

1 %1%

2 38¹

3 July 23--1860

4 The button bush is but just fairly beginning //

5 here & there.--

6 Still more rain this am,² but chiefly clouds. //

7 We have had several thunder showers

8 this month--in the forenoon--it clearing

9 off bright by the Pm

10 I saw the other day where the lightning

11 on the 12 or 13th ult

12 ^had struck the telegraph posts at Walden

13 Pond. It had shattered 5 posts in succession

14 they being a dozen rods apart--spoiling them

15 entirely--though all of them stood but

16 one--yet they were a mere wrack of splinters

17 through which you could look-- It had

18 omitted a great many more posts ~~in~~

19 ~~other places--&~~ & struck half a dozen more

20 at a great distance from these on each

21 the furthest I noticed was near by the 2d mile post--the nearest

22 side--^ And at the same time there

23 midway the causeway an explosion

24 was a smart shock ^ at the operating

25 2 miles

26 office at the Depot ~~a mile & a half~~

27 from the {furthest} point

28 off. I should think, speaking from

29 memory--that the posts struck were

30 the oldest & dampest or most rotten.

31 At one or 2 posts it had plainly entered

32 the ground & ploughed toward the RR--

33 track--slightly injuring it. It struck

34 a p. pine standing within 4 or 5

35 feet of the wire leaving a white

36 seam down one side of it--

37 also 2 large oaks a little further off-- This was where the

¹number appears on the xerox, but not "recordak" manuscript copy

²poss blotch over comma

1 telegraph ran parallel to--& a few feet only {from} a wood.
2 It also struck a small oak on the opposite
3 side of the track. The lightning struck for 2 miles!!
4 at least

5 2 Pm by boat to Conantum
6 It has cleared up fairly--
7 The late rose is now in p. along the
8 //
9 river--a pale rose color but³ very delicate--
10 keeping up the memory of roses.
11 // Also the Liliun canadense is ap in p.
12 & very abundant in College Meadow.
13 So far as leaves are concerned
14 one of the most noticeable phenomena
15 of this green-leaf season--is the conspicu-
16 ous reflection of light in clear breezy
17 days from the silvery under sides of some.
18 All trees & shrubs which have light-
19 colored or silvery under sides to their leaves--
20 --but esp. the swamp white o. & the red maple
21 are now very bright & conspicuous--in the
22 strong wind after the rain of the morning.
23 Indeed now that the leaves are so numerous
24 they are more noticeable than ever--but you
25 //
26 must be on the windward side. Some
27 as the S. alba--are thus silvered only
28 at the top & extremities--the younger leaves
29 alone being sufficiently appressed to {show}
30 their undersides. But the 2 kinds
31 first mentioned are the most generally
32 conspicuous--& these forming commonly
33 the front rank--esp. at the base of

³poss "color--but"

1
 2 other
 3 hills--behind which grow{--}^oaks & birches
 4 & pines &c You see the whole outline of
 5 these trees--waving & rustling in the breeze{s}--against
 6 that darker green--suggesting frost work--
 7 or as if etched in silver on a green ground.
 8 not to mention grasses
 9 To be sure most if not all leaves ^ are
 10 a paler green beneath--& hence the oaks
 11 & other trees behind show various shades of
 12 green--which would be more observed--if
 13 it were not for these stronger contrasts.
 14 Though the wind may not be very strong
 15 nor incessant--you appear to see only the
 16 under sides of those first named--& they
 17 make a uniform impression--as if their
 18 leaves haveing⁴ been turned up were permanently
 19 held so-- Before the wind arose, the
 20 woode⁵ shore & hill sides--were an almost
 21 uniform green--but now the whole
 22 outline of the swamp white os & maples
 23 a sort of magic--"presto change--
 24 is revealed by the wind ^ distinctly against
 25 trees whose leaves are nearly of the same
 26 color with the upper sides of these--
 27 Some of the swamp wtoaks--whose
 28 leaves are but slightly turned up--look
 29 as if crisped by frost.
 30 The grape leaf also, where it occurs, is
 31 sufficiently conspicuous. Thus the
 32 leaves take an airing. It is like etching
 33 on silver ware.⁶

⁴T adds "ing" to "have"

⁵T leaves out the "d" in "wooded"

⁶This line cut off of "recordak" copy, viewed on xerox from manuscript

1 If you look sharply you perceive
2 also the paler undersides of the oaks &
3 birches in the background contrasting with
4 the darker upper sides of their lower
5 leaves.

6 In a maple swamp--{ever} maple top
7 stands now distinguished thus from the birches
8 in their midst. Before they were confounded
9 --but a wind come & lifts their leaves
10 showing their brighter under sides--& suddenly
11 as by magic the maple stands out
12 from the birch.

13 There is a great deal of life in this landscape.

14 What an airing the leaves get!-- Perchance
15 it is necessary that their undersides be thus
16 exposed to the light & air in order that they
17 may be hardened & darkened by it.

18 At the same time with this & indeed
19 for almost a week I have seen some maples
20 //of both kinds--just beginning to show a ruddy
21 tinge--& I think that this is really for the
22 most part an evidence of feebleness--
23 --for I see that one or 2 white maples
24 standing in wet places--which have been
25 {thus} premature--have finally died.

26 I see a snake crossing the river
27 //
28 at Hubbard's Bridge--as swiftly as
29 a muskrat could--which indeed I
30 at first too it for-- Faster than a

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29

muskrat woould⁷.

I find the ripest blueberries--(V vacillans)
not on the very top ~~of~~ nor on the {s}lower
slope--but on the brows, or what is called
the pitch of the hill (Conantum)⁸ toward the
light. The ripest are of course the largest--
& this year very large & hard & bead-like.

slender⁹ early spiranthes noticed.

//

I read of the Amazon that its
current indeed is strong--but the winds
always blows up the stream. This sounds too
good to be true.

July 24--60

The carpenter working for Edward Hoar in
Lincoln caught 2 or 3 days ago--an exhausted
or half-famished Golden winged warbler alive
in their yard. It was within half a mile
that I saw one a few weeks ago. It is a
sufficiently well marked bird--by the large
yellow spot on the wing--(the greater coverts)
Yellow front & crown--& the very distinct black
throat & I should say upper breast--above which white
divided by a broad black line through the eye.

//

Above blue gray--with much yellowish green
dusting or reflection--i.e edging to the
feathers.

Many a field where the grass has been cut
shows now a fresh--& very lit-up light green

⁷misspelled "would"

⁸blotch

⁹poss "Slender"

1 //as you look toward the sun-- This is a
2 remarkably cool day-- Therm 72° at 2 pm.
3 The song of the field sparrow sounds
4 //
5 more prominent of late--& quite rich &
6 beg. to
7 varied¹⁰ & methinks I ^ hear the warbling vireo
8 more?

9 July 25--60

10 Pm to Mr Bradshaw's Wayland
11 with Ed. Hoar.

12 I was surprised to see among the birds which
13 Bradshaw has obtained the Little auk of
14 //Nuttall--Mergulus alle or Common sea-
15 Dove--which he says that he shot
16 in the fall on the pond of the Assabet
17 at Knights' factory. There were 2 & the
18 other was killed with a paddle.

19 It is said in Wilson, though ap. not by him--
20 that "With us it is a very rare bird, &, when seen,
21 it is generally in the vicinity of the sea." One
22 was sent to him from Great Egg Harbor in
23 Dec. 1811 as a great curiosity--& this is the
24 one described. Rarely visits Great Britain--
25 is found as far N as Spitzbergen at least-- "The
26 Greenlanders call it the Ice-Bird from the
27 circumstance of its being the harbinger of
28 ice"-- "It grows fat in the stormy season, from
29 the waves bringing plenty of crabs & small fish
30 within its reach."¹¹

31 Giraud says ~~it~~ "In the U.S. it is rare"-- "I am
32 informed [it] is occasionally seen by the

33 Nuttall says its appearance here is always solitary-- --driven here by stress of weather--
34 that it has been seen in Fresh Pond--& Audubon found a few breeding in Labrador¹²

¹⁰poss stray mark after this word

¹¹rt. facing caret inserted after line to show where to insert text written vertically in left margin

¹²this text written vertically in left margin, connected by caret after within its reach."

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29

fishermen of Egg Harbor," is that on Long I?
says one was killed at "Raynor South"--&
it is said to breed on the Arctic Coast
Ross' party fed on them on the west coast of
Greenland.

Peabody says--"In hardiness & power of enduring
cold, no bird exceeds them;--" In Newfoundland
they are called the Ice-bird, from the presumption
that, unless extreme cold were approaching,
they would not come so far from home. Those
that are found in this state are generally exhausted
by their long flight; some have quietly sub-
mitted to be taken by the hand. They are not regular
visitants, but occasional solitary wanderers."

Was also surprised to see the Fork{-}Tailed
Stormy Petrel T. Leachii in his collection //
which he {caught} exhausted near his house
& I think that he said his boy found another
dead. Brewer says "Habitat from Mass. to
Newfoundland."-- Wilson says that one of
the other species (T. Wilsonii) was shot on the
Schuylkill near Philadelphia--& that they
are sometimes found in the interior of Great
Britain.-- Giraud says that the former--
like the last "is of rare occurrence on the
shores of Long Island," and, under the T.
Wilsonii, that "the petrel¹³ is never seen inland
except when driven in, as it occasionally happens,

¹³mark over the "p" might be attempt to correct "p" to "P"

1 by severe storms." Baird wrote to him¹⁴ shortly
2 after the gale in August 1842, "You have
3 probably seen an account in the papers of the
4 petrels which had been driven inland by the storm
5 of August. They were {nearly all} the Fork-tailed
6 Petrel, T. Leachii. I saw about half a dozen
7 specimens killed near Washington. They were killed
8 in Petersburg & Bowfort, Va. & many other places."

9 Ac. to Peabody Audubon¹⁵ makes
10 the Fork-tailed to be much more abundant on
11 the coast of Mass. than T. Wilsonii
12 & about vessels to be the most suspicious of the 3.
13 P. says "I have had one brought to me which was
14 taken near Chicopee River in Springfield, 70
15 miles from the shore."

16 He had also the Ardea exilis or least
17 //Bittern--which he obtained on his river meadow
18 He sees it there occasionally & {he set} it
19 up before, though it is not so common as
20 the viridis. He sees it stand on the pads.
21 It is considerably less than the viridis & more tawny
22 or tawny-brown. Wilson says it "is the smallest
23 known species of the whole tribe." & that like
24 the viridis they skulk by day & feed by night.
25 Peabody says "They are seldom seen, as they
26 rise only in sudden alarm."

27 He also has the Longeared Owl Strix Otus
28 //
29 which he killed¹⁶ in the woods behind {his} house

¹⁴stray mark over "him"

¹⁵"A" written over "th"

¹⁶marks after text

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34

Wilson says--"Except in size, this species has more resemblance to the Great Horned Owl than any other of its like." Prob. the same with the European-- Peabody says it "is never common" in Mass.-- Giraud has seen it in his neighborhood only in the winter.

He has the Rallus {Caroliniana}--& says that he sees another kind as common as this on the river meadows there--a true rail--but with a much larger bill-- He is very confident¹⁷ about it & has killed & set them up-- It is undoubtedly the R. Virginianus or lesser Clapper Rail-- which, as he had already said, corresponded to an English rail which he knew. So we have this in Concord no doubt.

He has the sylvia maculosa shot near his house-- Bluish ash above I believe--head or crown the same-- Yellow throat & beneath-- with many blackish spots & marks¹⁸ on sides & breast--& white spots on inner vanes of tail feathers--the tail being blackish.

Has 2 specimens of what he called the Crow black bird shot by his house in the spring.¹⁹ They appeared to me surprisingly large-- & he has furnished them with yellow irides which he says are like the original was. Nuttall says that the Q. major has a yellow iris--the other a silvery iris. Brewer says that the former resembles the latter "to a great degree, differing from it principally in size & in its concave tail"

~~This~~ Bradshaw measured about 14 inches long.

//
//
?

¹⁷stray mark after word?
¹⁸according to Torrey v. XIII p. 422
¹⁹poss "spring--"

1 He says these 2 were larger than others with
2 them. The vertical depth of bill at base was
3 that assigned to the Q. versicolor by Nuttall.
4 As set up--I think that the tail was not convex.

5 Passed a field in Wayland occupied by so
6 worthless a crop to the farmer as to attract atten-
7 tion-- A very undulating gravelly & stony field
8 filled with Johnswort in its p.--sorrel still
9 red-seeded & mulleins--between which
10 however you saw the gravel-- Yet very pleasant
11 to the naturalist.

12 July 26--60

13 2 Pm to Walden--

14 Rhyncospora alba, perhaps as long as {fusca},
15 //
16 {~~is-a~~} toward E part of Hubs Close--ie

17 Arethusa{--}part. Rusty cotton grass abundant--
18 but also going & gone to seed--say a fortnight
19 //
20 in same place

21 Common cranberry still lingers in bloom there--
22 //
23 though berries are 1/2 grown--

24 Methinks the leaves beg. to rustle generally
25 i.e with a harder rustle about June 11th when
26 //
27 they beg. to show light under sides in the breeze.

28 I saw a bream swimming about in that
29 smaller pool by Walden in Hubs. wood--though
30 entirely cut off from the pond now--{.} So they
31 may be well off in the Wyman meadow or
32 pout's nest--

July 27--60

Am Pretty heavy rain last night. //

The day after a heavy rain I can detect all the poor or sappy shingles on my neighbors low roof which I over look--for they ~~not drying~~ absorbing much water & not drying for a long time are so many black squares spotting the gray roof.

2 Pm Sail &²⁰ paddle down river--

The water has begun to be clear & sunny--revealing the fishes & countless minnows of all sizes & colors, this year's brood. //

I see healthy blossoms of the frontrank²¹ polygonum just fairly begun. //

I see running on the muddy shore & thin edged under the pontederia a large flat ^ brown bug (with six legs) {drawing}²² some 7/8 of an inch long pointed behind with ap. its eggs--50 or 60 in number, large & dark colored standing side by side on their ends & forming a very conspicuous patch--which covers about 1/3 of its {black} flat upper surface-- I remove one with my knife & it appears to stand in a thick glutinous matter. It runs through the water & mud & falls upon its back a foot or more from my hand without dislodging them.

See 20 rods or more down stream

²⁰written over "or"

²¹poss "front rank"

²²drawing of bug continues 1 line above and 1 line below

1 //4 or 5 young ducks--which appear already
2 to be disturbed by my boat-- So leaving that
3 to attract their attention--I make my
4 way along shore in the high grass & behind
5 the trees till I am opposite to them. At²³
6 a distance them appear simply black & white
7 as they swim deep--black beaks & white
8 throats. Now I find that they have re-
9 treated a little into the pontederia--&
10 are very busily diving, ~~not~~ or dipping--
11 not immersing their whole bodies, but their
12 heads & shoulders while their bodies are
13 perfectly perpendicular--just like tame ducks--
14 all of them close together--will be in this
15 attitude at the same moment. I now see
16 that the throat & prob. upper part at least of
17 breast is clear white & there is a clear line of
18 white above eye & on neck within a line of black--
19 & as they stand on their heads the tips ap.
20 (possibly wings??)
21 of their tails ^ is conspicuously white or whitish--
22 -- The upper part also is seen to be brownish
23 rather than black. I presume these to be
24 ? young summer ducks--though so dark--
25 say 2/3 grown--
26 How easy for the young ducks to hide
27 amid the pickerel weed along our
28 river--while a boat goes by--& this plant
29 attains its height when these water fowl

²³stray mark after "At"?

1 point--& the pistillate & staminate flowers are
2 intermixed--the one not distinctly above or below the
3 other-- Cannot identify it in Gray.

4 Also on S. W part of Paint cup meadow
5 a brown--sp. of different species from that
6 //
7 seen here the 22 (& maybe same with Pratt's)
8 it being fewer flowered in the spikes--{flower}
9 spikes more slender--& outwardly smooth green
10 yet with very broad leaves which with the
11 sheathes are more hairy than the other--
12 This smooth one has {the} lower glume one nerved
13 the upper 3--while the other had 3 nerves
14 in each & belonged no where in Gray. v press.

15 It appears to be like the hairy one & not yet
16 out.

17 Scripus subterminalis in the Assabet at I.
18 //
19 above Dove Rock how long?

20 July 29

21 Rain more or less by day & more in the night
22 //
23 2 Pm to Lincoln Bridge by RR--

24 Cyperus filiculmis how long? some time.

25 Panicum sanguinale X--yet the glume is as
26 long as the flower & there are 8 spikes

27 July 30th 60

28 2 Pm to Martial {&} Miles' swamp.

29 // Fimbristylis capillaris prob. several
30 days in same place.

31 See very pretty pink yarrow roadside op.
32 //
33 Whiting's orchard.

34 See henhawks perched--are they not

1
 2 more at liberty now their young being better
 3 able to shift for themselves? Some of them?
 4 {()}²⁶Am glad to press my way thro'
 5 Miles' swamp. Thickets of chokeberry bushes
 6 higher than my head--with many of their
 7 lower leaves already red--alternating with
 8 & raspberry {%Swamp%}²⁷
 9 young birches^--high blue berry--andromeda--high
 10 & low--& great dense flat beds of rubus
 11 sempervirens-- Amid these, perhaps in
 12 cool openings--stands an island or 2 of
 13 great dark-green high blue berry bushes--
 14 with big cool blue berries though bearing
 15 but sparingly this year.
 16 In a frosty hollow in the woods west of
 17 this & of the blackberry field--find a
 18 patch of Amelanchier prob oblongifolia??
 19 Comparing it with the Bot. of the Cliffs{--}it appears to be the oblong{.}--being
 20 much more obtuse & very little
 21 full of fruit now in its p. It is an open //
 22 serrate & not heart shaped like the Bot.
 23 sedge hollow surrounded by woods--with some
 24 shrubs in it rising above the sedge which have
 25 been killed by frost formerly. Here grows a
 26 pretty thick patch of the shad bush about
 27 a rod & a half long--the bushes about 3
 28 feet high--& quite interesting now in fruit
 29 short broad irregular
 30 Firm dark green leaves--with ^ racemes ~~of~~
 31 (cluster like) of red & dark dull purplish
 32 berries intermixed--making considerable variety
 33 in the color--of peculiar color among our
 34 small fruits.²⁸ The ripest & largest dark

²⁶poss open paren--see following page for poss close paren

²⁷written vertically in right margin, prob. in pencil, poss. not in T's hand

²⁸poss "fruits--"

1 purple leaves are just 1/2 inch in diameter.
2 You are surprised & delighted to see this
3 handsome profusion in hollows so²⁹ dry
4 & usually so barren--& bushes commonly
5 so fruitless. These berries are peculiar in
6 that the red are nearly as pleasant tasted
7 dark
8 as the more fully ripe ^ purple ones--
9 I think this crop is due to the wetness
10 & coolness of the summer--
11 Though³⁰ an agreeable berry they are hardly so
12 grateful to my palate as huckleberries &
13 for most are red
14 blueberries-- These conspicuous red ^ on rather
15 high & thin leaved bushes--growing open & airy--
16 remind you a little of the wild holly--{)}³¹
17 {--}the berry so contrasts with the dark leaf--
18 Returning, we come through
19 the midst of the nearly quite dry--
20 J. P. B's Cold Pool. Excepting a little
21 pool in the middle--this is now one
22 great dense bed--of Cyperus diandrus
23 //well out--& juncus conradis, as I call it
24 //now in p. (together with J{.}uncus acuminatus)
25 The lower & internal part of this bed is yellow
26 Bright yellow
27 ^like sedge--i.e the cyperus stems & leave--while³²
28 the spikes of this & the rest & form a soft
29 reddish brown crust as it were, over all--
30 Mix{t} with these over the whole area is
31 //literally a myriad of gratiola (say in its p.)

²⁹poss struck through

³⁰poss "though"

³¹poss close paren to matching the open paren from the previous page

³²seems to be written over "white"

1 I find the base of the plant by the
 2 E wall in the road about 6 rods S of
 3 John Flint's house.
 4 I copy this account of *P. recta* from Persoon.
 5 "Fol. septenatis quinatisque, foliol. lan-
 6 ceolatis grosse dentatis, petolis obcordatis
 7 cal. majoribus, caule erecto.-- -- -- --
 8 Ad muros et ad agrorum margines. Pet.
 9 magna pallida, calyce submajora."³³
 10 This is under his division with digitate
 11 if this is his word--(it is)
 12 leaves & a naked receptacle(?).³⁴ But
 13 In this the outside of the calyx or receptacle is shortly
 14 ? pubescent. & the petals are much longer than the
 15 (Do not find another
 16 calyx-- V. Persoon's other division so much like it)
 17 Pm up Assabet--
 18 Decidedly Dog-days & a strong musty
 19 //
 20 scent--not to be wondered at after the
 21 copious rains & the heat of yesterday.³⁵
 22 At mid Pm I am caught in another
 23 a great deal fell
 24 //deluging rain--as I stand under a maple
 25 by the shore. Looking on a water surface you
 26 can see as well as hear when it rains very
 27 hard. At first we had a considerable³⁶
 28 shower--which but slightly dimpled the
 29 water--& I saw the differently shaded or
 30 lit currents of the river through it all
 31 --but anon it began to rain very hard
 32 & there were a myriad white globules
 33 dancing or rebounding an inch or two

³³Christian Hendrik Persoon, prob. *Species Plantarum*.

³⁴or stray mark

³⁵poss. "yesterday--"

³⁶written over "considerably"

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32

from the surface--where the big drops fell.
& I heard a sound as if it rained pebbles or shot.

At this season the sound of a gentler
rain than this--i.e the sound of the dripping
rain on the leaves which are now dark
& hard--yields a dry sound as if the
drops struck on paper--but 6 weeks ago,
when the leaves were so yellowish & tender
methinks it was a softer sound. as was
the rustling.

