells me that she met Deacon S. of Lincoln with a load of hay, and she, noticing that as he drove under the apple trees by the side of the road a considerable part of the hay was raked off by their boughs, informed him of it. But he answered, "It is not mine yet. I am going to the scales with it and intend to come back this way."

March 11. C. says that Walden is almost entirely open to-day, so that the lines on my map would not strike any ice, but that there is ice in the deep cove. It will be open then the 12th or 13th. This is earlier than I ever knew it to open. Fair Haven was solid ice two or three days ago, and probably is still, and Goose Pond is to-day all ice. Why, then, should Walden have

broken up thus early? for it froze over early and the winter was steadily cold up to February at least. I think it must have been because the ice was uncommonly covered with snow, just as the earth was, and so, as there was little or no frost in the earth, the ice also was thin, and it did not increase upward with snow ice as much as usual because there was no thaw or rain at all till February 2d, and then very little. According to all accounts there has been no skating on Walden the past winter on account of the snow. It was unusually covered with snow. This shows how many things are to be taken into account in judging of such a pond. I have not been able to go to the pond the past winter. I infer that, if it has broken up thus early, it must be because the ice was thin, and that it was thin not for want of cold generally, but because of the abundance of snow which lay on it.

The water is now high on the meadows and there is no ice there, owing to the recent heavy rains. Yet C. thinks it has been higher a few weeks since.

C. observes where mice (?) have gnawed the pitch pines the past winter. Is not this a phenomenon of a winter of deep snow only? as that when I lived at Walden, — a hard winter for them. I do not commonly observe it on a large scale.

My Aunt Sophia, now in her eightieth year, says that when she was a little girl my grandmother, who lived in Keene, N. H., eighty miles from Boston, went to Nova Scotia, and, in spite of all she could do, her dog Bob, a little black dog with his tail cut off, followed her to Boston, where she went aboard a vessel. Di-

rectly after, however, Bob returned to Keene. One day, Bob, lying as usual under his mistress's bed in Keene, the window being open, heard a dog bark in the street, and instantly, forgetting that he was in the second story, he sprang up and jumped out the chamber window. He came down squarely on all fours, but it surprised or shocked him so that he did not run an inch, — which greatly amused the children, — my mother and aunts.

The seed of the willow is exceedingly minute, — as I measure, from one twentieth to one twelfth of an inch in length by one fourth as much in width, — and is surrounded at base by a tuft of cotton-like hairs about one fourth of an inch long rising around and above it, forming a kind of parachute. These render it the most buoyant of the seeds of any of our trees, and it is borne the furthest horizontally with the least wind. It falls very slowly even in the still air of a chamber, and rapidly ascends over a stove. It floats the most like a mote of any, — in a meandering manner, — and, being enveloped in this tuft of cotton, the seed is hard to detect.

Each of the numerous little pods, more or less ovate and beaked, which form the fertile catkin is closely packed with down and seeds. At maturity these pods open their beaks, which curve back, and gradually discharge their burden like the milkweed. It would take a delicate gin indeed to separate these seeds from their cotton.

If you lay bare any spot in our woods, however

sandy, — as by a railroad cut, — no shrub or tree is surer to plant itself there sooner or later than a willow (commonly *S. humilis* or *tristis*) or poplar.

We have many kinds, but each is confined to its own habitat. I am not aware that the *S. nigra* has ever strayed from the river's brink. Though many of the *S. alba* have been set along our causeways, very few have sprung up and maintained their ground elsewhere.

The principal habitat of most of our species, such as love the water, is the river's bank and the adjacent river meadows, and when certain kinds spring up in an inland meadow where they were not known before, I feel pretty certain that they come from the river meadows. I have but little doubt that the seed of four of those that grow along the railroad causeway was blown from the river meadows, *viz. S. pedicellaris, lucida, Torreyana*, and *petiolaris*.

The barren and fertile flowers are usually on separate plants. I observe [?] that the greater part of the white willows set out on our causeways are sterile ones. You can easily distinguish the fertile ones at a distance when the pods are bursting. And it is said that no sterile weeping willows have been introduced into this country, so that it cannot be raised from the seed. Of two of the indigenous willows common along the brink of our river I have detected but one sex.

The seeds of the willow thus annually fill the air with their lint, being wafted to all parts of the country, and, though apparently not more than one in many millions gets to be a shrub, yet so lavish and persevering is Nature that her purpose is completely answered.

March 16. A severe, blocking-up snow-storm.