Now--in the still moonlight--the dark
foliage stands almost stiff and dark
against the sky.

At 5 Pm the river is 9 7/8 in above {G. S. L.}³⁷

//

We may expect to see any
common small seeded European plant
springing up by our road sides in course
of time.

Before it rained hardest I could see in the
& smoother
midst of the dark ^ water--a lighter colored & rougher
surface--generally in oblong patches which {moved}
steadily down the stream--& this I think was the
new water from above welling up & making
its way downward amid the old. The water
or currents of a river are thus not homogeneous
--but the surface is seen to be of 2 shades--
the smoother & darker water which already fills
its bed--& the fresh influx of lighter colored
& rougher--prob. more rapid currents--which
spot it here & there--

³⁷written over text. in 1906 edition it is "summer level" or S. L.

1 i.e. some water seems to occupy it as
2 a lake to some extent--other is
3 passing thro' it as a stream, the lacustrine
4 & the fluviatile water-- These lighter
5 reaches--without reflections (?) are as it were
6 water wrong side up. But do I ever see
7 these except when it rains? And are they
8 not the rain water? which has not yet
9 mingled with the water of the river--

10 %v 6ps forward%

11 Aug 1st 1860

12 Pm to Cliffs

13 The earliest corn has shed its pollen say
14 //
15 a week or 10 days.

16 Rye, wheat, & oats & barley have bloomed
17 //
18 say a month.

19 I stand at the Wall end on the Cliffs
20 & look over the Miles meadow on Conantum.
21 It is an unusually clear day--after yester-
22 days rain.

23 How much of beauty--of color, as well as
24 form--on which our eyes daily rest, goes
25 unperceived by us! No one but a botanist
26 is likely to distinguish nicely the different shades
27 of green with which the surface of
28 the earth is clothed--not even a landscape
29 painter if he does not know the species of
30 sedges & grasses which paint it.

31 With respect to the color of grass

1
 2 most of those even who attend peculiarly
 3 to the aspect{s} of Nature--only observe--
 4 that it is more or less dark or light {&}
 5 green--or brown--or velvety--fresh³⁸--or
 6 parched &c-- But if you are studying grasses
 7 you look for another & different beauty &
 8 you find it, in the wonderful variety
 9 of color &c presented by the various species.³⁹

10 Take the bare unwooded earth now
 11 & consider the beautiful variety of shades
 12 (or tints?) of green that clothe it--under
 13 a bright sun. The pastured hills of
 14 Conantum now just imbrowned (prob. by
 15 the few now stale flowering tops of the red top
 16 which the cows have avoided as too wiry)
 17 present a hard & solid green (or greenish
 18 brown--just touched here & there delicately
 19 with light patches of sheep's fescue--
 20 though it may be only its radical {leaves} left--
 21 as if a ~~frost~~ dew lay on it there--& this
 22 has some of the effect of a watered sur-
 23 face--& the whole is dotted with a
 24 thousand little shades of {ro} projecting
 25 rocks & shrubs.-- Then looking lower
 26 at the meadow in Miles' Field--that
 27 is seen as a bright yellow & sunny stream
 28 (yet with a slight tinge of glaucous) between the
 29 dark green potato fields--flowing onward
 30 with {win}dings & expansions &
 31 ^as it were, with rips & waterfalls--to the river meads.

³⁸mark before "fresh"

³⁹poss "I" dot over first "e" in "species"

1
 2 in it. How this contrasts with the ad-
 3 jacent fields of red top--now fast falling
 4 before the scythe!

5 When your attention has been drawn to them,
 6 nothing is more charming than the common
 7 colors of the earths' surface.

8 See yonder flashing field of corn--thro'
 9 the shimmering air! (This was said day before
 10 yesterday--)

11 The decid. woods generally--have now & for
 12 a long time been nearly as dark as the pines--
 13 though unlike the pines--they show a general
 14 silveriness.

15 For some days have seen stigmas of what I
 16 have called cyperus dentatus--but it is⁴¹ evidently //
 17 later than the diandrus.

18 See a berry (not ripe) of the 2 leaved sol
 19 seal dropt at the mouth of a mouse or squirrels
 20 hole--& observe that many are gone from these
 21 plants, as if plucked by mice.

22 The sphagnum shows shows⁴² little black //
 23 balled drum sticks--now--

24 The nuthatch is active now //
 25 Meadow haying commenced-- //

26 Cinna arundinacea (?) almost //

27 Looked in 2 red maple swamps to
 28 find the young plants--

29 If you look carefully thro' a dense red maple
 30 swamp now--you find{--}many little maples

⁴¹stray marks after word

⁴²written over text--poss. "gr"

1 a couple of inches high--which have sprung
2 up chiefly in certain spots alone--especially
3 where the seed has fallen on little beds
4 of sphagnum which apparently have concealed
5 the seed at the same time that they supplied
6 the necessary moisture. There you find the
7 little tree already deeply rooted--while
8 the now useless winged seed lies empty--near
9 by--with its fragile wing half wasted away--
10 as if wholly unrelated to that plant--
11 not visibly attached--but lying empty on one
12 side-- But so far as I look, I see only
13 one maple to a seed--but indeed I see only a single
14 seed at a time. v np.

15 Nevertheless, you will be surprised on looking thro'
16 a large maple swamp--which ~~in the~~ 2 months
17 ago was red with maple seed--falling in showers
18 around--at the very small no' of maple seeds to be
19 found there--& prob every one of these will be empty--
20 The little maples appear oftenest to have sprung from
21 such as fell into crevices in the moss or leaves--
22 & so escaped. Indeed almost every seed that
23 falls to the earth is picked up by some animal
24 or other whose favorite & perhaps peculiar food
25 it is{.} They are daily {busy} about it in the season
26 & the few seeds which escape are exceptions--
27 There is at least a squirrel or mouse to a
28 tree-- If you postpone your search but for a
29 short time you find yourself only gleaning
30 after them. You may find several of their
31 holes under any tree--if not within⁴³ it-- They
32 ransack the woods-- Though the seed may
33 You do not find dense groves of them generally--as you might
34 expect from the abundance of seed that falls-⁴⁴

⁴³inserted

⁴⁴written vertically in left margin

1
 2 be almost {not} microscopic--it is nuts to them.
 3 & this ap. is one of the principal ends which
 4 these seeds were intended to serve--

5 Look under a nut tree--a month after
 6 the nuts have fallen--& see what proportion
 7 of sound nuts to the abortive ones & shells
 8 you will find ordinarily-- They have been
 9 dispersed--& many effectually planted far
 10 & wide by animals.-- You have come you
 11 would say after the {feast} was over &
 12 are presented with shells only-- It looks like
 13 a platform before a grocery. These little
 14 creatures must live--& pray what are they to eat
 15 if not the fruits of the earth?--ie the gra-
 16 {minivirous} ones. v below

17 Aug 2d--60

18 The wing of the sugar maples is dry & ripe to
 19 & seed
 20 look at--but the seed end ^ is quite green-- I find
 21 as Michaux did--one seed always {abortive}--

//

22 Pm up Assabet

23 The young red maples have sprung up chiefly
 24 on the sandy & muddy shores--esp. where there
 25 is a bay or eddy.

26 At 2 Pm the river is 12 7/8 above S. L.
 27 higher than for a long time--on ac. of the

//

28 rain of the 31st-- Seed of hop hornbeam not ripe.
 29 white

//

30 The button bush is about in p. & ^ lilies
 31 consid. past p. Mikania begun--& now

32 perhaps--the river's brink is at its height.

//

33 The black willow down is even yet still seen here
 34 & there on the water--

1 The river being raised 3 or 4 inches looks
2 quite full--& the bur-reed &c is floating
3 //off in consid. masses. See those round
4 white patches of eggs on the upright
5 //
6 sides of dark rocks.

7 There is now & of late a very thin--in some
8 lights--purplish scum on the water outside
9 of of coarser drift that has lodged--a
10 brown scum--somewhat gossamer like as
11 it lies & browner still on your finger when you
12 take⁴⁵ it up. What is it? The pollen of some
13 plant??

14 As we rest in our boat under a tree--we
15 hear from time to time the loud {slow} snap{--}
16 of a wood pewee's bill--overhead--which
17 is incessantly diving to this side & that after
18 an insect--& returning to its perch on a dead
19 twig-- We hear the sound of its bill when it
20 catches one.

21 In huckle berry fields I see the seeds of berries
22 recently left on the rocks where birds have perched.
23 How many of these small fruits they may thus
24 dismantle.

25 Aug 3d

26 The knotty⁴⁶ rooted cyperus out some days at least
27 //

⁴⁵uncrossed "t"

⁴⁶drawing or large caret under "knotty"

1 We crossed the immense rocky & springy
2 pastures--containing at first raspberries
3 but much more hardhack in flower--reddening
4 them afar--where cattle & horses collected
5 about us--sometimes came running to
6 us, as we thought for society, but
7 probably not. I told Bent of it, how they
8 gathered about us they were so glad to
9 see a human being--but he said I might
10 put it in my book so--it would do no
11 harm--but then the fact was they came
12 about me for salt. {We} said I, it was probably
13 because I has so much salt in my constitu-
14 tion. Said he if you had had a little salt
15 with you could hardly have got away from
16 them. Well said{,} I had some salt in
17 my pocket-- That{s} what they smelt said
18 he. Cattle young & old with horns in all
19 young heifers with budding horns
20 stages of growth ^ & horses with a meek⁴⁹
21 sleepy David look--though sleek & handsome
22 They gathered around us while we took shelter
23 under a black spruce from the rain.
24 We were wet up to our knees before
25 reaching the woods or steep ascent--where
26 we entered the cloud.
27 It was quite dark & wet in the woods--from
28 which we emerged into the lighter cloud
29 about 3 Pm & proceeded to construct our
30 camp in the cloud{--}occasionally amount{ing}

⁴⁹"weak" in 1906 edition

1
 2 to rain, where I camped some 2 years ago.

3 Choosing a place where the spruce
 4 was thick in this sunken rock yard--
 5 with a little hatchet a
 6 I cut out ^ space for a camp in their
 7 midst--leaving 2 stout ones 6 feet apart
 8 to rest my ridge pole on--& such limbs
 9 of these as would {best} form the gable ends.
 10 I then cut 4 spruces as rafters for the gable
 11 ends--leaving the stub ends of the branches
 12 to rest the cross beams or girders on--of
 13 which there were 2 or 3 to each slope--
 14 & made the roof very steep-- Then cut
 15 an abundance of large flat spruce limbs
 16 4 or 5 feet long & laid them on shingle
 17 fashion beginning at the ground & covering the
 18 stub ends-- This made a foundation for
 19 2 or 3 similar layers of smaller twigs--
 20 Then made a bed of the same {~~& all w~~}
 21 closed up the ends some what & all was done
 22 All these twigs & branches of course were drip-
 23 ping wet--& we were wet thro' up to our
 24 middles-- But we made a good fire
 25 at the door & in an hour or 2 were com-
 26 pletely dried.

27 The most thickly leaved & flattest limbs of the
 28 spruce are such as spread flat over the
 29 rocks--far & wide--(while the upper ones
 30 were more bushy & less flat.) not the
 31 often
 32 very lowest which were ^ partly under the surface
 33 & but meagerly leafed--but those close above them.

1 Stand & sitting before the fire which we
2 kindled under a sheltering⁵⁰ rock--we could
3 dry us much quicker than at any fireside
4 below--for what with stoves & reduced
5 fireplaces they could not have furnished such
6 blaze or heat in any kitchen's inn or parlor

7 This fire was exactly on the ~~sight~~ site
8 of my old camp & burned a hole deep into
9 the withered remains of its roof & bed.

10 It began to clear up & a star appeared at
11 8 Pm Lightning was seen far in the S.
12 cloud{--}drifting cloud--alternated with moonlight--
13 all the rest of the night. {A} 11 1/2 Pm I
14 heard a night hawk--may be it hunted then
15 because prevented by the cloud at evening.

16 I heard from time to time thro' the night a
17 distant sound--like thunder--or a falling of
18 a pile of lumber--& I suspect that this may have
19 been the booming of night hawks at a distance.

20 Aug 5th The wind changed to N. ly toward
21 morning--falling down from over the
22 summit & sweeping through our camp open on
23 {the} side--& we found it rather cold!

24 About an hour before sunrise--we heard again
25 the {ro} nighthawk--also the robin--chewink--
26 song sparrow--fringilla hiemalis--(& the wood-thrush
27 from the woods below.⁵¹

28 Had a grand view of the summit on the N.
29 now--it being clear--yellowish brown rocks
30 before the lichens were dry now at sunrise

⁵⁰missing "t" in "sheltering"

⁵¹missing close parenthesis

1
 2 I set my watch each morning by sunrise--&
 3 this am the lichens on the rocks of the S most
 4 summit (S of us) just lit by the rising sun--
 5 presented a peculiar yellowish or reddish brown light
 6 (being wet) which they did not any morning
 7 afterward. The rocks of the main summit
 8 was olive brown--& C. called it the
 9 mt of Olives.

10 I had gone out before sunrise to gather
 11 blue berries--fresh dewy (because wet with yester-
 12 just in p. //
 13 days rain) almost crispy blueberries^--much
 14 cooler & more grateful at this hour--&
 15 was surprised to hear the voice of people
 16 rushing up the mt for berries in the wet
 17 even at this hour. These alternated with
 18 bright light scarlet bunchberries not quite
 19 in p. //

20 The sides & angles of the cliffs & their
 21 rounded brows--(but esp. the SE angles
 22 for I saw very little afterward on the N side)
 23 indeed the cliffs or precipices are not on that side
 24 ^{^52}were clothed with these now lively olive brown
 25 alike in sun & shade & generally
 26 lichens (umbilicaria) ^ becoming afterward ^
 27 dark olive brown. when dry--{~~alike~~}
 28 many of the names inscribed on the summit were produced
 29 V. my specimens by merely rubbing off the lichens & they are thus distinct
 30 for years.
 31 At 7 1/2 am for the most part cloud here
 32 but the country below in sunshine.

33 We soon after set out to walk to the lower
 34 southern spur of the mt.

35 It is chiefly a bare gray & extremely diversified

⁵²a line connects caret to the interlined text above

1 rocky surface--with here & there a spruce or
2 other small tree or bush--or patches of them--
3 or a little shallow marsh on the rock--&
4 the whole mt top for 2 miles {was} covered
5 on countless little little shelves & in hollows
6 between the rocks with low blue berries of
7 2 or more species--varieties just in their
8 They are said to be later here than below--
9 p.^ Beside the kinds (black & blue Penn-
10 sylvanicum) common with us, there was the
11 downy Vac. Canadense--& a form or forms
12 intermediate bet this & the former--ie of like
13 form but less hairy-- The⁵³ Vac. Canad. has
14 a larger leaf & more recurved & undulating on its
15 surface--& generally a lighter green than the com-
16 mon. These were the blue with a copious
17 bloom--~~also~~ others simply black &⁵⁴{1} not shiny
18 as ours commonly-- & on largish bushes--& others
19 of a peculiar blue--as if with a skim coat of blue
20 hard & thin, as if glazed. such as we also have--
21 The black are scarce as with us.

22 These blueberries grew & bore abundantly almost
23 wherever anything else grew on the rocky part of the
24 mt--except perhaps the very wettest of the little swamps
25 & the thickest of the little thickets--quite up to
26 the summit. & at least 30 or 40 people
27 came up from the surrounding {country} this Sunday
28 to gather them. When we beheld the summit
29 at this season of the year far away & blue
30 in the horizon, we may think of the
31 blue-berries as blending their color with

⁵³poss stray mark after "The"

⁵⁴poss crossed out open parenthesis

1
 2 the general blueness of the mt.
 3 They grow alike in the midst of the cladonia
 4 lichens & of the lambkill & moss of the little swamps⁵⁵
 5 no shelf amid the piled rocks is {to} high or
 6 dry for them--for everywhere they enjoy the
 7 cool & moist aid of the mt. They are evidently
 8 a little later than in Concord{.}--say a week or
 9 10 days later. Blue berries of every degree of
 10 blueness & of bloom. There seemed to be fewer of
 11 them on the more abrupt & cold westerly & N westerly
 12 the hollows & shelves by
 13 sides--of the summit. & most in ^ the plateau just
 14 SE of the summit.
 15 Perhaps the prettiest berry--certainly the most
 16 novel & interesting to me--was the mt cranberry
 17 now grown--but ~~not~~ yet hard & with only its upper cheek
 18 red. They are quite local even on the mt-- //
 19 The vine is most common close to the summit
 20 but we saw very little fruit there--but some
 21 20 rods N of the brow of this low S spur--we
 22 found a pretty little dense patch of these⁵⁶ between
 23 the rocks--where we gathered a pine in order to
 24 ~~cook~~ make a sauce of them.-- They here formed
 25 a dense low flat bed using the rocks for a rod or
 26 green
 27 2--some lichens ^ mosses & the mt potentilla mingled
 28 with them--⁵⁷& they rose scarcely more than one inch
 29 above the ground. These vines were only an inch
 30 small
 31 & 1/2 long clothed with ^ thick glossy leaves with
 32 about as big as huckleber{ries}
 33 2 or 3 berries together ^ on the recurved end with a
 34 red cheek uppermost & the other light colored

⁵⁵poss stray mark after word

⁵⁶poss "them"

⁵⁷poss "them,"

1 It was thus a dense {——} firm {shad}⁵⁸ of
2 glossy little leaves dotted within{s} bright
3 red berries. They were very easy to collect--
4 for you only made incessant dabs at
5 them with all your fingers together--& the
6 twigs & leaves were so rigid that you brought
7 away only berries & no leaves.

8 I noticed 2 other patches where the berries were
9 thick--viz--one a few rods N of the little
10 rain water lake of the rocks, at the 1st or small
11 meadow (source of Contoocook) at NE end of the
12 mt--& another not more than 50 rods
13 NW of the summit--where the vines were much
14 ranker & the berries larger-- Here the plants were
15 4 or 5 inches high & there were 3 or 4 berries
16 of pretty large huckleberry size at the end of each--&
17 they branched like little bushes-- In each
18 case they occupied almost exclusively a little
19 sloping shelf between the rocks--& the
20 vines & berries were especially large & thick where
21 they lay up against the sloping sunny side of
22 the rock.

23 We stewed those berries for our breakfast
24 the next morning--& thought them⁵⁹ the best
25 berry on the mt.⁶⁰ though not being quite ripe
26 the berry was a little bitterish--but not the juice of it.
27 It is such an acid as the camper out {——}
28 craves. They are then somewhat earlier than
29 the common cranberry. I do not know that
30 they are ever gathered hereabouts.

⁵⁸poss misspelled "shade", 1906 edition has "sward"

⁵⁹stray mark following word

⁶⁰poss stray mark after "mt"

1 Yet Geo. Emerson speaks of it as "austere" & inferior to the common cranberry.
 2 At present they are very firm berries--of a deep dark-

4 glossy red. Doubtless there are many more
 5 Brought some home & stewed them the 12th--
 6 such patches on the mtn. & all thought them quite like--& as good
 7 as the common cranberry. %v {Loudon in AfB}%
 8 We heard the voices of many berry-pickers %}{1} p. 345%

9 & visitors to the summit--but neither this
 10 nor the camp we built afterward was seen
 11 by anyone.

12 Pm Walked to the wild swamp at
 13 the NE spur. That part is perhaps the
 14 most interesting for the wild confusion of its
 15 variously formed rocks--& is the least, if at
 16 all--frequented. We found the skull & jaws
 17 of a large rodent probably a hedge hog--larger
 18 than a woodchuck's--a considerable⁶¹ quantity
 19 of dry & hard dark brown droppings of an ellipti-
 20 cal form like very large rat droppings some-
 21 what of a similar character but darker
 22 than the rabbits--& I suspect that these
 23 were the the porcupine's.

24 Returned over the top at 5 Pm after the
 25 visitors, men & women, had descended-- --&
 26 so to camp.

27 Aug. 6 The last was a clear cool night
 28 at 4 am see local lake like frogs in
 29 some valleys below--but there is none here.
 30 after a breakfast on cranberries
 31 This am. leaving, as usual, our luggage
 32 concealed under a large rock, with other
 33 rocks placed over the hole--we moved

⁶¹written over "considerably"

1 about a quarter of a mile along the edge
2 of the plateau eastward & built a new camp
3 there. It was⁶² place which I had noticed the
4 day before--where sheltered by a perpendicular
5 ledge some 7 feet high & close to the {bough}
6 brow of the mt grew 5 spruce trees--
7 2 of these stood 4 feet from the rock &
8 6 or more apart, so clearing away the super-
9 fluous branches--I rested {stout} rafters from
10 the rock edge to limbs of the 2 spruce--&
11 placed a plate beam across & with 2 {c} or 3 cross beams
12 or girders now had a roof which I could climb
13 & shingle. After filling the inequalities with
14 rocks & rubbish I soon had a sloping floor
15 on which to make our bed. Lying there--
16 on that shelf just on the edge of the steep
17 declivity of the mt we could look all over
18 the S & SE world without raising our heads.
19 The rock running E & W was {our} shelter on the N.
20 Our huts being built of spruce entirely--
21 were not noticeable 2 or 3 rods off--for we
22 did cut the spruce amid which they were built
23 more than was necessary--bending aside their boughs
24 in order to enter-- My companion returning from
25 a short walk was lost when within 2 or 3
26 rods-- The different rocks & clumps of spruce
27 looked so much alike--& in the moonlight
28 we were liable to mistake some dark recess
29 between two neighboring spruce 10 feet off for

⁶²poss missing word

1
 2 the entrance to our house-- We heard this Pm the
 3 tread of a blueberry picker on the rocks 2 or 3 rods north
 4 of us--& saw another as near S--& stealing
 5 out we came round from another side & had some
 6 {conversation} with them--2 men and a boy--but
 7 they never discovered our house nor suspected it.
 8 --The surface is so uneven that 10 steps will
 9 often suffice to conceal the ground you
 10 lately stood on--& yet the different shelves & hollows
 11 are so much alike that you cannot tell if
 12 one is new or not. It is some what like
 13 travelling over a huge fan. When in ~~the~~ a
 14 valley the nearest ridge conceals all the other
 15 & you cannot tell one from another.

16 This Pm again walked to the larger N. E.
 17 swamp--going directly--i.e. E of the promontories
 18 or part way down the slopes-- Bathed in the
 19 small rocky basin above the smaller meadow.

20 These 2 swamps are about the wildest
 21 part of the mt & most interesting to me.

22 The smaller occurs on the NE side of the main mt
 23 i.e on the NE end of the plateau⁶³.

24 It is a little roundish meadow a few rods over
 25 with cotton grass in it--the shallow bottom of
 26 a basin of rock--and out⁶⁴ the east side there
 27 trickles a very slight stream just moistening the
 28 rock at present & collecting enough in one
 29 cavity to afford you a drink-- This is evidently
 30 a source of the Contocook. (The one I
 31 noticed 2 years ago as such.)

32 The larger swamp is consid. lower--& more
 33 Northerly--separating the NE spur from

⁶³poss "Plateau"

⁶⁴stray mark following word

1 the main mt prob. not far from the
2 {line} of Dublin. It extends NW & SE
3 some 30 or 40 rods--& prob. leaked out now
4 under the rocks on⁶⁵ the NW end--though
5 I found water only half a dozen rods below--
6 & so was a source probably of the Ashuelot
7 The prevailing grass or sedge in it {below}
8 & sphagnum
9 grows in tufts in the green⁶⁶ moss^--between the
10 fallen dead spruce timber was the Eriophorum
11 vaginatum (long done) & the E. gracile.
12 also the Epilobium palustre ap in p. in it--& com-
13 mon wool grass (S. Eriophorum)-- Around its edge
14 grew the chelone glabra (not yet out)--meadow
15 sweet in bloom--black-chokeberry just ripening--
16 red elder its fruit in p. mt ash--{carex} trisperma
17 {or} Deweyana small & slender & the fetid currant
18 in fruit ~~at the~~ {base} in a torrent of rocks at
19 the E end. &c &c.
20 I noticed a 3d yet smaller--quite small swamp
21 yet more Southerly--on the edge of the plateau--evidently
22 another source of a river when the snows melt.
23 At 5 Pm we went to our
24 first camp for our remaining luggage.
25 From this point at this hour the rocks of
26 the precipitous summit (under whose S side
27 that camp is placed) lit by the declining sun
28 were a very light gray--with reddish tawny
29 touches from the now drying ~~reddish~~ aira
30 inaccessible
31 flexuosa on the ^ shelves & along the seams.

⁶⁵"at" in 1906 edition

⁶⁶"green" inserted

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30

Returned to enjoy the evening at the 2d camp.
 Evening & morning were the most interesting
 seasons--esp. the evening {on} each day, about
 an hour before sunset--I got sight, ⁶⁷as it
 were accidentally, of an elysium beneath
 me-- The smoky haze of the day--suggesting
 a furnace like heat--a trivial dusti-
 ness--gave place to a clear transparent
 enamel--through which houses--woods
 farms & lakes were seen as in picture--
 indescribably fair-⁶⁸& expressly made
 to be looked at.
 At any hour of the day--to be sure--the sur-
 rounding country looks flatter than it is--
 furrowed
 Even the great steep ^ & rocky pastures--red
 with hard hack & raspberries--which creep
 so high up the mt amid the woods--in
 which you think already that you are
 half way up perchance--seen from the
 top or brow of the mt, are not for a long
 time distinguished for elevation above the
 surrounding country--but they look smooth
 & tolerably level & the {cattle} in them are
 not noticed or distinguished from rocks--unless
 you search very particularly--
 At length you notice how the horses &
 barns keep a respectful--and at first
 unaccountable distance from these near pastures

⁶⁷stray mark, prob. bleedthrough
⁶⁸bleedthrough over dash

1
 2 hour longer. So much shorter are their
 3 more artificial
 4 days & so much ^ light & heat must
 5 they obtain at the former house. It would
 6 be a serious loss methinks one hour of sun
 7 light every day. We saw the sun so much longer.
 8 Of course ~~the lamps were lit~~ the labors of the
 9 day were brought to an end--the sheep began
 10 to bleat--the doors were closed the lamps were
 11 lit--& preparations for the night were made
 12 there so much the earlier.

13 The landscape is shown to be, not flat, but
 14 hilly--when the sun is half an hour high⁷¹
 15 by the shadows of the hills.

16 But above all from 1/2 an hour to 2 hours
 17 before sunset--many {western} mt ranges are
 18 revealed, so the sun declines, one behind another
 19 by the dark outlines & the intervening haze
 20 I.e.⁷² the ridges are dark lines, while the intervening
 21 valleys are a cloud like haze-- It was so
 22 at least from 6 to 6 1/2 Pm on the 6th & at
 23 5 Pm on the 8th--it being very hazy still, I
 24 could count in the direction of Saddle-
 25 back mtn 8 distinct ranges--revealed by the
 26 darker lines of the ridges rising above this cloud⁷³-
 27 like haze{.} & I might have added the
 28 ridge of Monadnock itself within a quar-
 29 ter of a mile of me.

30 Of course, the last half, of these mt ridges
 31 appeared successively higher--and seemed higher

⁷¹poss stray marks after word

⁷²written over text

⁷³written over text or corrected

1 (i.e. the last half)
2 all of them ^ than the mt we were on
3 as if you had climbed to the heights of the
4 sky by a succession of stupendous terraces
5 reaching as far as you could see from N
6 to S. The Connecticut valley was one broad
7 gulf of haze which you were soon over.
8 They were the green mts that we saw--but
9 there was no greenness only a bluish mistiness
10 in what we saw--& all of Vermont that
11 lay between {t} us & their summit was but a
12 succession of parallel ranges of mts-- Of
13 course almost all that we {commonly} mean
14 commercially & agriculturally by Vermont
15 was concealed in those long & narrow haze
16 filled valleys. I never saw a mt that
17 looked so high & so melted {away} at
18 last cloudlike into the sky--as Saddle
19 back this eve--when your eye had clomb
20 to it by these 8 successive terraces-- You
21 had to begin at this end & ascend step by step
22 to recognize it for a mt at all. If you had
23 just rested your eye on it, you would would
24 have seen it for a cloud it was so incredibly high
25 in the sky.

26 After sunset the ponds are white & distinct.
27 At 5 Pm the 5th being on the apex--the small pond by the school house is mostly smooth
28 plated with a darker ripp{le}
29 portion in the middle

30 Earlier we could distinguish the reflections
31 {drawing}⁷⁴ of the woods perfectly in ponds 3 miles off

32 I heard a cock-crow very shrilly & distinctly
33 early in the evening of the 8th--this {excepting} perhaps

⁷⁴drawing of pond in left margin

1
 2 was the most distinct woud from the lower world that
 3 I heard up there at any time, not excepting even
 4 the RR. whistle--(which was louder--) It reached
 5 my ear perfectly to each note & curl--from some--
 6 sub-montane cock--and also heard at this
 7 hour an occasional bleat from a sheep in
 8 some mountain pasture--& a lowing of a
 9 cow--

10 And at last we saw a light here & there in
 11 a farm-house window--

12 We heard no sound of man--except the RR whistle
 13 & on Sunday a Church bell.⁷⁵ Heard no dog
 14 that I remember. Therefore I should say that of
 15 all the sounds of the farm houses the crowing
 16 of the cock can be heard furthest or most dis-
 17 tinctly under these circumstances. It seemed
 18 to wind its way through the layers of air as a
 19 sharp gimlet thro' soft wood--& reached
 20 our ~~ey~~ ears with amusing distinctness{.}

21 Aug 7th⁷⁶

22 Morning--(Dawn & sunrise) was another
 23 interesting season. I rose always by 4 or 1/2 past 4
 24 to observe the signs of it--& to correct my watch--
 25 From our first camp I could not see the sun-
 26 rise, but only when its 1st light (yellowish or
 27 rather pinkish) was reflected from the lichen clad
 28 rocks of the Southern spur. But here, by
 29 going eastward some 40 rods I could see the

⁷⁵poss "Church bell--"

⁷⁶T writes date flush to left margin

1 sun rise--though there was invariably a low
2 stratum or bar of cloud in the horizon.

3 The sun rose about 5 The tawney or yellowish
4 pastures about the mt (below the woods--what was
5 the grass?) reflected the auroral light at 4-20
6 am remarkably--& they were at least as distinct
7 as at any hour--

8 There was, every morning more or less solid white
9 fog to be seen on the earth, though none on
10 the mt. I was struck by the localness of these
11 fogs. For 5 mornings they occupied the same
12 place & were about the same in extent. It
13 was obvious that certain portions of
14 N.H. & Mass. were at this season
15 commonly invested with fog in the morning--
16 while others, or the larger part,--were free
17 from it-- The fog lay on the lower parts only--

18 From our {pt} of view--the largest lake
19 of fog lay in Ringe & Southward--& SE of Fitz--
20 william i.e. about Winchendon very large there--
21 In short the fog lay in great spidery lakes &
22 streams answering to the lakes streams & meads be-
23 neath--especially over the sources of Miller's
24 river--& the region of Primitive wood thereabouts
25 But it did rest on the lakes always{--}i.e where they
26 were elevated--as now some in Jaffrey were
27 quite clear. It suggested that there was an
28 important difference--so far as the health &
29 spirits of the inhabitants was concerned bet-⁷⁷

⁷⁷poss "bet."

1
 2 the town where there was this regular morning fog--
 3 & that where there was none--

4 I shall always remember the inhabitants of State
 5 Line as dwellers in the fog. The geography
 6 & statistics of fog have not been ascertained.
 7 If we awake into a fog--it does not occur to
 8 us that the inhabitants of a neighboring town
 9 which lies higher may have none--neither do
 10 they, being ignorant of this happiness, inform us
 11 of it. Yet when you come to look down
 12 thus on the country every morning on to the
 13 country--you see that here this thick white
 14 veil of fog is spread & there not⁷⁸. It was
 15 often several hundred feet thick-- Soon
 16 rising breaking up & drifting off--or rather seeming
 17 to drift away--as it evaporated. There was commonly
 18 such a risen fog drifting through the interval
 19 bet. this mt & Gap Monadnock.

20 One morning I noticed clouds as high as
 21 the Peterboro⁷⁹ hills--a lifted fog.--ever drifting
 22 easterly but making no progress--being dissipated

23 Also long rolls & ant-eaters of cloud--at
 24 last reduced by the sun to mere vertebrae. That
 25 cloud & ap.
 26 morn (the 8th) the great & general ^ fog combined
 27 over the lowest land running SW from Rings--was⁸⁰
 28 ap 500 or more feet deep--but our mt was
 29 above all

30 This am I cut & measured a spruce on the N
 31 side the mt--& afterward visited the summit
 32 where one of the coast surveyors had been signalling

⁷⁸T writes transposition line over "there" and under "not"

⁷⁹stray mark after word?

⁸⁰stray mark after word?

1 as I was told to a mt in Laconia some
2 55 miles off--with a glass reflector.

3 After dinner⁸¹ descended into the Gullf⁸² & swamp
4 beneath our camp--

5 At noon every roof in the southern country
6 sloping toward the north was distinctly revealed.--
7 a{-}lit gray.

8 In the Pm walked to the Great Gulf & meadow
9 in the midst of the plateau just east of & under
10 the summit.

11 Aug 8th Wednesday--

12 8 1/2 am walk round the W. side of the summit
13 Bathe in the rocky pool there--collect mt cran-
14 berries on the NW side--return over the summit
15 & take the bearings of the diff. spurs &c--
16 Return to camp at noon--

17 Toward night walk to E edge of the Plateau.

18 Aug 9th at 6 am leave Camp for Troy.
19 where we arrive after long pauses, by 9 am--
20 & take the cars at 10-5

⁸¹poss "Dinner"

⁸²T misspells "Gulf"

- 1
- 2 I observed these plants on the
- 3 Rocky summit of the mt.--above the forest-- --
- 4 Raspberry (not common)
- 5 Low blue berries 2 or 3 vars %V p 32%
- 6 %x% Bunch berry %x%
- 7 %x% S. Thyroidea %x%
- 8 %x% Fetid currant (common) leaves beginning to be scarlet--grows amid %x%
- 9 loose fallen rocks
- 10 %x% Red cherry (some ripe) & handsome %x%
- 11 %x% Black chokeberry
- 12 %x% Potentilla tridentata still lingering in bloom-- %x%
- 13 Aralia hispida still " " %x%
- 14 %x% Cow-wheat (common) still in bloom. %x%
- 15 %x% Mt cranberry not generally abundant. full grown %x%
- 16 earlier than lowland do. %V p 33%
- 17 %x% Black spruce.
- 18 %x% Lambkill--(lingering in flower in cool & moist places)
- 19 %x% Aster acuminatus abundant--not generally open %x%
- 20 but fairly begun to bloom
- 21 %x% Red Elder--(ripe--ap in p.) not uncommon
- 22 %x% Arenaria Greenlandica still pretty common in flower. %x%
- 23 Solidago lanceolata not uncommon--just fairly begun
- 24 Epilobium angustifolium (in bloom) not common, however.
- 25 small &
- 26 %x% Epilobium palustre (same time)--common in mosses slender %x%
- 27 %x% Wild holly common--berries not quite ripe--
- 28 %x% Viburnum nudum common--berries green {%x%}
- 29 White pine (saw 3 or 4 only⁸³ mostly very small.
- 30 %x% Mt ash abundant berries not ripe (--generally very small
- 31 largest in swamps
- 32 Diervilla (not uncommon) still
- 33 %x% Rhodora abundant--low i.e. short
- 34 %x% Mead-sweet abundant ap. in p.

⁸³word inserted

- 1 Hemlock 2 little ones with rounded tops
- 2 Chelone glabra (not yet--at NE swamp-side
3 Yarrow--
- 4 %x% Canoe birch--very small
- 5 %x% Clintonia borealis with fruit
- 6 Checkerberry--
- 7{%x%}Gold thread
- 8 1 3 ribbed g. rod NW side (not canadense)
- 9 Tall rough--g. rod--not yet (not uncommon--
- 10 Populus Tremuliformis not very common
- 11 Polygonum cilinode in bloom--
- 12 %x% Yellow birch (small
- 13 Fir--a little--4 or 5 trees noticed
- 14 Willows not uncommon (4 or 5 feet high)
- 15 very
- 16 Red maple a ^ little small
- 17 %x% Water andromeda (common about the bogs)
- 18 Trientalis
- 19 Pearly Everlasting (out--
- 20 Dip. umbellatus in bloom not common? NE swamp side
- 21 also N. W. side of mt
- 22 %x% juncus trifidus
- 23 Some juncus paradoxus?
- 24 " juncus acuminatus? ⁸⁴about edge of marshes
- 25 Cyperaceae⁸⁵
- 26 %x% Eriophorum gracile abundant whitening the little swamps--
- 27 %x% Eriophorum vaginatum " ⁸⁶now done ⁸⁷ " long done
- 28 (this the coarse grass in tufts in marshes)--
- 29 Wool grass not uncommon (common kind)
- 30 Carex trisperma (?) or Deweyana with large seeds--
- 31 slender & drooping by side of NE swamp{.} %v press{.}%
- 32 Carex scoparia ? or {Straminea} ? a little.
- 33 C. Debilis{--}
- 34 C. small rather close spiked C. canescens like ? common--
- 35 A fine grass like plant very common--perhaps
- 36 %x% Eleocharis tenuis--now without heads--but marks of {them}

⁸⁴connected to "paradoxus?" and "acuminatus?" lines with side-facing caret

⁸⁵T inserts the "y" in "Cyperaceae", orig. "C" looks like "G"

⁸⁶blotch or bleedthrough

⁸⁷down-facing caret

1
2 Grasses
3 %x% Aira flexuosa
4 Glyceria elongata with appressed branches (some
5 purplish) in swamp.⁸⁸
6 Blue joint ap in p. one place
7 Festuca ovina one place{.}
8 Cinna arundinacea--~~{be}~~ one place--
9 Agrostis scabra (?) at one spring q.v.
10 Ferns & Lichens &c
11 A large greenish lichen flat on rocks--of a
12 peculiarly concentric growth-- {drawing} q.v.
13 Some common sulphur lichen--
14 The very bright handsome crustaceous yellow lichen as on
15 White⁸⁹ mts q.v.
16 2 or 3 umbilicaria lichens q.v. giving the
17 Dark brown to the rocks--
18 A little ^{^90} of the old hat umbilicaria as at Flints Pond
19 in one place Rock
20 Green moss & sphagnum in the marshes--
21 {T}2 common cladonias white & greenish
22 Stereocaulon--
23 Lycopodium complanatum one place
24 Lycopodium annotinum--not very common.
25 Common Polypody
26 Dicksonia fern q.v.
27 Sensitive fern--& various other common ones
28₉₁
29 I see that in my last visit in June 58--
30 I also saw here--Labrador tea on the N side
31 2 leaved sol seal--Amelanchier Canad. var. oligo-
32 kinds of
33 carpon--& var oblongifolia--1 or 2 or 3 ^ willows
34 A little mayflower--& chiogenes
35 & Lycopodium clavatum

⁸⁸poss "swamp--"

⁸⁹poss "white"

⁹⁰reversed caret pointing to line underneath

⁹¹stray mark or blotch in middle of line, rest of line blank

1 The prevailing⁹² trees & shrubs of {these}
 2 in order of commonness &c low blueberry
 3 mt top are ^ ^ Black spruce.--Lambkill--
 4 black-choke berry--wild-holly--vib. nudum
 5 --mt ash--meadow sweet--Rhodona--red-cherry
 6 canoe birch--water andromeda--Fetid currant--
 7 The Prevailing & characteristic smaller plants
 8 grasses
 9 excepting--^cryptogamic &c Potentilla tridentata
 10 S. Thyrsoida--bunch-berry--cow-wheat--aster-
 11 acuminatus-- --arenaria Greenlandica--mt
 12 cranberry--Juncus Trifidus--Clintonia borealis
 13 --Epilobium palustre--aralia hispida--
 14 Of Cyperaceae the most common & noticeable
 15 now were Eriophorum gracile & vaginatum--
 16 a few sedges--and perhaps the grass like Eleocharis tenuis?
 17 The⁹³ grass of the mt now was the Aira flexuosa.
 18 large & abundant--now somewhat dry & withered
 19 most would not have noticed or detected any other.
 20 on all shelves & along the seams quite to the
 21 top--a pinkish tawney now-- The other kinds
 22 named were not common-- You would say it was
 23 a true mt grass. ~~Almost~~ The⁹⁴ only grass that
 24 a careless observer woud⁹⁵ notice.
 25 There was nothing like a sod on the mt top
 26 The tufts of j. Trifidus perhaps came the nearest
 27 to it.

⁹²word triple underlined

⁹³word triple underlined

⁹⁴"T" written over "t"

⁹⁵T misspelled "would"

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29

The black spruce is the prevailing tree--
commonly 6 or 8 feet high--but very few &
those only in the most sheltered places as hollows
& swamps are of regular outline--on ac. of the
strong & cold winds with which they have to
contend.⁹⁶ 15 feet high {woud} be unusually
large. They cannot grow here⁹⁷ without some
kind of lee to start with. They commonly consist
of numerous flat branches close above one-
another for the first foot or 2 spreading
close over the surface &⁹⁸ filling & concealing
the hollows between the rocks--but exactly
at a level with the top of the rock which
shelters them they cease to have any limbs
on the N side, but all their limbs now
are included within a quadrant bet
SE & SW--while the stem{p} which is al-
ways perfectly perpendicular is bare & smooth
on the N side-- Yet it is led onward at the
top by a few tuft of tender branches a foot
in length & spreading every way as usual--but
the N part of {them} successively die & disappear--

~~Sometimes~~ They thus remind you often of
masts of vessels with sails set on one side--&
some times one of these almost bare masts is seen
to have been broken short off at 10 feet from
the ground--such is the violence of the wind there.

I saw a spruce healthy & straight full 16 feet

⁹⁶bleedthrough following word

⁹⁷bleedthrough or blotch over word

⁹⁸written over text

1 without a limb, or the trace of a limb on the N
2 side. When building my camp--in order
3 to get rafters 6 feet long & 1 1/2 inches in
4 diameter at the small end--I was obliged
5 to cut down spruce at least 5 inches in
6 diameter at 1 foot from the ground. So stout
7 & tapering do they grow. They spread so close
8 to the rocks--that the lower branches are often
9 half worn away for a foot in length by
10 their rubbing on the rocks in the wind--
11 & I sometimes mistook the creaking of such a
12 limb for the note of a bird--for it is just such
13 a note as you would expect to hear there.

14 The 2 spruce which formed the sides of my 2d camp
15 had their lower branches behind the rocks so thick &
16 close & one the outsides of the quadrant so
17 directly above one another perpendicularly-- --that
18 side
19 they made 2 upright ^ walls as it were very
20 convenient to interlace & make weather tight.

21 I selected a spruce growing on the highest
22 part of the Plateau E of the summit--on its N.
23 slope--about as high as any tree of its size--to
24 cut & count its rings-- It was ~~{6} 5 feet 6 in.~~
25 5 feet 5 inches high-- As usual all its limbs except
26 some of the leading twigs extended toward the South. One
27 of the lowermost limbs--so close to the ground that I
28 thought its green extremity was a distinct tree--
29 was 10 feet long. There were 10 similar limbs
30 (though not so long) almost directly above one another within
31 2 feet of the ground. The largest 2 inches thick
32 at the limb⁹⁹-- I cut off this tree at 1 foot

⁹⁹poss "but "

1
 2 from the {tree} ground. It was there 5 inches in¹⁰⁰
 3 diameter & had 44 rings⁻¹⁰¹but 4 inches of its
 4 growth was on the S side the center & only one inch
 5 on the N side. I cut it off again 19 inches higher
 6 & there there were 35 ~~in~~ rings.