March 18. Tree sparrows have warbled faintly for a week.

When I pass by a twig of willow, though of the slenderest kind, rising above the sedge in some dry hollow early in December, or in midwinter above the snow, my spirits rise as if it were an oasis in the desert. The very name "sallow" (*salix*, from the Celtic *sal-lis*, near water) suggests that there is some natural sap or blood flowing there. It is a divining wand that has not failed, but stands with its root in the fountain.

The fertile willow catkins are those green caterpillar-like ones, commonly an inch or more in length, which develop themselves rapidly after the sterile yellow ones which we had so admired are fallen or effete. Arranged around the bare twigs, they often form green wands eight to eighteen inches long. A single catkin consists of from twenty-five to a hundred little pods, more or less ovate and beaked, each of which is closely packed with cotton, in which are numerous seeds so small that they are scarcely discernible by ordinary eyes.

I do not know what they mean who call this the emblem of despairing love! "The willow, worn by forlorn paramour!" It is rather the emblem of love and sympathy with all nature. It may droop, — it is so lithe, supple, and pliant, — but it never weeps. The willow of Babylon blooms not the less hopefully with us, though its other half is not in the New World at all, and never has been. It droops, not to represent David's tears, but rather to snatch the crown from Alexander's

head. (Nor were poplars ever the weeping sisters of Phaëton, for nothing rejoices them more than the sight of the Sun's chariot, and little reck they who drives it.)

Ah, willow! willow! Would that I always possessed thy good spirits.

No wonder its wood was anciently in demand for bucklers, for, take the whole tree, it is not only soft and pliant but tough and resilient (as Pliny says?), not splitting at the first blow, but closing its wounds at once and refusing to transmit its hurts.

I know of one foreign species which introduced itself into Concord as [a] withe used to tie up a bundle of trees. A gardener stuck it in the ground, and it lived, and has its descendants.

Herodotus says that the Scythians divined by the help of willow rods. I do not know any better twigs for this purpose.

How various are the habits of men! Mother says that her father-in-law, Captain Minott, not only used to roast and eat a long row of little wild apples, reaching in a semicircle from jamb to jamb under the andirons on the reddened hearth (I used to buy many a pound of Spanish brown at the stores for mother to redden the jambs and hearth with), but he had a quart of new milk regularly placed at the head of his bed, which he drank at many draughts in the course of the night. It was so the night he died, and my grandmother discovered that he was dying, by his not turning over to reach his milk. I asked what he died of, and mother

answered apoplexy! at which I did not wonder. Still this habit may not have caused it.

I have a cousin, also, who regularly eats his bowl of bread and milk just before going to bed, however late. He is a very stirring man.

You can't read any genuine history — as that of Herodotus or the Venerable Bede — without perceiving that our interest depends not on the subject but on the man, — on the manner in which he treats the subject and the importance he gives it. A feeble writer and without genius must have what he thinks a great theme, which we are already interested in through the accounts of others, but a genius — a Shakespeare, for instance — would make the history of his parish more interesting than another's history of the world.

Wherever men have lived there is a story to be told, and it depends chiefly on the story-teller or historian whether that is interesting or not. You are simply a witness on the stand to tell what you know about your neighbors and neighborhood. Your account of foreign parts which you have never seen should by good rights be less interesting.

March 22. A driving northeast snow-storm yesterday and last night, and to-day the drifts are high over the fences and the trains stopped. The Boston train due at 8.30 A. M. did not reach here till five this afternoon. One side of all the houses this morning was one color, — *i. e.* white with the moist snow plastered over them, — so that you could not tell whether they had blinds or not.

When we consider how soon some plants which

spread rapidly, by seeds or roots, would cover an area equal to the surface of the globe, how soon some species of trees, as the white willow, for instance, would equal in mass the earth itself, if all their seeds became full-grown trees, how soon some fishes would fill the ocean if all their ova became full-grown fishes, we are tempted to say that every organism, whether animal or vegetable, is contending for the possession of the planet, and, if any one were sufficiently favored, supposing it still possible to grow, as at first, it would at length convert the entire mass of the globe into its own substance.[1] Nature opposes to this many obstacles, as climate, myriads of brute and also human foes, and of competitors which may preoccupy the ground. Each suggests an immense and wonderful greediness and tenacity of life (I speak of the species, not individual), as if bent on taking entire possession of the globe wherever the climate and soil will permit. And each prevails as much as it does, because of the ample preparations it has made for the contest, — it has secured a myriad chances, — because it never depends on spontaneous generation to save it.