7 Our fuel was the dead spruce--ap. that
 8 which escaped the fire some 40 years ago!!
 9 which lies spread over the rocks in considerable
 10 quantity still--esp. at the N. E. spur.

11 It makes very good dry fuel & some of it
 12 is quite fat & sound.

13 The spruce twigs were our bed-- I observed that
 14 being laid bottom upward in a hot sun--as
 15 at the foot of our bed--the leaves turned
 16 pale brown as if boiled & fell off very soon--

17 The black spruce is certainly a very wild tree--
 18 & loves {a} primitive soil just made out
 19 of disintegrated granite.

20 After the blue berry--I should say that
 21 the lambkill was the commonest shrub.

22 The black choke berry was also¹⁰² very common--but
 23 this & the rhodora were both dwarfish.

24 Though the meadow sweet was very common I did
 25 not notice any hardhack--yet it was exceedingly
 26 prevalent in the pastures below--

27 The S. Thyrsoides was the golden rod of
 28 the mt top--from the woods quite to the
 29 summit{.}-- Any other g. rod was comparatively
 30 scarce. It was from 2 inches to 2 feet high--

¹⁰⁰stray mark or blotch after line

¹⁰¹bleedthrough

¹⁰²T writes transposition line over "was" and under "also"

1 small
2 It grew both in ^ swamps & in the seams of the
3 rocks everywhere & was now in its p.
4 The bunch berry strikes one from
5 about
6 these parts as much as any--^a dozen berries
7 in a dense cluster--a lively scarlet on a green
8 ground.
9 Spruce was the prevailing tree--
10 Blue berry the berry{--} --S Thyrsoides the
11 golden rod--A. acuminatus the aster
12 (the only one I was & very common)--juncus
13 trifidus the juncus & aira flexuosa
14 the grass--of the mt. top.
15 The 2 cotton grasses named were very com-
16 mon & conspicuous in & about the little meadows.
17 The Juncus trifidus was the common
18 grass (or grass like plant) of the very highest
19 part of the mt--the peak{s} & for 30 rods downward--
20 growing on the shelves & esp. on the edges of the
21 {scars} rankly--& on this part of the mt al-
22 most alone had it fruited--for I think
23 occasionally
24 that I saw it ^ lower & elsewhere on the rocky portion
25 without fruit.
26 The ap. common Green & white cladonias
27 together with yet whiter stereocaulon--grew all
28 over the flat rocks--in profusion & the
29 ap common greenish rock lichen (q.v. in box)
30 grew concentric-wise in large circles on the

1
 2 slopes of rocks also--not to mention the common small
 3 umbilicaria (qv) of 1 or 2 kinds which covered the brows
 4 & angles of the rocks.

5 The berries now ripe were
 6 blue-berries
 7 bunch berries
 8 Fetid currant
 9 Red cherry
 10 Black choke berry (some of them)
 11 mt cranberry (red cheeked & good cooked)
 12 Red elder quite showy
 13 Clintonia borealis
 14 Raspberry (not common-

15 ¹⁰³& berries yet green were
 16 Aralia hispida (ripe in Concord, much of it)
 17 Wild holly (turning)
 18 nudum
 19 Viburnum ^ {green}
 20 mt ash

21 The Birds which I noticed were
 22 Robins--Chewinks--F. hiemalis--song sparrow--
 23 night-hawk--swallow (a few prob. barn swallow--one
 24 flying over the extreme summit)--crows--(sometimes
 25 flew over though mostly heard in the woods below)
 26 wood thrush--(heard from woods below)--(& saw
 27 a warbler with a dark marked breast & yellowish
 28 & white throat
 29 angle to wing--^) & heard a note once like a very large
 30 & powerful nuthatch--some small hawks{.}

¹⁰³indents approx. one-third of line

1 The bird peculiar to the mtn was the F. hiemalis
2 flitting over the rocks
3 & perhaps the most common--^unless the robin &
4 chewink were as common-- These, with the song-
5 sparrow & wood thrush were heard regularly each
6 morning. I saw a robin's nest in one of the
7 little swamps.

8 The wood-thrush was regularly heard late in the
9 Pm--its strain coming{ng} up from the woods below
10 as the shadows were lengthening.

11 But above all this was an excellent place
12 to observe the habits of the Night hawk{s}.

13 They were heard an seen regularly at
14 sunset--(one night it was at 7-10 or exactly
15 at sunset) coming upward from the lower & more
16 shaded portion of the rocky surface below our
17 camp--with th{eir} spark spark soon answered
18 by a companion--for they seemed always to hunt
19 in pairs. Yet both would dive & boom & ac. to
20 Wilson only the male utters this sound.

21 They pursued their game thus a short distance
22 apart{--}some 60 or 100 feet above the gray
23 rocky surface in the twilight--& the constant
24 spark spark seemed to be a sort of call note
25 to advertise each other of their neighborhood--
26 Suddenly one would hover & flutter more stationarily
27 for a moment somewhat like a kingfisher--&
28 almost perpendicularly
29 then dive ^ ~~straight~~ downward with a rush for 50 feet
30 frequently within 3 or 4 rods of us & the loud
31 or rip
32 booming sound ^ was made--just at the curve as it
33 ceased to fall--but whether voluntarily of invol-
34 untarily I know not. They appeared to be diving

1
 2 for their insect prey. What eyes they must have
 3 to be able to discern it beneath them against the
 4 rocks in the twilight. As I was walking about
 5 the camp--one flew low within 2 feet of the
 6 surface about me & lit on the rock within
 7 ^{harsh}
 8 3 rods of me & uttered a ^ note like c.¹⁰⁴o. w--
 9 c--o--w-¹⁰⁵hard & gritty & allied to their common
 10 notes--which I thought expressive of anxiety
 11 ^{its}
 12 or to alarm me{--}or for ~~their~~ mate.

13 I suspect that their booming on a distant part of
 14 the mt was the sound which I heard the first night
 15 which was like very distant thunder--or the fall
 16 of a pile of lumber.

17 They did not fly or boom ~~{in thi}~~ where there was
 18 a cloud or fog--& ceased pretty early in the night
 19 They came up from the same quarter--the shaded rocks
 20 below--each night--2 of them--& left off
 21 booming about 8 o'clock. Whether they then
 22 ceased hunting or withdrew to another part of the
 23 mt I know not. Yet I heard one the 1st night
 24 at 11 1/2 Pm but as it had been a rainy day
 25 & did not clear up here till some time later in the
 26 night--it may have been compelled to do its hunting
 27 then. They began to boom again at 4 am
 28 (other birds at about 4 1/2) & ceased about
 29 4-20. By their color they are related to the
 30 gray rocks over which they flit & circle.

¹⁰⁴extra marks

¹⁰⁵bleedthrough here

1
 2 locust
 3 Heard a fine (in the sod) cricket--a dog-day locust¹⁰⁶
 4 once or twice--& a creaking grasshopper
 5 Saw 2 or 3 frogs--1 large R fontinalis
 6 in that rocky pool on the S. W side--where
 7 I saw the large spawn which I supposed to be bullfrog-
 8 spawn 2 years ago--but now think must have been
 9 R. fontinalis spawn--& there was a dark pollywog 1 inch
 10 long. This frog had a raised line on each side
 11 of back & was as large as a common bull frog.
 12 I also heard the note once of some familiar
 13 1 or 2
 14 large frog. The ^ smaller frogs which I saw elsewhere¹⁰⁷
 15 were perhaps the same
 16 There were a greater~~er~~ many visitors to
 17 the summit--both by the S & N (i.e the Jaffrey &
 18 Dublin paths) but they did not turn off from the
 19 beaten track. One noon when I was on the top--I counted
 20 40 men women & children around me{.} & more were con-
 21 stantly arriving while other were going. Certainly
 22 more than 100 ascended in a day-- When you
 23 got within 30 rods you saw them seated
 24 in a row along the gray parapets--like
 25 the inhabitants of a castle on a gala day{--}
 26 when
 27 & ^ you behold Monadnock's blue summit
 28 50 miles off in the horizon--you may imagine
 29 it covered with men women & children in dresses of
 30 all colors--like an observatory on a muster field.
 31 They appeared to be chiefly mechanics &
 32 farmers boys & girls from the neighboring towns

¹⁰⁶written above more neatly

¹⁰⁷"elsewhere" inserted

1

%61%

2

%Scale of 80 rods to an inch%¹⁰⁸

3

{drawing/map}

¹⁰⁸ When the journal ms. is held right side up for reading, this map legend and the map it describes appear upside down on the page. T obviously flipped the book around 180 degrees to draw the map. Oriented properly, the legend appears at the bottom of the map & page.

1 The rocky area--or summit
2 of the mt above the forest--which I
3 am describing is of an irregular form from
4 1 1/2 to 2 miles long N & S by 3/4 to 1 mile
5 wide at the widest part--in proportion
6 as you descend lower on the rocks.

7 There are 3 main spurs viz¹⁰⁹ the NE or chief
8 one toward Monadnock pond & the village of Dublin

9 The southerly to Swan's--& the Northerly
10 ¹¹⁰over which the Dublin path runs

11 These afford the 3 longest walks-- The first
12 is the longest--wildest & least frequented
13 & rises to the greatest height at a distance
14 from the central peak. The 2d affords
15 the broadest & smoothest walk-- The
16 3d is the highest of all at first--but
17 falls off directly.

18 There are also 2 lesser & lower spurs on the
19 ly
20 W^ side--are quite short toward Troy--by
21 which you might come up from that side--
22 The other yet lower, but large from N 75° W.

23 But above all, for walking,
24 there is an elevated rocky plateau, so to
25 call it--~~extending~~ extending to half a mile
26 E of the summit--or about 100 rods E of the
27 ravine. This slopes gently toward the S & E
28 by successive terraces of rock--& affords the
29 most amusing walking of any part of the
30 mt

¹⁰⁹inserted

¹¹⁰T indents this line, though it is not the beginning of a new paragraph

1 The most interesting precipices are on the¹¹¹
2 S side of the peak. The greatest abrupt-
3 ness of decent (from top to bottom) is on the
4 west side bet. the 2 lesser ravines.

5 The N. E. spur (of 2 principal summits beyond the
6 swamp) has the most dead spruce on it.

7 The handsome ponds near the mt are
8 a long pond chiefly in Jaffrey close under the
9 mt on the E--with a greatly swelling knoll
10 extending with it on the E side-- Monadnock
11 Pond in Dublin said to be very deep--about N. NE--
12 (Between the NE. spur & Dublin Village) A large
13 pond with a very white beach much further off in
14 Nelson about north--(One called it Breed's?)

15 Stone Pond N Westerly about as near as Monadnock
16 Pond- ¹¹²Also large ponds in Jaffrey--Ringe--
17 Troy--& many more further off--

18 The basis of my map was the
19 distance from the summit to the 2d camp--measured
20 very rudely by casting a stone before-- Pacing
21 the distance of an easy cast I found it about
22 10 rods--& 13 such stone's throw or 130
23 rods carried me to the camp. As I had the
24 course, from the summit & from the camp--
25 of the principal points, I could tell the rest
26 nearly enough. It was about 50 rods from
27 the summit to the ravine & 80 more to the
28 camp.

29 It was undoubtedly Saddleback mt which
30 I saw about S 85W--

¹¹¹No page number visible in right margin

¹¹²blotch or stray mark before "Also"

1 What was that elevated part of the
2 Green mts about N 50 W which one called
3 falsely Camel's {hump}?-- The next elevated
4 summit N of Saddleback.

5 It would evidently be a noble walk
6 from Watatic to Goffstown perchance, over
7 the Peterboro mts--along the very back bone
8 of this part of N.H. The most novel & interesting
9 walk that I can think of in¹¹³ these parts--

10 They who simply climb to the peak
11 of Monadnock have seen but little of
12 the mt. I came not to look off from it
13 but to look at it. The view of the
14 pinnacle itself from the plateau below
15 surpasses any view which you get from
16It is indispensable to see the top itself & the {sierra} of its out line from one side-- --
17 the summit. ^The great charm is not to
18 look off from a height but to walk over this
19 novel & wonderful rocky surface. Moreover
20 if you would enjoy the prospect--it
21 is methinks most interesting--when you
22 look from the edge of the plateau immediately
23 down into the valleys--or where the edge
24 of the lichen-clad rocks only 2 or 3 rdds
25 from you is seen as the lower frame of a
26 picture of great green fields lakes & woods--suggesting
27 a more stupendous precipice than exists. There
28 are much more surprising {effects} of this nature
29 along the edge of the plateau than on
30 the summit.

¹¹³poss written over text

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31

It is remarkable what haste the visitors make to get to the top of the mt & then look away from it.

N-ward¹¹⁴ you see Ascutney--& Kearsarge mts--& faintly the White mts--& others more NE. But above all--toward night--the Green mts

But what a study for rocks does this mt top afford. The rocks of the pinnacle have many regular nearly right angled slants to the SE covered with the dark brown (or olivaceous) umbilicaria {drawing} The rocks which you walk over are often not¹¹⁵ only worn smooth & slippery but grooved out as if with some huge rounded tool {drawing} or they are much oftener convex {drawing}

You see huge buttresses or walls put up by Titans--with true joints--only recently loosened by an earth quake as if ready to topple down--

Some of the lichen clad rocks are of a rude brick-loaf form or small cottage form--{drawing}

You see large boulders left just on the edge of the steep descent of the Plateau--commonly resting on a few small stones--as if the Titans were in the very act of transporting them when they were interrupted. Some left standing on their ends--& almost the only convenient rocks in whose {shade} you can sit

¹¹⁴poss "N. ward"

¹¹⁵written over text

1 sometimes.

2 Often you come to a long thin rock--

3 2 or 3 rods long which has the appearance

4 of having just been split into underpinning stone

5 perfectly straight edged & parallel pieces

6 & lying as it¹¹⁶ fell--ready for use--just

7 as the mason leaves it. Post-stones--door

8 There were evidences of recent motion--

9 stones &c. as well as ancient

10 I saw on the flat sloping surface of rock

11 a fresher white space--exactly the size

12 & form of a rock which was lying by it

13 & which had lately covered it. What had

14 upset it. There¹¹⁷ were many of these

15 whitish marks where the dead spruce

16 had lain, but was now decayed or gone.

17 The rocks were not only coarsely grooved

18 --but finely scratched¹¹⁸--from NW to SE

19 commonly about S 10 E (but bet

20 or by the true m. more yet NB Hitchcock p 387 calls the rock of Monadnock granite

21 5 & 20°. E. ^) & says the scratches are N & S nearly & very striking.

22 I could have steered myself in a fog by them. V 3 p forward

23 Piles of stones left as they were split ready

24 for the builder.

25 I saw one perfect triangular hog-trough

26 (except that it wanted one end--{drawing} & which{--})

27 would have been quite

28 portable & convenient in a farmer's

29 yard. The core 4 or 5 feet long, lay

30 one side

31 The rocks are very commonly--in terraces

32 with a smooth rounded edge to each--

¹¹⁶written over

¹¹⁷poss "there"

¹¹⁸T leaves "t" uncrossed

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31

The most remarkable of these terraces that I noticed was between the 2d camp & the summit. Say some 40 rds from the camp

These terraces were some 6 rds long & 6 to 10 feet wide{--}but the top slanting ~~a little~~ considerably back into the mt & they were about 4 or 5 feet high each--

{drawing} There were 4 such in succession here--running ~~I think~~ some S 30E ~~what~~ SE. The edges of these terraces, here & commonly, were rounded & grooved like the rocks at a waterfall--as if water & gravel had long washed over them.

Some rocks were shaped like huge dough nuts {drawing}-- The edges of cliffs were frequently lumpishly rounded covered with lichens--so that you could not stand near the edge--

The extreme {-} E & NE parts of the Plateau-- esp. near the little meadow--are the most interesting for the forms of rocks.

Sometimes you see where a huge oblong square stone has been taken out from the edge of a terrace--leaving a space which looks like a giants grave--unoccupied.

On the W side the summit the strata ran N & S & dipped to E {drawing} about 60° with the horizon

1 There were broad veins of white quartz
2 (sometimes 1 foot wide) running directly
3 many rods.

4 Near the camp there was a succession
5 of great rocks--their corners rounded
6 semicircularly--& grooved at the same
7 time--like the capital of a column
8 reversed--
9 {drawing}

10 ¹¹⁹The most rugged walking is¹²⁰ on the
11 steep westerly slope.

12 We had a great view, esp. after sunset
13 as it grew dark--of the sierra of the
14 summit's outline W of us. The teeth
15 of the sierra often turned back toward the
16 summit.-- When the rocks were uniformly
17 black in the shade {&} seen against the
18 twilight.

19 In Morse's Gazetteer 1797 it is said
20 "Its base is 5 miles in diameter N to S,
21 & 3 from E to W.-- -- --Its summit is
22 a bald rock." By the summit he
23 meant the very topmost part--which it
24 seems was always "a bald rock"

25 There are all over the rocky summit
26 peculiar yellowish gravelly spots--which
27 I called scars, commonly of an oval form

¹¹⁹Not indented--prob. part of same paragraph, but interrupted by drawing

¹²⁰written over "in"

1 Though there is little or no soil
2 upon the rocks--owing apparently to the
3 coolness, if not moisture--you have rather
4 the vegetation of ~~the~~ a swamp--than that
5 of sterile rocky ground below.

6 E.g. of the 6 prevailing trees & shrubs{.} low-blue berry--
7 --black spruce--lambkill--black choke berry--
8 wild holly--& viburnum nudum--all but the
9 first are characteristic of swampy & low ground--
10 of wet mosses
11 to say nothing of the commonness of ^ the 2 species
12 of cotton grass¹²¹ & some other plants of the swamp
13 & meadow--

14 Little¹²² meadows & swamps are scattered all
15 over the mtn upon & amid the rocks.

16 You are continually struck with the proximity
17 grass &
18 of ^ lichen clad rock--& mossy bog.¹²³

19 You tread alternately on wet moss into which
20 you sink--& dry lichen covered rocks--

21 You will be surprised to see the vegetation of a swamp
22 on a little shelf only a foot or 2 over--a
23 bog a foot wide with cotton grass waving
24 over it--in the midst of cladonia lichens
25 so dry as to burn like tinder.

26 The edges of the little swamps (if not their middle)
27 are commonly white with cotton grass.

28 The arenaria Groenlandica often belies its name
29 here--growing in wet places as often as in dry ones--
30 together with eriophorum.

31 One of the grandest views of the summit--
32 is from the E side of the central meadow of
33 the plateau which I called the Gulf--just
34 beneath the pinnacle on the E. {with} the
35 meadow in the foreground.

¹²¹stray marks after words

¹²²poss "little"

¹²³poss "bog--"

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32

Water stands in shallow pools--on almost every rocky shelf-- The largest pool of open water which I found was on the SW side of the summit--& was 4 rods long {X} 15 to 20 feet in width & a foot deep. {Wool} & cotton grass grew around it & there was a dark green moss & some mud at the bottom. There was a smaller similar pool on the next shelf above it. These were about the same size in¹²⁴ June & in Aug.¹²⁵ & ap. never dry up.

There was also the one in which I bathed near the N. E. little meadow.

I had a delicious bath there--though the water was warm--but there was a pleasant strong & drying wind--blowing over the ridge, & when I had bathed the rock felt like plush to my feet.

The cladonia lichens were so dry at midday--even the day after rain--that they served as tinder to kindle our fire--indeed we were some what troubled to prevent the fire from spreading even before sundown amid them--yet at night^--& morning when we got our supper & breakfast¹²⁶ they would not burn thus, having absorbed moisture-- They had then a cool {&} slightly damp feeling.

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

¹²⁴"i" written over "I"

¹²⁵poss "Aug--"

¹²⁶stray mark?

1 First, perhaps, looking up one would see a
2 small scud not more than a rod in diameter--
3 drifting just over the apex of the mt. In
4 a few minutes more a somewhat larger one
5 would suddenly make its appearance--& perhaps
6 strike the topmost rocks & invest them for
7 a moment--but as rapidly drift off NE
8 & disappear-- Looking into the S. W. sky which
9 was clear, we would see all at once a
10 small cloud or scud a rod in diameter beginning
11 to form 1/2 a mile from the summit--& as it came
12 on it--rapidly grew in a mysterious manner--
13 till it was 50 rods or more in diameter--&
14 draped and concealed for a few moments all
15 the summit--above us--& then passed off
16 & disappeared north eastward just as it had
17 come on. So that it appeared as if the
18 clouds had been attracted by the summit.
19 They also seemed to rise a little as they
20 approached it & endeavor to go over without
21 striking. I gave this account of it to myself.¹²⁷
22 They were not attracted to the summit--but
23 simply generated there & not elsewhere. There
24 would be a warm S. W. wind blowing--which
25 was full of moisture--alike over the mt
26 & all the rest of the country. The summit of
27 the mt being cool--this warm air began to
28 feel its influence at half a mile distance {&}
29 its moisture was rapidly condensed into a

¹²⁷poss "my self."

1
 2 small cloud--which expanded as it advanced--
 3 & evaporated again as it left the summit.
 4 This would go on ap. as the coolness of the
 5 mt increased¹²⁸--& generally the cloud or
 6 mist reached down as low as our camp--from
 7 time to time, in the night.