A writer in the *Tribune* speaks of cherries as one of the trees which come up numerously when the forest is cut or burned, though not known there before. This may be true because there was no one knowing in these matters in that neighborhood. But I assert that it *was* there before, nevertheless; just as the little oaks are in the pine woods, but never grow up to trees till the pines are cleared off. Scarcely any plant is more sure to come

[1] *Vide* Pliny on man's mission to keep down weeds.

up in a sprout-land here than the wild black cherry, and yet, though only a few inches high at the end of the first year after the cutting, it is commonly several years old, having maintained a feeble growth there so long. There is where the birds have dropped the stones, and it is doubtful if those dropped in pastures and open land are as likely to germinate. Yet the former rarely if ever get to be trees.

Rice told me a month ago that when the earth became bare the jays, though they still came round the house, no longer picked up the corn he had scattered for them. I suggested that it was because they were now able to vary their diet.

Of course natural successions are taking place where a swamp is gradually filling up with sphagnum and bushes and at length trees, *i. e.*, where the soil is changing.

Botanists talk about the possibility and impossibility of plants being naturalized here or there. But what plants have not been naturalized? Of course only those which grow to-day exactly where the original plant of the species was created. It is true we do not know whether one or many plants of a given kind were originally created, but I think it is the most reasonable and simple to suppose that only one was, — to suppose as little departure as possible from the existing order of things. They commenced to spread themselves at once and by whatever means they possessed as far as they could, and they are still doing so. Many were common to Europe and America at the period of the discovery of the latter country, and I have no

doubt that they had naturalized themselves in one or the other country. This is more philosophical than to suppose that they were independently created in each.

I suppose that most have seen — at any rate I can show them — English cherry trees, so called, coming up not uncommonly in our woods and under favorable circumstances becoming full-grown trees. Now I think that they will not pretend that they came up there in the same manner before this country was discovered by the whites. But, if cherry trees come up by spontaneous generation, why should they not have sprung up there in that way a thousand years ago as well as now?

If the pine seed is spontaneously generated, why is it not so produced in the Old World as well as in America? I have no doubt that it can be raised from the seed in corresponding situations there, and that it will seem to spring up just as mysteriously there as it does here. Yet, if it will grow so *after* the seed has been carried thither, why should it not before, if the seed is unnecessary to its production?

The above-mentioned cherry trees come up, though they are comparatively few, just like the red cherry, and, no doubt, the same persons would consider them as spontaneously generated. But why did Nature defer raising that species here by spontaneous generation, until we had raised it from the stones?

It is evident that Nature's designs would not be accomplished if seeds, having been matured, were simply dropped and so planted directly beneath their parent stems, as many will always be in any case. The

next consideration with her, then, after determining to create a seed, must have been how to get it transported, though to never so little distance, — the width of the plant, or less, will often be sufficient, — even as the eagle drives her young at last from the neighborhood of her eyrie, — for their own good, since there is not food enough there for all, — without depending on botanists, patent offices, and seedsmen. It is not enough to have matured a seed which will reproduce its kind under favorable conditions, but she must also secure it those favorable conditions. Nature has left nothing to the mercy of man. She has taken care that a sufficient number of every kind of seeds, from a cocoanut to those which are invisible, shall be transported and planted in a suitable place.

A seed, which is a plant or tree in embryo, which has the principle of growth, of life, in it, is more important in my eyes, and in the economy of Nature, than the diamond of Kohinoor.

When we hear of an excellent fruit or a beautiful flower, the first question is if any man has got the seeds in his pocket; but men's pockets are only one of the means of conveyances which Nature has provided.

March 30. High water, — up to sixth slat (or gap) above Smith's second post. It is said to have been some nine inches higher about a month ago, when the snow first went off.

R. W. E. lately found a Norway pine cut down in Stow's wood by Saw Mill Brook.

According to Channing's account, Walden must have

skimmed nearly, if not entirely, over again once since the 11th or 12th, or after it had been some time completely clear. It seems, then, that in some years it may thaw and freeze again.

April 2. A drifting snow-storm, perhaps a foot deep on an average.

Pratt thought the cowslip was out the 4th.

April 6. Am surprised to find the river fallen some nine inches notwithstanding the melted snow. But I read in Blodget that the equivalent in water is about one tenth. Say one ninth in this case, and you have one and one third inches, and this falling on an unfrozen surface, the river at the same time falling from a height, shows why it was no more retarded (far from being absolutely raised).

There is now scarcely a button-ball to be seen on Moore's tree, where there were many a month ago or more. The balls have not fallen entire, but been decomposed and the seed dispersed gradually, leaving long, stringy stems and their cores dangling still. It is the storms of February and March that disperse them.

The (are they cinnamon?) sparrows are the finest singers I have heard yet, especially in Monroe's garden, where I see no tree sparrows. Similar but more prolonged and remarkable and loud.

April 7. *Sunday.* Round the two-mile square.

I see where the common great tufted sedge (*Carex stricta*) has started under the water on the meadows, now

fast falling. The white maple at the bridge not quite out. See a water-bug and a frog. Hylas are heard to-day.

I see where the meadow flood has gone down in a bay on the southeast side of the meadow, whither the foam had been driven. A delicate scum now left an inch high on the grass. It is a dirty white, yet silvery, and as thin as the thinnest foil, often unbroken and apparently air-tight for two or three inches across and almost as light as gossamer. What is the material? It is a kind of paper, but far more delicate than man makes.

Saw in a roadside gutter at Simon Brown's barn a bird like the solitary tattler, with a long bill, which at length flew off to the river. But it may have been a small species of snipe.

April 8. Examine the pitch pines, which have been much gnawed or barked this snowy winter. The marks on them show the fine teeth of the mouse, and they are also nicked as with a sharp knife. At the base of each, also, is a quantity of the mice droppings. It is probably the white-footed mouse.

April 9. Small reddish butterflies common; also, on snow banks, many of the small fuzzy gnats and cicindelæ and some large black dor-bug-like beetles. The two latter are easily detected from a distance on the snow.

The phœbe note of chickadee.

White frosts these mornings.

Worm-piles in grass at Clamshell.

April 10. Purple finch.

April 11. Going to law. I hear that Judge Minott of Haverhill once told a client, by way of warning, that two millers who owned mills on the same stream went to law about a dam, and at the end of the lawsuit one lawyer owned one mill and the other the other.

April 16. Horace Mann says that he killed a bullfrog in Walden Pond which had swallowed and contained a common striped snake which measured one foot and eight inches in length.

Says he saw two blue herons (?) go over a fortnight ago.

He brought me some days ago the contents of a stake-driver's stomach or crop. It is apparently a perch (?), some seven inches long originally, with three or four pebble-shaped, compact masses of the fur of some very small quadruped, as a meadow mouse, some one fourth inch thick by three fourths in diameter, also several wing-cases of black beetles such as I see on the meadow flood.

He brought me also some time ago the contents of a black duck's crop (killed at Goose Pond), — green gobbets of fine grass (?) or weeds (?), apparently from the bottom of the pond (just then begun to spring up), but I have not yet examined these out of the bottle.

April 20. H. Mann brings me the hermit thrush.

April 21. Pratt collects very handsome tufts of *Hepatica triloba* in flower at Melrose, and the bloodroot out also there.

April 22. It was high water again about a week ago, — Mann thinks with[in] three or four inches as high as at end of winter.

He obtained to-day the buffle-headed duck, diving in the river near the Nine-Acre Corner bridge. I identify it at sight as my bird seen on Walden.

I hear a chip-bird.

April 23. Think I hear bay-wings. Toads ring.

April 25. Horace Mann brings me apparently a pigeon hawk. The two middle tail-feathers are not tipped with white and are pointed almost as a woodpecker's.

May 1. Water in our neighbors' cellars quite generally. May it not be partly owing to the fact that the ground was not frozen the last winter to any depth, and so the melted snow as well as rain has been chiefly absorbed by it? [1]

May 4. H. Mann brings me two small pewees, but not yellowish about eye and bill, and bill is all black. Also a white-throat sparrow, Wilson's thrush, and myrtle-bird.

May 5. Hear the seringo note.[2]

[1] Probably it was.

[2] [Pasted in at this point is a pencilled slip reading, "Strabo read as far as 306th p.," with memoranda apparently referring to the book.]

May 11. A boy brings me a salamander from S. Mason's. Sent it to Mann. What kind?

SET OUT FOR MINNESOTA *via* Worcester.[1]

May 12. *Sunday.* In Worcester.