8 One evening as I was watching these small clouds
 9 forming & dissolving about the summit of our
 10 mt--the sun being just set--I cast my eyes
 11 toward the dim bluish outline of the Green mts
 12 in the clear red evening sky--& to my delight
 13 I detected exactly over the summit of Saddleback
 14 mt, some 60 miles distant, its own little
 15 cloud, shaped like an ~~umbre~~ parasol--&
 16 answering to that which capped our mt--
 17 though in this case it did not rest on the
 18 mt but was considerably above it--& all
 19 the rest of the west horizon for 40 miles
 20 was cloudless-- {drawing} I was convinced
 21 that it was the local cloud of that mt--
 22 because it was directly over the summit--was
 23 of small size & of umbrella form {answering} to the
 24 summit--& there was no other cloud to be
 25 seen in that horizon. It was a beautiful
 26 & serene object ~~like (a)~~ a sort of fortunate
 27 isle--like any other cloud in the sunset sky.

28 That the summit of this mt is
 29 cool--appears from the fact that the days
 30 which we spent there were remarkably

¹²⁸blotch obscuring "r" in "increased"

1 warm ones in the country below--& were
2 the common subject of conversation when we
3 came down--yet we had known nothing about
4 it--& went warmly clad with comfort {all}
5 the while, as we had not done immediately
6 before & did not after we descended. We
7 immediately perceived the difference as we
8 descended. It was warm enough for us on
9 the summit--& often in the sheltered SE
10 hollows too warm as we happened to be clad--
11 but on the summit--& ridges it chanced
12 that there was always wind--& in this wind
13 it was commonly cooler than we liked.

14 Also our water, which was evidently rain
15 water caught in the rocks, & retained by
16 the moss--was cool enough if it were
17 only in a little crevice under the shelter
18 of a rock--i.e. out of the sun.

19 Yet though it was thus cool--& there
20 was this scud or mist on the top more
21 or less every night--there was, as we
22 should say--no dew on the summit any
23 morning. The lichens blueberry bushes &c did
24 not feel wet--nor did they wet you in the
25 least however early you walked in them--

26 I was to observe the sunrise & picked blue-
27 berries every morning before sunrise--& saw no dew--
28 only once some minute dew drops on some low
29 grass tips & that was amid the wet moss of a
30 little bog-¹²⁹but the lambkill & blueberry

¹²⁹stray mark following dash

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31

bushes above it were not wet.{.}

Yet the Thursday when we left we found that though there was no dew on the summit--there was a very heavy dew in the pastures below--& our feet were & clothes were completely wet with it--as much as if we had stood in water.

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

The principal stream on the summit--(if not the only one--in the rocky portion described) was on the SE side between our 2 camps--though it did not distinctly show itself at present--except a little below our elevation. For the most part you could only see that water had flowed there between & under the rocks.

I fancied once or 2ce that it was warmer at 10 Pm than it was immediately after sunset.

The voices of those climbing the summit were heard remarkably far-- We heard much of the ordinary conversation of those climbing the peak above us 100 rds off--& we could hear those on the summit--or 130 rds off when they shouted. I heard a party of ladies & gentlemen laughing & talking there in the night--(they were camping

1 there) though I did not hear what they said.%)%

2 We heard, or imagined that we heard
3 from time to time, as we lay in our camp %by%
4 day--an occasional {chinking} or clinking sound
5 as if made by one stone on another.

6 In clear weather, in going from one
7 part of the summit to another--it would be
8 most convenient to steer by distant objects--
9 as towns or mts or lakes--rather than by features
10 of the summit itself--since the former are most
11 easily recognized--and almost always in sight.

12 I saw what I took to be a thistle down
13 going low over the summit--& might have caught
14 it--though I was no thistle on the mt top--
15 nor any other plant from which this could have
16 come--(I have no doubt it was a thistle by its appearance
17 & the season). It has evidently come up from
18 the country below. This shows that it may carry its
19 seeds to higher regions than it inhabits--&
20 it suggests how the seeds of some ~~other~~ mt
21 plants, as the solidago thyrsoidea may be
22 conveyed from mt to mt-- Also other solidago{--}
23 asters--Epilobiums--willows &c

24 The descent through the woods (from our
25 1st camp--to the site of the shanty--) is from ~~13/~~ 1/3
26 to 1/2 mile wide-- You then come to the rasp-
27 berry & fern-scented region. There were
28 some raspberries still left but they were fast dropping
29 off.

30 There was a grand view of the

1
2 mt from just above the pond--some 2 miles
3 from Troy. The varying outline of a mt
4 is due to the crest of different spurs, as seen
5 from different sides-- Even a small spur
6 if you are near, may conceal a much larger
7 one--& give its own outline to the mt. &
8 at the same time one which extends directly
9 toward you is not noticed at all, however im-
10 portant--though as you travel round the
11 mt. this may gradually come into view--&
12 finally its crest may be one half or more
13 of the outline presented.
14 partly
15 It may ^ account for the peaked or pyramidal
16 for of mts--that one crest may be seen
17 through the gaps of another & so fill up the
18 {-----} line--
19
20 Think I saw Leersia or cut grass in bloom in Troy //
21 I carried on this excursion the following
22 articles--viz (beside what I wore)
23 1 shirt
24 1 pair socks
25 2 Pocket {Hdkerchs¹³⁰}--
26 1 thick waistcoat
27 1 Flannel shirt--(had no occasion to use it)
28 Ind. Rubber coat
29 3 bosoms
30 Towel & soap

¹³⁰prob shorthand for "handkerchiefs"

1 Pins needles thread
 2 A Blanket (Would have been more convenient if stitched up
 3 in the form of a bag.)
 4 + Cap for the night
 5 Map & compass
 6 Spy-glass & microscope & tape
 7 Saw & hatchet
 8 blotting
 9 Plant book & ^ paper
 10 Paper & stamps
 11 Botany
 12 Insect & lichen boxes.
 13 Jackknife
 14 Matches
 15 Waste paper & twine
 16 Iron spoon & Pint dipper with handle
 17 {~~Knapsack~~} All in a knapsack
 18 Umbrella.
 19 NB--add to the above next time a small bag--which may be stuffed
 20 with moss or the like for a pillow.
 21 For Provision for one--%6 days%
 22 Carried {.} 2 1/2 lbs of saltbeef & tongue ¹³¹(Take on salt beef next time lbs
 23 2 to 3 lbs
 24 18 hard boiled eggs omit eggs--
 25 2 1/2 lbs sugar & a little salt (2 lbs of sugar would have done
 26 About 1/4 lb of tea (2/3 as much would have done
 27 2 lbs hard bread
 28 (The right amt of
 29 1/2 loaf home made bread & a piece of cake)bread--but might have
 30)taken more home made--
 31 (& more solid sweet cake.
 32 NB--carry salt(¹³²or some of it) in a wafer box--
 33 Also some sugar in a small box

¹³¹second list written in left margin, separated by parenthesis-like lines

¹³²open parenthesis written over "in"

1
 2N. B. ¹³³Observe next time the source of the stream which
 3 crosses the path
 4 What species of swallow flies over mt.
 5 What the grass which gives the pastures a yellowish
 6 color--seen from the summit--
 7 %v Aug 26 & 28--Sep. 1st%
 8 The morning would probably never be ushered in
 9 there by the chipping of the chip-bird--but
 10 that of the F. hiemalis instead--a dry hard
 11 occasional chirp more in harmony with the rocks--
 12 There you do not hear--the link of the bobolink--
 13 the chatter of red-wings--& c. b. birds, the¹³⁴
 14 wood-pewee--the twitter of the King¹³⁵-bird--the
 15 half strains of the vireo--the passing gold-finch
 16 or the occasional plaintive note of the blue¹³⁶ bird
 17 --all which are now commonly heard in the low lands.
 18 That area is literally a chaos--
 19 an example of what the earth was before it was
 20 finished

¹³³T indents every line of this paragraph

¹³⁴poss "The"

¹³⁵poss "king"

¹³⁶poss stray mark after "blue"

1 Aug. 9th
2 Do I not hear the mole-cricket? at night.
3 //
4 Aug 10th 60
5 2 Pm air 84°
6 Boiling spring this Pm 46°--Bristers 49°
7 Or where there is little or no surface water
8 the same as in spring.
9 Walden is at surface 80° (air over it 76)
10 Aster dumosus & Penny royal out how long?
11 Sand cherry is {well} ripe (some of it) & tolerable--
12 better than the red cherry or choke-cherry.
13 Juncus paradoxus that large & late juncus
14 //
15 (tailed) as in Hubs {close} & on island above monument
16 & in Great meadows--say 10{'} days.
17 Saw yesterday a Fitzwilliam from the RR--
18 a pond covered with white lilies uniformly
19 about 1/2 the size of ours--!
20 Saw this eve behind a picture in R. W. E's
21 dining room the hoary bat--first heard it
22 fluttering at dusk--it having hung there all day.
23 It rear parts covered with a fine hoary down.
24 Aug 11th
25 // Panicum capillaris how long?
26 // Cyperus strigosus how long?
27 Aug 12--
28 The river bank is past height, the button bush
29 //
30 is not common now, though the clethra is in p.
31 The black willow hardly ceases to shed its down when
32 it looks yellowish¹³⁷
33 Setaria glauca some days
34 //
35 Elymus virginicus " "

¹³⁷stray mark after "yellowish"

1 %81%

2 Andropogon furcatus (in meadow) how long? //

3 (prob ~~after~~ before scoparius)

4 Zizania several days. //

5 River at 5 Pm 3 3/4 in. below S. L. //

6 Panicum glabrum({:}) not sanguinale?--our common)

7 how long? The upper glume equals the flower--

8 yet it has many spikes.

9 Aug. 13th--60

10 Pm. to Great meadow--& Gowing's swamp

11 Purple grass¹³⁸ (E Pectinacea) 2 or 3 days //

12 E. capillaris--say as much-- //

13 Andropogon scoparius a day or 2-- //

14 Calamagrostis coarctata not quite

15 Glyceria obtusa well out--say several days. //

16 Some of the little cranberries at Gowing's

17 swamp--appear to have been frost bitten. //

18 Also the blue-eyed grass--which is now black-

19 topped.

20 Hear the steady shrill of the Alder¹³⁹ locust-- //

21 Rains this am--windy in pm

22 Aug 14th--heavy rain //

23 Aug 15--Fair weather

24 see a blue-heron. //

25 Aug 16--

26 2 Pm. River about 10 1/2 inches //

27 above S. L.

28 Ap. the Canada plum beg. to be ripe about

29 the 10th //

¹³⁸stray mark after "grass"

¹³⁹poss "alder"

1 Aug. 17th 60

2 We have cooler nights of late--

3 //

4 See at Pout's nest 2 solitary tattlers.

5 //

6 as I have seen them about the muddy shore

7 of Gourgas pond hole--& in the Great

8 meadow pools. They seem to like a

9 muddier {shoor} than the Peet-weet

10 Hear a whipporwill sing tonight.

11 //

12 Aug 18{th}--

13 The note of the wood pewee sounds

14 prominent of late.

15 Aug. 19th

16 Examine now more at length that

17 smooth--turnip scented Brassica--which

18 is a pest in some grain fields-- Formerly

19 in Stows land--this year in Warrens on the

20 Walden road-- To day I see it in Minot

21 Pratts--with the wild radish--which is

22 a paler yellow{--}& a rougher plant.

23 I thought it before the B. campestris--but

24 %that%

25 Persoon puts it¹⁴⁰ under B's with siliquis

26 tetraedris which this is not--but for

27 aught that appears it agrees with his B.

28 // napus closely allied{.} ie wild rape Elliot

29 speaks of this as introduced here-- V. P. O.

30 Report for 53 & Vegetable Kingdom p. 179

31 8 &

32 The B. campestris also is called rape. %V Sep 10%

33 Leersia (cut grass) abundantly out

34 //

35 ap. several days

¹⁴⁰"it" crossed out in pencil

1 When I merely sunk the thermometer &
2 pulled it up rapidly--it stood 73 1/2° though
3 not in exactly the same place--say 2 rods off.

4 When I used to pick the berries for dinner
5 on the E-quarter hills--I did not eat one till I
6 had done--for going a-berrying implies more
7 things than eating the berries. They at home
8 got only the pudding. I got the forenoon
9 out of doors, and the appetite for the pudding.

10 It is true as is said, that we have
11 as good a right to make berries private
12 property, as to make grass & trees--such--
13 But what I chiefly regret is the, in
14 effect, dog in the manger result--

15 For at the same time that we exclude
16 mankind from gathering berries in our field
17 --we exclude them from gathering health
18 & happiness & inspiration--& a hundred other
19 far finer & nobler fruits than berries, which yet
20 we shall not gather ourselves there--nor
21 even carry to market{.} We strike only one
22 more blow at a simple & wholesome relation¹⁴²
23 to nature. As long as the berries are free
24 to all comers they are beautiful though they
25 may be few & small--but tell me that
26 in a blue-berry swamp which somebody has
27 hired & I shall not want even to look at it.

28 I¹⁴³ laying claim for the first time to the

¹⁴²bleedthrough under word

¹⁴³T prob means "In" here, but no "n" visible

1
 2 spontaneous fruit of our pasture--we are
 3 accordingly aware of a little meanness--
 4 inevitably--& the gay berry party whom
 5 look down on &
 6 we ~~expel~~ turn away ~~com~~ naturally ^ despise
 7 us--~~the party of children in the hay~~
 8 ~~rigging who have come to have a good time~~
 9 ~~merely~~. If it were left to the berries to say who
 10 should have them, is it not likely that they would pre-
 11 fer to be gathered by the party of children
 12 //
 13 in the hay rigging who have come to have
 14 a good time merely.

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

21 This suggests what origin & foundation many
 22 of our laws & institutions have--& I do not
 23 say this by way of complaining of this particular
 24 custom. Not that I love Caesar¹⁴⁴ less,
 25 but Rome¹⁴⁵ more.

26 Yes, and a potato field is a rich
 27 sight to me, even when the vines are half
 28 decayed & blackened (& their decaying scent
 29 fills the air)--though unsightly to many--
 30 for it speaks then more loudly & distinctly
 31 of potatoes than ever-- I see their weather
 32 beaten ~~parts~~ brows peeping out of the hills

¹⁴⁴T starts to write "Rome" here, but writes "Caesar" over it

¹⁴⁵"R" written over "C"

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32

Sorghum nutans, well out (behind the birch)
 how long?-- Paspalum do--
 The recent heavy rains have washed
 away the bank here considerably--& it looks
 & smells more mouldy with human relics
 than ever-- I therefore find myself inevitably exploring
 it. On the edge of the Ravine, whose be-
 ginning I witnessed, one foot beneath the surface--
 & just over{--}a layer some 3 inches thick of pure
 shells & ashes--a gray white line on the
 face of the cliff--I find several pieces of
 Ind. pottery with a rude ornament on it--
 not much more red than the earth itself.
 Looking farther I find more fragments which
 have been washed down the ^{sandy} ^ slope--in a stream
 as far as 10 feet--I find in all 31 pieces.
 Averaging an inch in diameter & about
 several
 1/3 of an inch thick. ~~Many~~ of them made
 part of the upper edge of the vessel--
 & have a rude ornament encircling them
 in 3 rows, as if pricked with a stick in the
 soft clay--& also another line on the narrow
 edge itself-- At first I thought to match
 the pieces again, like a geographical puzzle,
 but I did not find that any 2 belonged to-
 gether. The vessel could have been quite
 large & I have not {got} nearly all of it.
 It appears to have been an impure clay--with much
 sand & gravel in it--& I think a little pounded

//
//

1 shell-- It is very unequal thickness--some of
2 the unadorned pieces (prob. the bottom) being 1/2
3 inch thick--while near the edge it is not more
4 than 1/4 of an inch thick. There was {under}
5 this spot & under the layer of shells a
6 manifest hollowness in the ground--not
7 yet filled up. I find many small pieces of
8 bone in the soil of this bank--prob. of
9 animals the Ind. ate.

10 In another part of the bank in the midst
11 of a much larger heap of shells which
12 has been exposed--I found a delicate stone
13 tool of this form & size--of a
14 {drawing}¹⁴⁶
15 soft slate stone. It is very thin & sharp
16 on each side{s} edge--& in the middle is not
17 more than 1/8 inch thick-- I suspect
18 that this was used to open clams with.

¹⁴⁶drawing of tool takes up approx. 1/3 of the page

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33

It is curious, that I had expected to find
as much as this--& in this very spot too
before I reached it (I mean the {pot})--

Indeed I never find a remarkable Ind. relic,
and I find a good many, but I have
first divined its existence, & planned the
discovery of it. Frequently I have told my-
self distinctly what it was to be before I
found it.

The river is 15 3/4 inch. above¹⁴⁷ SL. //

& about the same the 25th

Aug. 24--60

This & yesterday--very foggy--dog dayish //
days-- Yesterday the fog late till 9 or 10
& today in the Pm it amounts to a considerable
drizzling rain.

Pm to Walden to get its temperature
the 23d it was 78
The air is only 66 (in the mizzling rain^) the
(the 23d also 75{°})
water at top 75°^-- What¹⁴⁸ I had sunk to the
bottom in the middle where a hundred feet deep
by my line--left there 1/2 hour then pulled
up & poured into a quart dipper--stood at
53° %v 28th%

I tried the same experiment yesterday--
but then in my haste was uncertain whether
it was not 51°--certain that a little later it
was 54°-- So 53° it must be for the
present. I may have been 2 or more minutes
pulling up the line so as to prevent its
snarling-- Therefore I think the water must

¹⁴⁷stray mark after word

¹⁴⁸poss "When"

1 have acquired a temperature 2 or 3 degrees
2 higher than it had at the bottom by the
3 time I tried it. So it appears that
4 the bottom of walden{--}has in fact the
5 temperature of a genuine & cold spring--
6 or prob. is {—} the ~~average~~ same temperature
7 with the average mean temp. of the earth--
8 & I suspect, the same all the year--
9 This shows that springs need not come from
10 a very great depth in order to be cold.
11 What various temperatures then the fishes
12 of this pond can enjoy!¹⁴⁹ They require¹⁵⁰ no
13 other refrigrerator than their deeps afford.
14 The can (~~sink t~~) in a few moments sink
15 to winter or rise to summer.

16 Walden then must be included among the springs
17 but it is one which has no outlet--is a well
18 rather. It reaches down to where the temperature
19 of the earth is {un}changing. It is not a
20 superficial pond--not in the mere skin of
21 the earth. It goes deeper--

22 How much this varied temperature must have
23 to do with the distribution of the fishes¹⁵¹ in it.
24 The few trout--must oftenest go down
25 below in summer.

26 At the bottom of the deep cove I
27 see much black birch--& red maple
28 just sprung up & their seeds have evidently
29 been drifted to this shore--the little birches

¹⁴⁹poss "?"

¹⁵⁰blotch on word

¹⁵¹blotch after word

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29

are already fragrant.

Aug. 25--60

2 Pm to {c} Clam Shell.

See a large hen hawk sailing over Hub's meadow & Clam shell--soaring at last very high--& toward the N. At last it returns S. ward at that height impelling itself steadily & swiftly forward with its wings set in this wise {drawing}¹⁵² i.e. {~~as it~~} more curved or as it were trailing behind{.}--without apparent motion. It thus moves half a mile directly.

The front rank polygonum is ap in p. low solid--of a pinkish rose color--

Notice the small botrychium's leaf--

//

As I row by--see a green bittern near by standing erect on Monroe's boat. Finding that it is observed{--} it draws in its head & looks to conceal itself. When it flies it seems to have no tail. It allowed me to approach so near--ap. being deceived by some tame ducks there.

Aug 26--60

2 Pm to White Pond--

The Leersia or cut grass in the old pad ditch by path beyond Hub's grove-- ~~To{ }~~

//

As I cross the upland sproutland S of Ledum swamp I see that the fine sedge there is half withered & brown & it is too late for that cheerful yellow gleam.

//

Thread my way thro' the blueberry swamp

¹⁵²drawing continues onto next line

1 in front of Martial Miles'.

2 The high blue berries far above your head in
3 the shade of the swamp--retain their freshness &
4 coolness a long time. Little blue sacks full of
5 swampy nectar & ambrosia commingled--like schnaps
6 or what not that you break with your teeth--
7 Is not this the origin of the German name
8 as given by Gerard?

9 But there is far the greatest show of
10 choke berries there--rich to see-- I wade &
11 press my way thro' endless thickets of these
12 untasted berries--their ^{lower} ^ leaves now fast
13 reddening-- Yet they have an agreeable
14 juice{;} though the pulp may be rejected--
15 & perhaps they might be made into wine.

17 The shrilling of the alder locust is the
18 solder that welds these autumn days to-
19 gether. All bushes (arbusta) resound with
20 their song, & you wade up to your ears in
21 it. Methinks the burden of their song is
22 the countless harvests of the year--berries--grain
23 & other fruits.

24 I am interested by the little ridge or cliff of
25 foam which the breeze has raised along
26 the White Pond shore--the westerly breeze causing
27 the wavelets to lapse on the shore & mix the water
28 with the air gradually. Though {this} is named
29 white pond from the whiteness of its Sandy
30 shore, the line of foam is infinitely whiter--
31 far whiter than any sand

1
 2 This reminds me how far a white pond¹⁵³
 3 shore--i.e the sand--maybe seen-- I saw
 4 from Monadnock--the N shore of a large
 5 pond in Nelson which was some 8 miles N
 6 of the map,--very distinct to every one who looked
 7 that way. Perhaps in such cases a stronger light is reflected
 8 from the water on to the shore--
 9 The highest ridge of foam is where it is held or
 10 retain & so built up gradually behind some
 11 brush or log on the shore--by additions below--
 12 into a little cliff--like a sponge. In other
 13 places it is it is rolled like a muff. It is all
 14 light & trembling in the air.
 15 Thus we are amused with foam--a hybrid between
 16 2 elements-- A breeze comes & gradually mingles
 17 some of the water with the air. It is as
 18 it were the aspiration of the pond to soar
 19 into the air. The debatable ground between 2
 20 oceans--the earth or shore being only the
 21 point of resistance--where they are held to mingle.
 22 See now-a-days the pretty little
 23 cast steel soap-galls on the shrub oaks-- //
 24 Their figure is like the Ind. girdle of triangular
 25 points {drawing} also other galls yellowish & red
 26 on dif. sides--
 27 The pussy clover heads were most interesting-- //
 28 large & puffy--say 10 days ago.
 29 I notice Milk weed in a hollow in the
 30 field by the cove at Whit Pond{,} as if the
 31 seed had settled there, owing {to} the lull of
 32 the wind.

¹⁵³poss "p" written over "P"

1 It is remarkable how commonly you see
2 the thistle down sailing just over water
3 (as I do after this--the 2d of Sep. at Walden.)
4 I see there i.e. at Walden--at 5 Pm. Sep 2d
5 many seedless thistle downs sailing about
6 a foot above the water--& some in it,
7 As if there was a current {~~mor~~} just above
8 the surface which prevents their falling or
9 rising. They are probably wafted to the water
10 because there is more air over water.

11 Aug 27th

12 Pm to¹⁵⁴ Ministerial Swamp

13 Clear weather within a day or 2 after the
14 //
15 thick dog-days. The nights have been
16 cooler of late--but the heat of the sun
17 by day has been more local & palpable
18 as it were. It is as if the sun touched your
19 shoulder with a hot hand--while there
20 are cool veins in the air.

21 That is I am from time to time surprised &
22 oppressed by a melting heat on my back in the
23 sun--though I am sure of a greater general
24 coolness-- The heat is less like that of an
25 apartment equally warmed--& more like
26 that a red hot iron carried about & which
27 you occasionally come near.

28 See one of the shrilling green alder
29 locusts on the under side of a grape leaf.

¹⁵⁴long leading descender to the word "to" may be an underline stroke for "Pm"

1 & still surrounding darkness. Indeed the
2 bright sun light was at this angle reflected
3 from the water at the E end, (while I in
4 the middle was in the shade of the E woods)
5 up under the verdure of the bushes &
6 trees on the shore & on Pine Hill--esp. to
7 the tender under sides & to the lower leaves not
8 often lit up-- Thus a double amount of
9 light fell on them--& the most vivid &
10 --varied shades of green were revealed. I never
11 saw such a green glow before. The outline
12 of each shrub & tree was a more or less distinct
13 downy or silvery crescent, where the light was
14 reflected from the under side of the moist downy or
15 newest leaves--as I should not have seen it
16 at midday--either because the light {fell}
17 more on the under sides of the leaves, being
18 so horizontal & also reflected upward--or because
19 the leaves stood more erect at this hour
20 & after a ^{cloudy} ~~rainy~~ day--or for both reasons.

22 The lit water at the E. end was invisible to
23 me--or no more than a line-- ~~when the~~
24 ~~sun~~ but the shore itself was a very distinct
25 whitish line. When the sun fell lower, &
26 the sunlight no longer fell on the pond--the
27 green blaze of the hill side was at once very
28 much diminished--because the light was
29 no longer reflected upward to it.

1
 2 At sunset the air over the pond is
 3 62+ the water at the top 74°--poured
 4 from a stoppled bottle which lay at the
 5 bottom where 100 ft deep 20 or 30 minutes 55°
 6 (& the same when drawn up in an open bottle which lay
 7 5 minutes at the bottom.) In an open bottle
 8 drawn up from about 50 feet depth (there) or more
 9 after staying there 5 minutes--63° This about
 10 1/2 the whole diff. bet the top & bottom--so that
 11 the temp. seems to fall regularly as you descend--
 12 of
 13 at the rate ^ about {-} 1° to 5 feet.

14 When I let the stoppled bottle down quickly--the
 15 cork was forced out--before it got to the bottom{--}
 16 when the water drawn up stood at 66° Hence it
 17 seemed to be owing to the rising of the warmer water &
 18 air in the bottle.

19 5 minutes with the open bottle at the bottom
 20 was as good as 20 with it stoppled.

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

27 The Lycopod. inundatum common by Harring- //
 28 ton's mudhole Ministerial swamp.

29 Hear the night warbler & whippoorwill-- //

30 There was no prolonged melody //

31 There was no prolonged melody
 32 of birds on the summit of Monadnock--

1 --They for the most part emitted sounds
2 there more in harmony with the silent
3 rocks--a faint chipping or chinking--often
4 somewhat as of 2 stones struck together.

5 Aug 30--

6 Surveying Minotts Land.

7 Am surprised to find on his hard land--where
8 he once raised potatoes, the hairy huckle-
9 // berry--which before I had seen in swamps only--
10 Here too they are more edible not so in-
11 sipid--yet not quite edible generally. They
12 are improved, you would say, by the firmer ground.
13 The berries are in longer racemes or clusters than
14 any of our huckleberries-- They are the
15 prevailing berry all over this field-- They
16 are oblong & black--& the thick shaggy
17 feeling coats left in the mouth--are far
18 from agreeable to the palate. Are now
19 in p.

21 Also find {in} one of his ditches where peat
22 was dug (or mud) the Lemna polyrrhiza
23 // not found in C. before--& said not to blossom
24 in this country. I found it at Pushaw

26 // Also the Muhlenbergia glomerata near the Lemna
27 or SE of it.

28 The hairy huckleberry &
29 Muhlenbergia--I think grow here still--be-
30 cause Minott is an old fashioned man &
31 has not scrubbed up & improved his land

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30

as many or most have. It is in a wilder &{-}
more primitive condition-- The very huckle¹⁵⁵
berries are shaggy there. There was only one
straight side to his land & that I cut through
a dense swamp-- The fences are all meandering
just as the{y} were at least in 1746 when it
was described.

The lemna reminds me strongly of that
greenish or yellowish scum which I see
mantling some barn-yard pools. It makes
the same impression on the eye at a little distance--
You would say it was the next higher stage
of vegetation--the smallest of pads 1/6 of
an inch in diameter & like the white lily pad
crimson beneath. It completely covers 2 or
3 ditches under the edge of the wood there
except where a frog has jumped in & revealed
the dark water--& maybe there rests, his
green snout concealed amid it. But it
soon closes over him again when he has
dived. These minute green scales completely
cover some ditches except where a careless
frog has ~~lept~~ leapt in or swam across & rent
the veil.

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

//

¹⁵⁵poss T places hyphen in line above

1 Sep. 1st--60
2 Pm to Walden--
3 Saw a fish-hawk yesterday up the Assabet
4 //
5 In one position it flew just like a swallow
6 --of the same form as it flew.
7 We could not judge correctly of
8 distances on the mt--but greatly ex-
9 aggerated them. That surface was
10 so novel,--suggested so many thoughts,--
11 & also so uneven, {a} few steps sufficing
12 to conceal the last ground, {as} if it were
13 half mile away, that we {would} have
14 an impression as if we had travelled a mile
15 when we had come only 40 rods.
16 We no longer thought & reasoned as in the
17 plain.
18 Now see many birds about E. Hubbs. elder
19 hedge--bobolinks--king birds--pig. woodpeckers
20 & not elsewhere:
21 Many pine stipules fallen yesterday{.}--also
22 //
23 see them on Walden to-day.
24 Hear that F. Hayden ~~say~~ saw & heard
25 //geese a fortnight ago!
26 I see within an¹⁵⁶ ~~stum~~ oak stump ~~by~~ on
27 the shore of Walden tomato plants
28 6 or 8 inches high--as I found them
29 formerly about this pond¹⁵⁷ in a dif. place.
30 Since they do not bear fruit--the seed
31 must be annually brought here by birds

¹⁵⁶the "n" in "an" inserted

¹⁵⁷poss colon or stray marks after "pond"

1
2 yet I do not see them pecking the tomatoes
3 in our gardens--& this is a mile & a half
4 from the village & 1/2 mile from the nearest house
5 yesterday
6 in Lincoln. River about 8 inch above S. L.

//

7 We are so accustomed to see
8 as a matter
9 of course
10 another forest spring up immediately^
11 whether from the stump of from the seed
12 ^when a forest is cut down, {%^%} never
13 troubling about the succession, that
14 %hardly%
15 we scarcely¹⁵⁸ associate the seed with the
16 tree--& do not anticipate the time
17 when this regular succession will cease
18 --and we shall be obliged to plant,
19 as they do in all old countries. The
20 %Europe%
21 planters of England¹⁵⁹ & the continent of
22 Europe must have a very different
23 --a much correcter notion of the value
24 of the seed of forest trees than we.

25 To speak generally, they know that the
26 forest trees spring from seeds, as we do
27 of apples & pears, but we know only that
28 they come out of the earth. %V 2 ps forward%

29 See how artfully the seed of a cherry
30 is placed in order that a bird may be
31 compelled¹⁶⁰ to transport it. It is placed
32 in the very midst of a tempting pericarp
33 so that the creature that would devour
34 a cherry must take a stone into its mouth
35 The bird is bribed with the pericarp to
36 take the stone with it & do this little service

¹⁵⁸"scarcely" cancelled out in pencil and replaced above

¹⁵⁹a pencil line begins vertically to the left of "England" and comes down to underline the rest of the line, thus indicating the replacement of the phrase with the pencilled word.

¹⁶⁰stray marks about "compelled"

1 for nature. Cherries are especially
2 birds food--& many kinds are called
3 birds' cherry--& unless we plant the
4 sees occasionally, I shall think the
5 birds have the best right to them.

6 Thus a birds wing is added to the
7 cherry stone--which was wingless--& it
8 does not wait for winds to transport it.
9 If you ever ate a cherry--& did not
10 make two bites of it, you must have per-
11 ceived it--there it is, right in
12 the midst of the luscious morsel--
13 %large%
14 --an ^ earthy residuum left on the
15 tongue-- And some wild men &
16 children instinctively swallow it, like
17 the birds, as the shortest was to get
18 rid of it. And the consequence is
19 that cherries not only grow here but
20 there--& I know of some handsome young
21 ~~wild~~ English cherries growing naturally in
22 our woods, which I think of transplant-
23 ing back again to my garden.

24 If the seed had been placed in a leaf or at
25 the root it would not have got transported
26 thus. Consider how many seeds of
27 plants we take into our mouths. Even
28 stones as big as peas, a dozen at once--

1
 2 The treatment of forests is a very
 3 different question to us & to the English.
 4 There is a great difference between replanting
 5 the cleared {cl} land from the superabundance
 6 of seed which is produced in the forest around
 7 it, which will soon be done by nature
 8 alone if we do not interfere--and the
 9 planting of land the greater part of which
 10 has been cleared for more than a thousand
 11 years.

12 Sep 2d

13 Pm to Annursnack

14 S. nemoralis ap. in p. & S. stricta-- The former //
 15 covers A Hosmers secluded turtle field near the
 16 bridge--together with johnswort now merely lingering //

17 Sep 3d Pm--

18 To Bateman's Pond. 2 Pm River 6 7/8 above //

19 Here is a beautiful & perhaps first de- //
 20 cidedly autumnal day--a cloudless sky--
 21 a clear air--with may be veins of
 22 coolness. As you look toward the sun
 23 the¹⁶¹ shines more than the spring--the

24 The dense fresh green grass which has
 25 sprung up since it was mowed--on most
 26 ground--reflects a blaze of light--as if
 27 it were morning all the day-- The meads
 28 slopes are enamelled with it--for
 29 there has been no drought nor withering
 30 We see the smokes of burnings on va- //

¹⁶¹does T mean "that"?

1 I see some masses of it overhanging the
2 deep water--& completely concealing the
3 bush that supports them, which are
4 as rich a ~~fit~~ sight as any flower we
5 have--little terraces of contiguous corymbs--
6 --like mignonette?
7 ^ Also the dodder is more revealed
8 also draping the brink over the water.
9 The mikania is sometimes looped¹⁶⁴ 7
10 or 8 feet high to a tree above the
11 bushes--a manifest vine, with
12 its light colored corymbs at intervals
13 See the little dippers {back}.
14 //
15 Did I not see a marsh-hawk in
16 //
17 imperfect plumage? quite brown with
18 some white midway the wings & tips
19 of wings black?
20 What further adds to the beauty of the
21 //bank--is the hibiscus in p. & the
22 //Great¹⁶⁵ Bidens
23 Having walked through a quantity of
24 desmodium¹⁶⁶ under Ball's-hills by the
25 shore there (Marilandicum or rigidum)
26 we found our pants covered with its
27 seeds to a remarkable & amusing degree
28 --these green scales ~~thick~~ closely covering
29 & greening my legs reminded me of
30 the lemna on a ditch. It amounted
31 to a kind of coat of mail-- It was the
32 event of our walk--& we were proud

¹⁶⁴stray mark?

¹⁶⁵poss "great"

¹⁶⁶poss "D" written over "d"

1
 2 to wear their badge, as if he were the
 3 most distinguished who had the most
 4 on his clothes. My companion expressed
 5 a certain superstitious feeling f about
 6 it, for he said he thought it would
 7 not be right to walk intentionally
 8 amid the desmodium so as to get more
 9 of the ticks on us--nor yet to pick them
 10 off--but they must be carried about
 11 till they are rubbed off accidentally¹⁶⁷-- I
 12 saw that nature's design was furthered
 13 even by ~~the~~ his superstition. %6 &%
 14 %v sep 7th {g} 6 ps forward%
 15 Sep 8th to Lowell via Boston //
 16 Rainy day--
 17 Pursh's Brassica Napus is "radice caules-
 18 cente fusiformi, foliis laevibus, superioribus
 19 cordato-lanceolatis amplexicaulibus, inferiori-
 20 bus lyratis dentatis Frequently found
 21 wild. The lower leaves of mine are considerably bristly
 22 Sowerby's Botany at Cam. says of B. campestris
 23 "Pods up right, cylindrical, or very obscure-
 24 ¹⁶⁸ly quadrangular, veiny, the ~~s{li}~~ seeds slightly
 25 projecting, the beak awl-shaped, striated,
 26 square at its base"--
 27 B. napus. "Pod on a slender stalk,
 28 spreading, round, beaded, with an angular
 29 point." Mine is ap B. napus
 30 --judging from pods--for the lower leaves
 31 are all eaten. V. young plants in spring. V back
 32 %{Sep 9th 11 ps forward}% Aug. 19th

¹⁶⁷T corrects himself from "accidently"

¹⁶⁸stray mark before "ly"

1 %11th%
2 Sep 12¹⁶⁹--60

3 Geo. Melvin came to tell me this
4 am, that a strange animal ~~had~~
5 was killed on Sunday, the¹⁷⁰ 9th, near the
6 north line of the town--& it was not
7 known certainly what it was. From
8 his description I judged it to be a
9 Canada lynx--

10 In the Pm I went to see it{--}
11 It was killed on Sunday¹⁷¹ morning by
12 John Quincy Adams, who lives in Carlisle
13 about 1/2 mile (or less) from the Concord
14 line--on the Carlisle road.

15 Some weeks ago a little girl
16 named Buttrick, who was huckleberrying
17 near where the Lynx was killed, was
18 frightened by a wild animal leaping
19 out of the bushes near her--over her
20 as she said & bounding off-- But
21 no one then regarded her story.

22 Also a Mr Grimes who lives in Concord
23 just on the line--tells me that
24 some month{s} ago, he heard from
25 loud
26 his {house} the ^ cry of an animal
27 in the woods northward--& told his
28 wife that if he were in Canada¹⁷² he
29 should say it was a Bob-tailed cat.
30 He had lived 7 years in Canada

¹⁶⁹"12" crossed out in pencil

¹⁷⁰"the" inserted

¹⁷¹poss "Suday"

¹⁷²bleedthrough before "he"

1 It was now skinned & the skin
2 stuffed with hay--& the skull had been
3 boiled in order to be put into the head.
4 I measured the stuffed skin carefully--
5 From the forehead (the now pointing down)
6 to end of tail 3 feet 4 1/2
7 Tail stout &, black at the abrupt end,-- --5 inches
8 Extreme length from fore paws to hind paws-- --4 feet 8 inches
9 when stretched out--the skin being stiff
10 They said it measured 5 feet before it was skinned
11 {whic} is quite likely--
12 Forehead to extremity of hind feet 50 1/2 inche{s}
13 It stood, as nearly as I could measure,
14 holding it up--19 to 20 inches high--from
15 ground to shoulder.
16 From midway bet. the legs beneath, the hind legs
17 measured--19 inches, within--
18 The forelegs--16 " "
19 From skull to end of tuft on ear 4 1/2 inches
20 Tuft on ear--(black & thin) 1 1/2 inches
21 The width of for paw gently pressed was 3 1/2 inches
22 would have make a track perhaps 4 inches wide
23 in snow.
24 small
25 There was a ^ bare brown tubercle of flesh
26 to each toe & also a large one for
27 the sole, amid the grayish white hair.
28 A principal claw was 3/4 inch long
29 measured directly--but it was very
30 curving {drawing}
31 > 3/4 >¹⁷⁵

¹⁷⁵this line is placed as a caption under the left-hand drawing

1 young this year. The fur was good
2 for nothing now--
3 I cannot doubt that this is a
4 Canada Lynx--but I am some-
5 what puzzled by the descriptions of
6 the 2 Lynxes.
7 Emmons says of the Canada Lynx--that
8 it has "no naked spots or tubercles [on
9 the soles of its feet] like the other species
10 of the feline race{.}"! &
11 Audubon says "soles, hairy;"--but
12 of the L. rufus "soles naked."
13 It is Audubon's L. Rufus in the naked soles
14 also in "ears, outer surface, a triangular spot
15 of dull white,-- -- --bordered with brown-
16 ish black"--not described in his Canadensis.¹⁷⁶
17 It is his L. Canadensis in size
18 in color generally
19 in length of ear tuft{s}
20 (his L. rufus tufts being only 1/2 inch--)
21 in "upper surface of the
22 tail, to within an inch of the tip, & exterior
23 portion of the thighs, rufous--"
24 in tail being stout, not
25 "slender" like rufous
26 Aud. says that the L. R. is easily distin-
27 guished from small specimens of the
28 female L. Canad. by "The larger feet
29 & more tufted ears of the latter,-- --as
30 well as its grayer color--"

¹⁷⁶T has written this, and following list, with a hanging indent

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39

This is 4 inches longer than his smaller
Canada Lynx & exactly as long as his
large one--both his being males--

Emmons' 2 ~~are respectively 2 feet & 2 feet 5 inches~~
1 is also just 37 inches--or the same length
Emmons largest L. rufus is, thus measured,
only 29 inches long
& Audubon's "fine specimen only 30 inches
Grimes, who had lived 7 years in Canada--called
this a "bobtailed cat"--& said that the
C. Lynx was as dark as his dog{--}which would
be called a black dog--though somewhat
brownish.

They told me there that a boy had seen
another, supposed to be its mate%^%, this
morning, & that they were going out to
hunt it toward night. %v n. p.%

%Sep 6% The willows & button bushes have very rapidly
yellowed since I noticed them Aug 22d--

I think it was the 25th of Aug. that I found the
or older twigs
lower ^ leaves of the willows ^ decidedly & rapidly
yellowing & decaying--on a near inspection-- Now
The change is conspic. at a distance.

Sep 7th
Pm to Cardinal shore
I see many seedling shrub O's springing up in Potters¹⁷⁷
field by the swamp side--some (of last year) in the open pasture
but many more in the birch wood half a dozen rods ^ from
the shrub oaks by the path. The former were dropped by the
way. They plant in birch woods--as in pines.

This small birch wood has been a retreat for squir-
rels & birds. When I examine the little Os in the open land
there is always an acorn with them.

Common rose hips as handsome as ever-- %v back%
%{ } Sep 8th (6ps{ })%

¹⁷⁷ts are uncrossed in "Potter"

1 On the 13th I go to JQ. Adam's
2 again to see the Lynx-- Farmer said
3 that if the skin was {tainted} the hair would
4 come off
5 The tail is black at extremity for one inch
6 ~~the rest o~~ & no white at tip--the rest
7 of it above is rust color--(beneath
8 it is white) with the slightest possible
9 suggestion of white rings i.e. a few white
10 hairs noticed
11 or {spread}¹
12 When {stretched} ~~the claws of~~ the fore foot
13 measured just 5 inches in width the
14 hind foot scarcely less than 6 inches
15 The black border on the ear was broadest
16 on the inner (ie toward {th'} other ear) & forward
17 side 1/2 inch & more. The tufts on the
18 ears only about 1/8+ inch wide
19 Adams went to show me the carcass--
20 It was quite {sweet} still (13th in Pm) only
21 a little fly blown--remarkably long {&}
22 No quadruped or bird had touched it
23 slender--made for jumping. The muscles
24 of the thigh were proportionately very large.
25 I thought the thigh would measure now
26 9 inches in circumference-- I had heard
27 that there was nothing in its stomach
28 --but we opened the paunch & found it
29 full of rabbits fur. I cut off a
30 fore leg.
31 He said that he had lost now 3 hens

¹"spread" in Torrey, 1906 edition

1 only--& ap. did not think much of that
 2
 3 The first he knew the animal was within
 4 3 feet of him--so that he would mostly
 5 turn his gun to strike him. He did not
 6 know where he came from, whether from
 7 over the wall, to which he was near, as
 8 from a chestnut--for he was in the
 9 midst of the woods of Jones lot--not
 10 cut. He felt somewhat frightened{.}
 11 stuck him with the but of his gun, but
 12 did not hurt him much, he was so quick.
 13 turned round & faced him
 14 He jumped at once 30 feet.^ He then
 15 about 30 feet
 16 fired ^ at his eyes & destroyed one--perhaps
 17 put out the other too. He then bounded out
 18 of sight. When he had loaded he found
 19 him crawling toward him on his belly--as if
 20 to spring upon him--fired again & thinks
 21 he mortally wounded him then-- After
 22 loading approached & the lynx faced
 23 him all alive-- He then fired &
 24 the lynx leaped up 15 feet fell & died
 25 Either at the 2d or last shot leapt
 26 within 10 feet of him. He was much
 27 impressed by his eyes & the ruff standing
 28 out on the sides of his neck.
 29 This was about 130 rds easterly from
 30 his house
 31 The skinned tail measured 5 inches
 32 I boiled the leg on the 14th (5 days after it was
 33 killed) for the bone. It smelled & looke² like very
 34 good meat--like mutton.