Rode to east side of Quinsigamond Pond with Blake and Brown and a dry humorist, a gentleman who has been a sportsman and was well acquainted with dogs. He said that he once went by water to St. John, N. B., on a sporting excursion, taking his dog with him; but the latter had such a remarkable sense of decency that, seeing no suitable place aboard the vessel, he did not yield to the pressing demands of nature and, as the voyage lasted several days, swelled up very much. At length his master, by taking him aside and setting him the example, persuaded him to make water only. When at length he reached St. John, and was leading his dog by a rope up a long hill there which led to the town, he was compelled to stop repeatedly for his dog to empty himself and was the observed of all observers. This suggested that a dog could be educated to be far more cleanly in some respects than men are.

He also states that a fox does not regard all dogs, — or, rather, avoid them, — but only hunting dogs. He one day heard the voices of hounds in pursuit of a fox and soon after saw the fox come trotting along a path in which he himself was walking. Secreting himself behind a wall he watched the motions of the fox, wishing to get a shot at him, but at that moment his dog, a spaniel, leapt out into the path and advanced to meet

[1] [See *Familiar Letters*, pp. 380, 383–393; Riv. 439, 443–455.]

the fox, which stood still without fear to receive him. They smelled of one another like dogs, and the sportsman was prevented from shooting the fox for fear of hitting his dog. So he suddenly showed himself in the path, hoping thus to separate them and get a shot. The fox immediately cantered backward in the path, but his dog ran after him so directly in a line with the fox that he was afraid to fire for fear of killing the dog.

May 13. Worcester to Albany.

The latter part of the day rainy. The hills come near the railroad between Westfield and Chester Village. Thereafter in Massachusetts they may be as high or higher, but are somewhat further off.

The leafing is decidedly more advanced in western Massachusetts than in eastern. Apple trees are greenish. Red elder-berry is apparently just beginning to bloom.

Put up at the Delavan House. Not so good as costly.

May 14. Albany to Suspension Bridge.

Albany to Schenectady a level pitch pine plain with also white pine, white birch, and shad-bush in bloom, with *hills* at last. No houses: only two or three huts on the edge of woods without any road. These were the last pitch pines that I saw on my westward journey.

It is amusing to observe how a kitten regards the attic, kitchen, or shed where it was bred as its castle to resort to in time of danger. It loves best to sleep on

some elevated place, as a shelf or chair, and for many months does not venture far from the back door where it first saw the light. Two rods is a great range for it, but so far it is tempted, when the dew is off, by the motions of grasshoppers and crickets and other such small game, sufficiently novel and surprising to it. They frequently have a wheezing cough, which some refer to grasshoppers' wings across their windpipes. The kitten has been eating grasshoppers.

If some member of the household with whom they are familiar — their mistress or master — goes forth into the garden, they are then encouraged to take a wider range, and for a short season explore the more distant bean and cabbage rows, or, if several of the family go forth at once, — as it were a reconnaissance in force, — the kitten does a transient scout duty outside, but yet on the slightest alarm they are seen bounding back with great leaps over the grass toward the castle, where they stand panting on the door-step, with their small lower jaws fallen, until they fill up with courage again. A cat looks down with complacency on the strange dog from the corn-barn window.

The kitten when it is two or three months old is full of play. Ever and anon she takes up her plaything in her mouth and carries it to another place, — a distant corner of the room or some other nook, as under a rocker, — or perchance drops it at your feet, seeming to delight in the mere carriage of it, as if it were her prey — tiger-like. In proportion to her animal spirits are her quick motions and sudden whirlings about on the carpet or in the air. She may make a great show of

scratching and biting, but let her have your hand and she will presently lick it instead.

They are so naturally stealthy, skulking and creeping about, affecting holes and darkness, that they will enter a shed rather by some hole under the door-sill than go over the sill through the open door.

Though able to bear cold, few creatures love warmth more or sooner find out where the fire is. The cat, whether she comes home wet or dry, directly squeezes herself under the cooking-stove, and stews her brain there, if permitted. If the cat is in the kitchen, she is most likely to be found under the stove.

This (October 5) is a rainy or drizzling day at last, and the robins and sparrows are more numerous in the yard and about the house than ever. They swarm on the ground where stood the heap of weeds which was burned yesterday, picking up the seeds which rattled from it. Why should these birds be so much more numerous about the house such a day as this? I think of no other reason than because it is darker and fewer people are moving about to frighten them. Our little mountain-ash is all alive with them. A dozen robins on it at once busily reaching after and plucking the berries, actually make the whole tree shake. There are also some little birds (I think purple finches) with them. A robin will swallow half a dozen berries, at least, in rapid succession before it goes off, and apparently it soon comes back for more.