²missing "d" in "looked"

1 V. Salem Lynxes Sep. 23d 58
2 %v ex. from Richardson Nov. 10--60}%
3 It is remarkable how slow people
4 are to believe that there are any
5 wild animals in their neighborhood.
6 They who have see³ this, generally
7 got
8 suppose that it ~~came~~ out of a
9 menagerie-- Others that it strayed
10 down from far north. At most
11 they call it Canada Lynx.
12 In Willey's Wht mt book--the
13 same animal is spoken of as a
14 terror to the hunter & called the
15 "Siberian Lynx" What they call it
16 I know not.
17 I do not think it necessary even to sup{-}
18 pose it a straggler--but only very
19 rare hereabouts. I have seen 2 lynxes
20 that were killed bet. here & Salem
21 since 27-- Have heard of another
22 or near
23 killed in ^ {Andover} ~~or near~~ There may
24 have been many more killed as
25 near within 30 years & I not have
26 heard of it. For they who kill one
27 commonly do not know what it is.
28 They are nocturnal in their habits
29 & therefore are the more rarely seen
30 --yet a strange animal is seen
31 in this town by somebody about every
32 year--or its track {~~se~~}-- I have heard

³poss missing "n"

1
 2 of 2 or 3 such within a year--& of half
 3 a dozen within 15 years. Such an
 4 animal might range 15 to 20 miles back
 5 & forth from Acton to Tewksbury & find
 6 more woodland than in the S. part of
 7 N. H. generally.

8 Farmer says that a farmer in Tewks-
 9 bury told him 2 or 3 years ago that he
 10 had seen deer lately on the {pine} plain
 11 thereabouts.

12 Adams got a neighbor to help him skin the Lynx--
 13 a middle aged man--but he was "so nervous"--
 14 & unwilling to touch even the dead beast when
 15 he came to see it, that he gave him but little
 16 assistance.

17 Dr. Reynolds tells me of a Lynx killed
 18 in Andover, in a swamp ~~called~~ near Haggerty's
 19 Pond--one winter when he kept school in Tewks-
 20 bury--about 1820. At first it was seen
 21 crossing the Merrimack into {Tewskury} & there
 22 was accordingly a story of an animal about
 23 that was 10 feet long. They turned out--
 24 all the hunters of the neighborhood & tracked
 25 in the snow across Tewksbury & back again to Tewksbury
 26 it ^ to the swamp in Andover^-- One old hunter
 27 bet something that they could not show
 28 him a touch which he did not know--but
 29 when they showed him this--he gave up--

30 Finally they tracked it to the Andover swamp
 31 & a boy shot it on a tree--though it leapt

1 Rice tells of a common wildcat killed in Sudbury some 40 years ago--{resting}
2 on some ice as it was crossing the Sudbury meadows--{amid} ice & water.
3 & fell within a few feet of him when shot--

4 Mr {Boutwell} of Groton tells
5 %v N 9 Ps fwd near Beg. of Ind. Book no 9}%
6 me that a Lynx was killed in Dunstable
7 Thinks it is in the state museum
8 within 2 or 3 years--
9 5
10 This makes 4 that I have heard of (& seen
11 3) killed within some 15 or 18 miles of Concord
12 within 30 years past & no doubt, there
13 %of some kind%
14 have been 3 times as many of them killed
15 %v Sep. 29--56 Walcott saw a lynx ^ which was}%
16 here-- %killed in (his fathers?) barn in Bolton⁴ some}%
17{I hear 2 of them} %25 years ago-- Not so long as mine}%
18 Sep 9th in Lowell
19 %Bradford says the Essex institute have another killed}%
20 %in that neighborhood more recently}%
21 My host says that the Thermometer was at 80°
22 yesterday morn--& this morn is at 52°--
23 Sudden coolness
24 Clears up in Pm & I walk down the
25 Merrimack--on the N bank-- I see very
26 large plants of the Lanceolate thistle--4
27 feet high & very branching.⁵ Also aster
28 cordata with the corymbosus--
29 Concord River has a high & {hard} bank
30 at its mouth--may be 30 feet high on the
31 E side--& my host thinks it was originally
32 about as high on the west side--where
33 now it is much lower & flat{--}having been
34 dug down-- There is a small isle
35 in the middle at the mouth--
36 There are rips in the Merrimack just below
37 the mouth of the Concord.
38 There is a fall & dam in the Concord at
39 what was {H}urds' factory--~~at a~~ the principal
40 fall
41 %Oct 15 Ch. reads in paper that within a few days a wild cat was killed}%
42{in Northampton weighing 22 lbs & another in Tyringham Berkshire Co. of 36 lbs (of course
43 %L. Canadense}%
44 %both}%

⁴ possibly meant to be Bolton

⁵ blotch

⁶ written in left margin vertically in pencil

1
 2 one on the C. in Lowell--one at a {Bleachery}
 3 also--& at Whipples--3 in all below
 4 Billerica Dam--

5 Sep 10th

6 Lowell to Boston & Concord

7 There was a frost this am as my host--
 8 who keeps a market, informed me--

//

9 Leaving Lowell at 7 am in the cars--I
 10 observed & admired the dew on a fine grass
 11 in the meadows, which was almost as white
 12 & silvery as frost when the rays of the newly
 13 risen sun fell on it-- Some of it was probably
 14 the frost of the morning melted. I saw that
 15 this phenomenon was confined to one species of
 16 grass which grew in narrow curving lines & small
 17 patches along the edges of the meadows or lowest ground{.}
 18 a grass with very fine stems & branches which
 19 held the dew--in short that it was (what⁷
 20 I had falsely called Eragrostis capillaris--but
 21 which is probably)⁸ the sporobolus serotinus--almost
 22 the only, if not the only, grass there in its
 23 p. And thus this plant has its day. ~~It ha~~
 24 Owing to the number of its very fine branches--now
 25 in their p. it holds the dew like a cobweb--
 26 a ~~d~~ pearly or clear drop at the end & lesser drops
 27 or beads all along the fine branches & stems
 28 It grows on the higher parts of the meadows--
 29 where often herbage is thin--& is the less apt
 30 to be cut--& seen toward the sun not

//

⁷T draws lines above and below "what"

⁸T makes a square bracket like a close parenthesis

1 long after sunrise--it is very {conspicuous--}
2 & bright a quarter of a mile off--like
3 // frost work-- Call it dew-grass. I find
4 also saw it the 16th
5 its hyaline seed.

6 Almost every plant, however humble, has thus
7 its day--& sooner or later becomes the charac-
8 teristic feature of some part of the land-
9 scape or other.

10 Almost all other grasses are now either
11 cut or withering--& are beside so coarse com-
12 paritively that they can never present this phe-
13 nomenon{--} It is only a grass that is in its
14 full vigor⁹, as well as fine-branched (capillary)
15 that can thus attract & uphold¹⁰ the dew.
16 This is indeed about the time the first frosts
17 come.

18 If you sit at an open attic window--almost
19 anywhere, about the 20th of Sep. you will
20 see many a milk weed down go sailing by
21 on a level with you--though commonly it has {lost}
22 its freight--notwithstanding that you may
23 not know of any of these plants growing in your
24 neighborhood.

25 My host, yesterday--told me that he was
26 {accustomed} once to chase a black fox
27 %{where they were}% %{var of the red by Baird}%
28 from Lowell over this way & lost him at
29 Chelmsford. Had heard of him within
30 about 6 years. A Carlisle man also tells
31 me since that this fox used to turn off &
32 {run} NW from Chelmsford--but that he
33 would soon after return--

⁹"v" poss written over "f"

¹⁰poss underlined

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30

Sep 11th again--

The water is cold today--& bathing
begins to be questionable.

//

The turtles paint. & sternothaerus are certainly
less timid than in the spring--

I see a row of half a dozen or more painted
turtles on a slanting black willow--so close
together that 2 or 3 of them actually have their
fore feet on the shells of their predecessors, some-
what like a row of bricks that is falling.

The scales of some are curled up & just falling

Sep 12

Very heavy rain today--(Equinoctial) raising
the river suddenly-- I have said within 2 weeks¹¹,
that the river would rise this fall--because it
did not at¹² all in the spring--& now it rises{.}
A very dark & stormy night (after it) shops but
{half} open. Where the fence is not painted white
I can see nothing--& go whistling for fear I
run against some one--though there is little chance
that any one will be out-- I came against a stone¹³
post & bruise my {knees}-- Then stumble over
a bridge--being in the gutter. You walk with your
hands out to feel the fences & trees. There is no
vehicle in the street to-night.

//

The therm at 4 Pm was 54°

There was pretty high wind in the night

Sep 13

I go early to pick up my windfalls-- Some of

//

¹¹poss "within a week"

¹²"at" written over "all"

¹³also poss "stern"--the "stern post" is main post in stern of ship

1 them are half-buried in the soil--the rain
2 having spattered the dirt over them.

3 The river this morning about 7 am is already
4 // 28 1/2 inches about S. L. & more than 20 inches
5 of this is owing to the rain of yesterday--& last night!!
6 by 1 1/2 Pm, when it has risen 2 or 3 inches
7 just
8 more I can ^ cross the meadow in a straight
9 line to the Rock. I see a snake
10 swimming on the middle of the tide {from}
11 from shore--washed out of the meadow--
12 & myriads of grass hoppers & beetles &c are
13 knocked or clinging to the weeds & stubble that
14 rises above the flood.

15 // At even the river is 5 inches higher than in the
16 morning--

17 There is very little current at my hosts place
18 this eve--yet a {chip} floats down--(& next
19 the 14th 14
20 morn ^ I see that a large limb has been carried
21 up stream during the night--from where it
22 lay at eve some 20 rds above the junction to
23 a place 30 rds above the junction-- Yet
24 when I try the current (in the eve of the 13th--
25 with a chip--it goes down at heron rock--but
26 the limb was large & irregular & rock
27 very deep in the water-- So I think that
28 the Assabet water was running up beneath
29 while the {Musketaquid} flowed down over it
30 slowly.

31 A Carlisle man tells me of a coon he

1
 2 in Carlisle
 3 killed ^ which weighed 23 1/2 lbs & {dressed}
 4 14 lbs He frequently sees & hears them at present.
 5 Sep 14th--60
 6 Am River still rising
 7 at 4 Pm 1 1/8 inch higher than in morning.
 8 Sep 15
 9 In morn. River is 3 feet 2 1/2+ inches above S. L. //
 10 6 Pm-- " " slightly higher than in morn--or at height //
 11 Thus it reached its height the 3d day
 12 after the rain--had risen on the morning of the 3d day
 13 about 30 inches on ac. of the rain--¹⁴of one day (the 12th)
 14 Joe Smith's man--brings me this Am
 15 Geo. Brooks
 16 a fish-hawk which was shot on ^ ~~his~~ pigeon stand //
 17 last eve-- It is evidently a female of this year
 18 full grown-- Length 23 inch. Alar extent 5 feet 6 1/2 inch.
 19 It prob. lit there merely for a perch.
 20 Looked at Mr Davis' Museum--
 21 Miss Lydia Hosmer--(the surviving maiden
 22 lady) has given him some relics which be-
 23 the Hosmer small
 24 longed to her ^ family--a ^ lead or pewter sundial
 25 which she told him was brought over by her
 26 ancestors & which has the date 1626 scratched
 27 on it. Also some stone weights in an ancient
 28 linen bag--said to have been brought frm England.
 29 oval
 30 They were ^ stones or pebbles from the shore--or might
 31 have been picked up at Walden-- There¹⁵ was a
 32 pound--a half pound--a quarter--a 2 oz--
 33 & several 1 oz. weights-- Now all rather
 34 dark & ancient to look at {like} the bag.

¹⁴ blotch?

¹⁵ poss written over "One"

1 This was to me the most interesting relic in
2 his collection-- I love to see anything that
3 implies a simpler mode of life--& greater
4 nearness to the earth.

5 Sep 16th

6 // 7 am River fallen 1 1/2¹⁶ inches (is 3 feet 7/8
7 i.e. at notch or tree
8 NB inch above S. L.^ I mark a willow 8 ft above
9 S. L.

10 // See no Zizania seed ripe or black yet--but almost
11 all is fallen

12 Sep 17th

13 // 6 1/2 am River 34 1/8 above SL. or fallen about
14 4 inch since eve of 15th
15 It flows now (a {sunk} bottle) 100 feet in
16 2 minutes at boats place--there being no wind.

17 Pm up river
18 // Pontederia seeds rapidly falling
19 // See a flock of 8 or 10 wood ducks on

20 the Grindstone meadow--with glass some¹⁷
21 25 rds off--several drakes very handsome
22 They utter a creaking scream as they sail there
23 being alarmed--from time to time¹⁸--~~rather~~ shrill
24 & loud, very unlike the black duck. At last
25 on¹⁹ sails off calling the others by a short
26 creaking note.

27 Sep. 18. Ac. to all accounts--very little
28 corn is fit to grind before Oct 1st (though
29 I have one kind ripe & fit to grind Sep 1st) It becomes
30 hard to dry enough in the {husk} in the field by that
31 time--much of it-- But long before this

¹⁶"2" written over "4"

¹⁷prob. bleedthrough after word

¹⁸"t" uncrossed

¹⁹poss means "one"

1
 2 or say by the 1st of Sep. it begins to glaze (or
 3 harden on the surface) when it begins to be too hard
 4 to boil. ²⁰pm to Beeches

5 This is a beautiful day--warm but not too
 6 I am going down the RR causeway
 7 warm--a harvest day-- The first unquestionable
 8
 9 & conspicuous autumnal day--when the willows //
 10 & button bushes are a yellowed bower in
 11 parallel lines along the {swolen} & shining stream.

12 The 1st autumnal tints (of red maples) are
 13 now generally noticed-- The {shrilling} of the alder
 14 locust fills the air--a brightness as of spring
 15 is reflected from the green shorn fields. Both
 16 sky & earth are bright. The first clear blue &
 17 shining white (of clouds)-- Corn stalk tops are
 18 stacked about the fields--potatoes are being
 19 dug--Smokes are seen in the horizon. It
 20 is the season of agricultural Fairs. If you
 21 are not happy to-day--you will hardly be so to-morrow{.}

22 Leaving Lowell on the morning of the 10th
 23 after the rain of the day before--I found some
 24 {heaps} of {brush} in an opening in the woods--a
 25 pasture surrounded by woods--to which the owner
 26 was just setting fire--wet as they were--it
 27 being the safest time to burn them-- Hence they
 28 make so much smoke some times. Some farmer
 29 perhaps wishe{s} to plow this fall there--& sow
 30 rye perchance--or merely to {keep} his pasture
 31 clear. Hence the smokes in the horizon at
 32 this season.

²⁰extra space takes up about 1/3 of line

1 // The rattle pod--(in Deep Cut) has begun to
2 turn black & rattle for 3 or 4 days
3 Notice some green {pods} of Ladies slipper still--
4 full of chaffy seed
5 // The beech nut burrs are browned but not
6 falling-- They open directly in my chamber--
7 the nuts are all empty.
8 // White-pine cones (a small cup) & all open
9 that I see %{are they not last years?}%
10 The toadstools in wood paths are perforated
11 (almost like pepper boxes) by flattish slippery
12 insects bronze & black--which are beneath
13 & within it. {Or} you see their heads projecting
14 & the dust (or exuviae?) they make like a cur{b} about
15 the {holes}.
16 // Smooth sumac berries are about past their
17 beauty & the white creamy incrustation mostly
18 dried up.
19 // I see in the Walden road 2 dead shrews
20 & some fox dung by them. They look as if bitten
21 & {flatted} by the fox-- Were they not dropt there
22 by him? Perhaps they will not eat one. v 24th
23 Sep 19th
24 // 4 Pm River fallen about 1 foot
25 Sep 20-- Cattle Show
26 // Rainy in forenoon
27 Sep 21
28// Hard rain last night
29 about 1 7/8 inches fallen since yesterday morning
30 // & river rising again.

1 which the water rose--many or most of
2 the leaves so high having fallen.

3 The clematis yesterday was but just beginning
4 // to be feathered--but its feathers make no show--
5 Feathers out next day in house.

6 // See a large flock of crows.

7 // The sweet gale fruit is yet quite green--but
8 perhaps it is ripe-- The button-bush balls
9 are hardly reddened.

10 Moreover the beach plum appear{s} to prefer
11 a sandy place--however far inland, and
12 one of our patches grows ~~only~~ on the only desert
13 which we have.

14 Some of the early botanists--like
15 Gerarde{--}, were prompted & compelled to
16 describe their plants--but most now
17 a days, only measure them as it were--
18 The former is affected by what he sees & so
19 inspired to portray it, the latter merely
20 fills out a schedule prepared for him.
21 makes a description {pour servir}
22 I am constantly assisted by the books
23 in identifying a particular plant &
24 learning some of its humbler uses--but I
25 rarely read a sentence in {a} Botany which
26 reminds me of flowers or living plants.
27 Very few indeed write as if they had seen
28 the thing which they pretend to describe.

Sep 23d 60

Pm to Cliffs

Some small botrychium ripe. //

I see on the top of the Cliffs today--the dung of a fox consisting of fur, with ~~the~~ part of the jaw & one of the long rodent teeth of a woodchuck in it--& the rest of it huckleberry seeds with some whole berries.

I saw exactly the same beyond Goose pond a few days ago on a rock (except that the ^{prob of a mouse} tooth (a curved rodent) was much smaller[^]) ~~beyond~~-- It is evident then that the fox eats huckleberries & so contributes very much to the dispersion of this shrub--for there were a number of entire berries in its dung-- in both the last 2 I chanced to notice-- To spread these seeds nature employs not only a great many birds--but this restless ranger the fox. Like ourselves, he likes 2 courses-- rabbit & huckleberries.

I see every where in the shady yew wood those pretty round eyed fungus spots on the upper leaves of the blue stemmed Golden-rod--contrasting with the few bright yellow flowers above them-- Yellowish white rings--(with a slate-col-centre) surrounded by green & then dark--

Red Pine sap by N side of Yew path some 10 rds E of Yew--not long done-- The root of the freshest has a decided checkerberry scent & for a long time--a week after,--²³in my chamber{s} the bruised plant has a very pleasant earthy

²³dash and comma written over each other

1 sweetness{.}

2 I hear that a large owl⁻²⁴, prob a

3 cat owl, killed & carried off a full

4 grown turkey in Carlisle a few days ago--

5 Sep 24th

6 Pm to Flints' pond via Smiths Chestnut grove

7 // See a dead shrew in road on turnpike hill

8 (had hard rain the night of the 20th) v back 18th

9 It is remarkable how persistently Nature²⁵

10 endeavors to keep the earth clothed with

11 wood of some kind--how much vitality there

12 is in the stumps²⁶ & roots of some trees, though

13 small & young. E.g. Examined the little

14 hickories on the bare slope of Smiths' hill.

15 I have observed them {endeavoring} to cover

16 that slope for a dozen years past--&

17 have wondered how the seed came there--

18 planted on a bare pasture hill side--

19 but I now see that the mts were probably

20 (the stumps of which remain)

21 planted just before the pine wood ^ was cut

22 down--& having sprung up about that time

23 have since been repeatedly cut down to keep

24 the pasture clear--till now they are quite

25 feeble or dying--though many are 6 feet high.

26 When a part of the hill has been plowed &

27 cultivated I examine the roots which

28 have been turned out--& find that they

29 are 2 inches thick at the ground {thrust} only

30 1 to 3 feet high above--I judge that

²⁴dash is poss bleedthrough

²⁵"N" written over "n"

²⁶blotch?

1
 2 it is 15 years since the pine wood was cut
 3 & if the hickories had not been cut down &
 4 little been left out--there would have been
 5 a dense hickory wood there now 15 to 20 feet
 6 high at least-- You see on an otherwise
 7 perfectly bare hill side or pasture where
 8 pines were out say 15 years before--remote
 9 from any hickories--countless little hickories
 10 a foot high or little more springing up
 11 every few feet--& you wonder how they
 12 came there--but the fact that they preserve
 13 their vitality though cut down so often &
 14 so long--accounts for them

15 This shows how heedlessly woodlots are²⁷
 16 managed at present--& suggests that
 17 when one is cut (if not before) a provi-
 18 dent husbandman will carefully examine
 19 the ground & ascertain what kind of wood
 20 is about to take the place of the old &
 21 how abundantly--in order that he may
 22 act understandingly & determine if it
 23 is best to clear the land or not

24 I have seen many {a} field perfectly barren
 25 for 15 or 20 years, which, if properly managed,
 26 or only let alone, would naturally have
 27 yielded a crop of birch trees within that
 28 time.