The reason why naturalists make so little account

of color is because it is so insignificant to them; they do not understand it. But the lover of flowers or animals makes very much of color. To a fancier of cats it is not indifferent whether one be black or gray, for the color expresses *character*.

Prescott is not inclined to go to the wars again (October, '61), and so Concord has no company to represent her at present. Cyrus Warren thinks that Derby, the first lieutenant (and butcher that was), would do for captain as well as Prescott, and adds, as his principal qualification, "There is n't one in the company can cut up a crittur like him."

Henry Mitchell of the Coast Survey (page 317)[1] has invented a new kind of pile, to be made of some heavy and strong wood and "so cut that the lower portion of it, for a space of six or eight feet, presents the appearance of a number of inverted frustums of cones, placed one above another." When this is swayed to and fro by the waves, instead of being loosened and washed out, it sinks deeper and deeper. This, as Professor Bache (in Coast Survey Report for 1859, page 30) says, "is a device borrowed from nature, he [Mitchell] having observed that certain seed vessels, by virtue of their forms, bury themselves in the earth when agitated by wind or water." No seeds are named, but they must be similar to the seed of the porcupine grass of the West.

[1] [*Report of the Superintendent of the Coast Survey, showing the Progress of the Survey during the Year* 1859, Washington, 1860.]

Young Macey, who has been camping on Monadnock this summer, tells me that he found one of my spruce huts made last year in August, and that as many as eighteen, reshingling it, had camped in it while he was there.

See a large hornets' nest on a maple (September 29), the *half immersed* leaves turned scarlet.

Four little kittens just born; lay like stuffed skins of kittens in a heap, with pink feet; so flimsy and helpless they lie, yet blind, without any stiffness or ability to stand.

Edward Lord Herbert says in his autobiography, "It is well known to those that wait in my chamber, that the shirts, waistcoats, and other garments I wear next my body, are sweet, beyond what either easily can be believed, or hath been observed in any else, which sweetness also was found to be in my breath above others, before I used to take tobacco."

The kitten can already spit at a fortnight old, and it can mew from the first, though it often makes the motion of mewing without uttering any sound.

The cat about to bring forth seeks out some dark and secret place for the purpose, not frequented by other cats.

The kittens' ears are at first nearly concealed in the fur, and at a fortnight old they are mere broad-based triangles with a side foremost. But the old cat is ears for them at present, and comes running hastily to their

aid when she hears them mew and licks them into contentment again. Even at three weeks the kitten cannot fairly walk, but only creeps feebly with outspread legs. But thenceforth its ears visibly though gradually lift and sharpen themselves.

At three weeks old the kitten begins to walk in a staggering and creeping manner and even to play a little with its mother, and, if you put your ear close, you may hear it purr. It is remarkable that it will not wander far from the dark corner where the cat has left it, but will instinctively find its way back to it, probably by the sense of touch, and will rest nowhere else. Also it is careful not to venture too near the edge of a precipice, and its claws are ever extended to save itself in such places. It washes itself somewhat, and assumes many of the attitudes of an old cat at this age. By the disproportionate size of its feet and head and legs now it reminds you [of] a lion.

I saw it scratch its ear to-day, probably for the first time; yet it lifted one of its hind legs and scratched its ear as effectually as an old cat does. So this is instinctive, and you may say that, when a kitten's ear first itches, Providence comes to the rescue and lifts its hind leg for it. You would say that this little creature was as perfectly protected by its instinct in its infancy as an old man can be by his wisdom. I observed when she first noticed the figures on the carpet, and also put up her paws to touch or play with surfaces a foot off. By the same instinct that they find the mother's teat before they can see they scratch their ears and guard against falling.

After a violent easterly storm in the night, which clears up at noon (November 3, 1861), I notice that the surface of the railroad causeway, composed of gravel, is singularly marked, as if stratified like some slate rocks, on their edges, so that I can tell within a small fraction of a degree from what quarter the rain came. These lines, as it were of stratification, are perfectly parallel, and straight as a ruler, diagonally across the flat surface of the causeway for its whole length. Behind each little pebble, as a protecting boulder, an eighth or a tenth of an inch in diameter, extends northwest a ridge of sand an inch or more, which it has protected from being washed away, while the heavy drops driven almost horizontally have washed out a furrow on each side, and on all sides are these ridges, half an inch apart and perfectly parallel.

All this is perfectly distinct to an observant eye, and yet could easily pass unnoticed by most. Thus each wind is self-registering.