29 In wood-thrush path at Flints Pond, a
 30 great many of the {Geiropodium} fungus now

²⁷pencil line in right margin marks this paragraph and the next

1 shed their dust. When closed--it is
2 roundish--or conical orange colored
3 fungus 3/4 inch in diameter--covered
4 with a muscilginous²⁸ matter
5 The thick outer skin of many (it is pink red inside)
6 had already curled back (it splits into segments &
7 curls²⁹ parrallel to the axis of the plant) & reveals
8 the pinkish {fawn} colored puff ball capped
9 with a red dimple or crown. This is a
10 hollow bag--which, when you touch it, spits
11 // forth a yellowish-white powder 3 or 4 inches
12 through its orifice.
13 See 2 very handsome butterflies on the F. P. road
14 ~~2~~
15 in the woods ~~below~~ at {Gourgas} Lot in which
16 C. had not seen before-- I find that they are
17 // quite like the Vanessa Atalanta--or red-admiral
18 of England.
19 // 2 Pm the river ~~has~~ risen about 33 inches
20 above S. L.
21 Sep 25--60
22 // Hard gusty rain (with thunder & lightening)
23 in Pm--almost 7/8 inch falls.
24 Sep 26th
25 Pm Round Walden & Pleasant meadow
26 Small oaks in hollows (as under Emerson Cliff)
27 have fairly {begun} to change.
28 taller
29 // The ^ grass is now generally withered & brown
30 & sedge
31 & reveals the little pines in it
32 // I see that acorn white o. &c have
33 fallen after the rain & wind--just as leaves

²⁸misspelled "mucilaginous"

²⁹written over text

1
 2 & fruit have--
 3 I see, just up, the large light orange toad
 4 stools with white spots, at first {drawing} then {drawing}
 5 Find, still pretty part seeded--at the
 6 Bartlett crossing of the track at {well} Heywoods
 7 meadow-- An ap. not hairy & a short spiked
 8 Carex {virescens} (?) v. press-- //
 9 Sep 27th
 10 Am Sewing³⁰ up my raft--by river--
 11 River ~~1-3/4~~ about 35 inches above SL. & goes //
 12 no higher this time--
 13 Munroes' tame ducks sail along & feed close
 14 to me as I am working there-- Looking up I
 15 {about} 1/2 their size
 16 see a little dipper ^ in the middle of the
 17 river--evidently attracted by these tame
 18 ducks, as to a place of security. I sit
 19 dow³¹ & watch it. The tame ducks have
 20 paddled 4 or 5 rods down stream along the
 21 shore-- They soon detect the dipper, 3 or 4 rods
 22 off & betray alarm by a {t}ittering note--
 23 especially when it dives, as it does continually.
 24 At last when it is 2 or 3 rods off & approach-
 25 ing them by diving--they all rush to the shore
 26 & come out on it--in their fear--but the
 27 dipper shows itself close to the shore & when
 28 they enter the water again joins them within{--}
 29 2 feet, still diving from time to time,
 30 & threatening to come up in their midst--
 31 They return up stream--more or less alarmed

³⁰see American Heritage Dictionary for nautical definition

³¹missing "n"

1 & pursued in this wise by the dipper who
2 does not know what to make of their fears--
3 & soon the dipper is thus {tolled} along to
4 within 20 feet of where I sit & I can
5 watch it at my leisure. It has a dark bill
6 & considerable white {~~or wh~~} on the sides of the head or neck
7 with black between it--no tufts--& no observable
8 white on back or tail--
9 taken at last disturbed by me it suddenly
10 sinks low (all its body) in the water without
11 diving. Thus it can float at various heights
12 (so on the 30th I see one suddenly dash
13 10 rds
14 along the surface from the meadow ^ before
15 me--to the mid of the river & there dive, &
16 though I watched 15 minutes & examined the
17 tufts {of} grass, I could see no more of it.
18 Sep 28
19 // Butter nuts still on tree & falling--{as}
20 all September
21 very
22 // This morning we had a ^ severe frost--the
23 our
24 first to kill ^ vines &c in garden, what you
25 may call a black frost--making things
26 // look black-- Also ice under pump--
27 // Sep 29 Another hard frost
28 & a very cold day
29 // Sep 30-- Frost & ice
30 Oct 1st
31 Oct 1st Remarkable frost & ice this am--
32 // quite a wintry prospect--the leaves
33 of trees still & white at 7 am--
34 // I hear it was 21°+ this morning early

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32

I do not remember such cold at this season.

This is about the full of the moon--

(It {fulled} at 9 Pm the 29th)

in³² clear & bright moonlight nights--

We have fine & bright but cold days after

it. One man tells me that he regretted

that he had not taken his mittens with

him when he went to his morning's work--

(morning in {a} meadow) & when he went

to a spring at 11 am found the dipper

with 2 inches of ice in it frozen solid.

Pm rain again

//

Button bush balls were fairly reddened yesterday

//

& The andropogon ~~furca~~ scoparius looked silvery

//

in {sun} {&} Gossamer was pretty thick on the meadow

& noticed the round green leafy buds of the utricularia

//

in the clear cold smooth water-- Water was prepared

for ice--&c. saw the first Vanessa {antiopa} since

//

spring--

Oct 3d 60

See Vanessa {antiopas}

//

The hard frost of Sep 28--9--30 & esp of Oct 1st

has suddenly killed {crisped &} caused to fall a

//

great many leaves--of ash--hickory &c &c-- These

(and the locust, generally) look shrivelled & hoary

& of course they will not ripen or be bright

They are killed & withered green--all the

v n. p.

more tender leaves--

Has killed all the burdock flower & no doubt many others

//

Sam Barret says that last May he

³²"I" poss corrected

1 Assabet
2 waded across the ^ river on the Old dam
3 in front of his house without going over
4 his india-rubber boots which are 16 1/2
5 inches high. I do not believe you could
6 have done better than this 100 years ago,
7 or before the canal dam was built{.}

8 // Baywings about
9 // I have seen & heard sparrows in flocks more
10 as if flitting by--within a week or since
11 the frosts began

12 Gathered today my apples at the Texas
13 House. I set out the trees, 14 of them--
14 some³³ 14 years ago--& 5 of them several
15 years later--& I now get between 10 &
16 11 barrells of apples from them.

17 Oct 5--60

18 // Rain more or less yesterday Pm & this am
19 Pm to Walden-- The frosts have this
20 year killed all of {Stows} artichokes before
21 one of them had blossomed--but those
22 // in Alcott's garden had bloomed prob. a fortnight
23 ago. This suggests that this plant could
24 not have grown much further north than
25 young
26 this. I see a great many ^ hickories 15 feet
27 high killed turned brown almost black, {&}
28 as I do not remember to have seen them before
29 withering in the woods--^indeed the woods
30 strong
31 have a ^ decaying scent in consequence-- Also
32 much indigo weed is killed & turned black
33 & broken off--as³⁴ well as {ferns} generally.

³³"some" written over

³⁴written over "&"

1
 2 killed
 3 The butter nut is also ^ turned dark brown
 4 & the leaves mostly fallen--(not turning yellow
 5 at all.) The maple generally are what
 6 Gerard would have called an "over-worn"
 7 v bot. {of}. p. //
 8 scarlet color--

9 About 4 Pm it is fast clearing up-- The
 10 clouds withdrawing with a little {dinky}³⁵ scud
 11 beyond their western edges against the blue--
 12 We came out on the E. shore of Walden--
 13 The water is tolerably smooth-- the smooth
 14 parts are dark & dimpled by many rising {fish}
 15 where it is rippled it is light colored--& the
 16 surface thus presents 3 or 4 alternate light
 17 & dark bars. I see a fish-hawk skimming low
 18 over it--suddenly dive or stoop for one of
 19 these little fishes that rise to the surface
 20 so abundantly at this season-- He then sits on
 21 a bare limb over the water, ready to swoop down
 22 again on his finny prey³⁶--presenting as he sits
 23 erect
 24 ^ a long white breast & belly--& a white head.

25 No doubt he well knows the habits of these
 26 little fishes which dimple the surface of
 27 Walden at this season--& I doubt if there is any
 28 better fishing ground for him to resort to. He can
 29 easily find a {perch} over looking the lake & discern
 30 his prey in the clear water--

31 The sporobolus grass in the meadows{--}is now full
 32 of rain (as erst of dew) & would wet you through
 33 if you walked there.

34 Ap. all the celtis & horse-chestnut leaves

³⁵1906 says "dusky"

³⁶ac. to Torrey's 1906 edition

1 are killed turned dark brown & withering--before
2 changing or ripening so severe {has} been the frost--
3 & looking from hills over huckleberry fields--
4 the sweet fern-patches are turned a dark
5 brown almost black--(mulberry black) amid
6 the crimson blueberry & huckleberry--so that the
7 surface is {parded} black & scarlet--from the
8 v below
9 same cause.

10 Oct 6{--}

11 Pm over hill to Wood's Park

12 I see not one hemlock cone of this year at
13 very
14 The Hemlocks--but ^ many of last year holding
15 on-- Ap. they bore so abundantly last year that
16 they do not bear not all this year--

17 I hear that the late cold of Sep 29--30--& Oct 1
18 killed³⁷ froze all the {Bull's} grapes--(papers say
19 some 50 bushels) the therm. going down to 20°+

20 As I go over the hill I see a large
21 flock of crows on the dead white oak--
22 & on the ground under the living one-- I
23 find the ground strewn with white o. acorns &
24 many of these have just been broken in two--
25 & their broken shells are strewn about--so that
26 I suppose the crows have been eating them--

27 Some are merely scratched as if they had been
28 pecked at without being pierced--also there
29 are 2 of the large swamp white o. acorn
30 cups joined together dropt under this oak--
31 perhaps by a crow--maybe a quarter of

³⁷poss crossed out in pencil

1
 2 a mile from its tree--& that prob. across the river--
 3 Prob. a crow had transported one or more
 4 {swamp}-wht o. acorns {this} distance. They must
 5 have been too heavy for a jay.

6 The crow methinks is our only large bird
 7 that hovers & circles about in flocks in an
 8 irregular & straggling manner--filling the
 9 air over your head--& sporting in it
 10 as if at home here-- They often burst up
 11 above the woods where they were perching, like
 12 the black fragments of a powdermill just
 13 exploded.

14 One crow{s} linger{s} on a limb of the dead oak
 15 till I am within a dozen rods-- There is
 16 {strong} & blustering NW wind--& when it launches
 17 off to follow its {comrades} it is blown up & backward
 18 still nearer to me
 19 {--}^& it is obliged to tack 4 or 5 times just like
 20 way
 21 a vessel--a dozen rods or more each time^
 22 very deliberately first to the right then to the left
 23 ^before it can get off--for as often as it tries
 24 to fly directly forward against the wind it
 25 is blown upward & backward within gun-shot
 26 & it only advances directly forward at last
 27 by stooping very low within a few feet of the
 28 ground where the trees keep off the wind.
 29 Yet the wind is not remarkably strong.

30 Horace Mann tells me that he
 31 saw a painted turtle in this town eating a
 32 unio, in our river--in the³⁸ shell, it evidently having
 33 just caught & opened it.

³⁸inserted

1 He has been collecting shells in Ohio
2 recently--and was obliged to wade at least
3 knee deep into the streams for muscles the
4 hogs, which run at large there, {having}, got
5 them all in the shallower water.

6 Oct 7th

7 Pm to Hub. bath to grove³⁹--

8 // Now & for a week the chip-birds in flocks
9 the withered grass & weeds &c alive with them

10 Rice says that when a boy, playing
11 with darts with his brother Israel, one
12 of them sent up his dart where a flock
13 of crows was going over-- One of the crows
14 followed it down to the earth--picked it
15 up, & flew off with it a quarter of a mile
16 before it dropped it. He has observed that
17 young wood ducks swim faster than the old,
18 which is a fortunate provision--for
19 they can thus retreat & hide in the weeds
20 while their parents fly off. He
21 says that you must shoot the little
22 dipper as soon as it comes up--before the
23 water is fairly off its eyes--else it will
24 dive at the flash.

25 I see one small but spreading white
26 o. full of acorns just falling & ready to fall
27 when I strike a limb great numbers fall
28 to the ground-- They are a very dark hazel
29 looking ~~almost~~ black amid the still green

³⁹T poss corrected "g" to "G"

1
 2 leaves--a singular contrast--some that
 3 have fallen have already split & sprouted--
 4 1/8 of an inch. This when (on some trees) for
 5 the greater part have not yet fallen

6 Probably the blue-berry & huckle berry
 7 amelanchier & other bushes which spring up
 8 immediately when the woods are cut have
 9 been already planted & started--annually
 10 or the little oaks have-- Nature thus
 11 keeps a supply of these plants in her
 12 nursery (i.e under the larger wood) always
 13 ready--for casualties--as fires--windfalls--
 14 & clearings by man-- Birds & foxes &c
 15 are annually conveying the seed into the woods{.}

16 Rice reminds me that when the maples
 17 in a blue-berry swamp have got up high
 18 the blue-berries die & you have at length
 19 a maple-wood clear of underwood.

20 Remarking to old Mr. Brabrook⁴⁰
 21 the other day on the abundance of the apple{s}
 22 --Yes says he, "& fair as dollars too"--
 23 thats the kind of beauty they see in apples

24 Looked over Haydens farm & granary
 25 He now takes pleasure in his field
 26 of corn just ready for harvesting--the
 27 rather small cars fully filled out & rounded
 28 at the end--setting low & {many} on one stalk
 29 He loves to estimate the no of bushels he
 30 will have--has already calculate{d} the no

⁴⁰see Concord genealogy index

1 of hills--some 40000 in this field--
2 & he shows some {are} the corn in his granary
3 Also his rye in barrels & his seed
4 corn tucked into the {mow} as he was ~~harvesting~~
5 husking--the large & fallen ears picked
6 out{--}with the husk on-- But all this
7 corn will be given to his pigs & other stock--
8 3 great hogs weigh 1200 {weight}
9 lie asleep under his barn--already sold--
10 Hears {ap} one man who sold his fat
11 hog for \$75.00 He has 2 high & very
12 spreading apple trees looking like one they
13 are so close to-gether from which he gathered
14 one year 21 barrells of round Hub. none-
15 such & 5 barrels of windfalls--grafted
16 on to it within a few years.
17 If we have not attended to the subject
18 we may think that the activity of the ani-
19 mals is not enough to account for the
20 annual planting of such extreme tracts--
21 Just as we wonder where all the flies & other
22 insects
23 ^come from in the spring--because we have
24 not followed them into their winter quarters
25 & counted them there. Yet nature does pre-
26 serve and multiply the race of flies while we
27 are inattentive and sleeping.
28 Many people have a foolish way
29 of talking about small things--&
30 apologize for themselves {or} another

1
 2 having attended to a small thing{s}--having
 3 neglected their ordinary business & amused
 4 or interested themselves by attending to {a}
 5 small things-- When if the truth were
 6 known their ordinary business was the
 7 small thing--& almost their whole lives
 8 {else} misspent--but they were such fools
 9 as not to know it.

10 Oct 8th--60

11 Pm to Damons woodlot--(part of
 12 the burns district of the spring{.})

13 Am surprised to see how green the forest
 14 floor & the sproutland N of Damon's Lot
 15 are already again--though it was a
 16 very severe burn-- In the woodlot--the⁴¹
 17 trees are ap. killed for 20 feet up--
 18 ap the smaller--{these} 6 or 10 feet of green top
 19 --while very vigorous sprouts have shot
 20 up from the base below the influence of the
 21 fire. This show's that they will die I
 22 think. The top has merely lived for the
 23 season while the growth had been in their
 24 sprouts around the base. ~~Also {2}~~ This
 25 is the case with oaks--maples--cherry
 26 &c. Also the blueberry (v. vacillans
 27 has sent up very abundant & vigorous shoots
 28 all over the wood from the now more open
 29 & cleared ground. These are evidently
 30 from stocks which were comparatively puny

⁴¹poss written over "I've"

1 before.
2 oak
3 The adjacent ^ sproutland has already
4 sprung up so high--that it makes on
5 me about the same impression that it
6 did before--though it from 6 to 10 feet
7 high & was generally killed to the ground{--}
8 The fresh shoots from the roots are
9 very abundant & 3 to 5 feet high--
10 or 1/2 as high as before-- So vivacious
11 are ~~of~~ the roots & so rapidly does nature re-
12 cover herself. You see myriads of little
13 shrub Os & others in the woods which
14 look as if they had just sprung from the
15 seed--but on pulling one up you
16 find it to spring from a long horizontal
17 root--which has survived perhaps several
18 stumps &
19 burnings or cuttings. Thus the ^ roots
20 young
21 of ^ oak, chestnut, hickory--maple
22 & many other trees retain their vitality
23 a very long time & after many accidents--
24 & produce {thrifty} trees at last.
25 In the midst of the wood, I noticed in
26 some places where the brush had been more
27 completely burned & the ground laid bare--
28 some fire-weed (senecio) golden rods--& ferns.
29 Standing by a pigeon place on
30 the N edge Damon's Lot-- I saw on
31 the dead top of a white pine 4 or 5
32 rods off--(which had bee⁴² stripped

⁴²prob. "n" left off the end of "been"

1
2 for 15 feet downward that it might
3 die & afford with its branches a perch
4 for the {piegons} about the place--like
5 the more artificial ones that were set up)
6 2 wood-peckers that were new to me //
7 They called a peculiar sharp kek kek on alighting
8 (not so sharp as that of the hairy or downy woodpecker)
9 & appeared to be about the size of the hairy woodpecker
10 or between that in the golden winged. I had
11 a good view of them with my glass as long as I
12 desired. With {their} back to me, they were clean
13 all
14 black ^ above--as well as their feet & bills--
15 & each had a yellow or orange (or possibly orange
16 scarlet?) front (the anterior {base} part of
17 the head at the base of the upper mandible)
18 A long white line along the side of the head to the
19 neck--with a black one below it. The breast,
20 as near as I could see, was gray specked
21 with white--& the underside of the wing expanded
22 was also gray{--}with small white spots. The
23 throat white & vent also white or whitish
24 not of Nuttal.
25 Is this the arctic 3 toed?
26 probably many trees dying in this large burnt
27 trash will attract many woodpeckers to it.
28 I find a great many white O.
29 acorns already ~~half~~ sprouted although they
30 are but half fallen--& can easil{1}y believe
31 that they sometimes sprout before they fall.
32 It is a good year for them. It is re-
33 markable how soon & unaccountably

1 they decay-- Many which I cut open--though
2 they look round without--& discolored & decaying
3 on one side or throughout within--though
4 there is no worm in them. Perhaps they are
5 very sensitive to moisture-- Those which
6 I see today are merely hazel--& not nearly
7 so black as what I saw yesterday--trees
8 that stand by themselves without the wood bear
9 the most.

10 // The sugar maple seeds are now browned--
11 the seed end as well as wing--& are ripe
12 The severe frost about the first of the
13 month ripened them.

14 Oct 9th 60

15 Pm up Assabet

16 See 1 crow chasing 2 marsh hawks
17 over E. Hosmers meadow. Occasionally a
18 hawk dives at the crow--but the crow
19 perseveres in pestering them. Can it now
20 have any thing to do with the hawk's habit
21 of catching young birds? In like manner
22 smaller birds pursue crows--

23 The⁴³ crow is at length joined by another--

24 See several squirrels nests of leaves

25 // formed in the maples--lately--

26 Though the red maples have lost their
27 common{†} brilliancy--on account of the
28 very severe frost about the end of Sep.--some
29 are very interesting-- You cannot judge

⁴³poss "t"

1
2 a tree by seeing it from one side only--
3 As you go round or away from it--it
4 may overcome you with its mass of glowing
5 scarlet or yellow light. You need to
6 stand where the greatest no of leaves
7 will {transmit} or reflect to you most
8 favorably--the tree which looked com-
9 paratively lifeless--cold & merely particolored--
10 seen in a more favorable light as
11 you are floating away from it--may
12 affect you wonderfully as a warm glowing
13 drapery.

14 I now see one small red maple--which
15 is all a {fine} yellow within, & a light
16 red scarlet on its outer surface & prominences.
17 It is an indescribably beautiful contrast of
18 scarlet & yellow.

19 Another{,} is yellow & green--where this
20 was scarlet & yellow--& in this case
21 the bright & liquid green, now getting
22 to be rare, is by contrast as charming
23 a color as the scarlet.

24 I met in the street afterward a young lady
25 who rowed up the river after me, & I
26 could tell exactly where she plucked the
27 maple twig which she held in her hand--
28 It was the one so conspicuous for a quarter {of}

1 a mile in one reach of the river.

2 I wonder that the very crows & the slugs
3 in the street do not manifest a
4 and above
5 recognition of the bright tints about ^ them{--}

6 I saw a tamer dog glance up & down
7 the painted street before he turned
8 in at his master's gate--& I wondered
9 what he thought of those lit trees--
10 if they did not touch his philosophy or
11 spirits--but I fear he had only his com-
12 mon doggish thoughts after all.

13 {He} trotte{d} down the yard as if it were a
14 matter of course after all--or esle
15 as if he deserved it all.

16 Wood ducks are about now amid
17 the painted leaves--

18 For 2 or more nights past we
19 have remarkable glittering golden
20 sunsets as I came ~~up~~ home from the P. O.
21 It being cold & cloudy just above the
22 horizon. There was the most intensely
23 bright golden light in the west end of the
24 {straight} extending under the elms--& the very
25 dust a {4arter} of a mile off was like gold
26 dust-- I wondered how a child could stand
27 quietly in that light--as if it had been a
28 furnace.

1 The water is otherwise apparently clear of weeds.
2 The river, where these abound is about half
3 a mile distant down the little brook near
4 which this Pond lies--though there may be a
5 few pads in the ditched part of it at
6 half that distance. How then did the seed
7 get here? I learned last winter (V Dec. 23
8 59) that many small pouts & some sizeable
9 pickerel had been caught here, though the
10 connexion with the brook is a very slight & shallow
11 ditch. I think therefore that the lily seeds
12 have been conveyed in to this pond from the river
13 immediately--or perchance from the meadow
14 between--either by fishers, reptiles, or birds
15 while fed on them--& that the seeds were
16 not lying dormant in the mud. You
17 have only to dig a pond anywhere in the {fields}
18 hereabouts--& you will soon have not
19 only water fowl--reptiles--& fishes in it--
20 but also the usual water plants--as
21 lilies &c-- You will no sooner have got
22 your pond dug than nature will begin
23 to stock it. I suspect that turtles eat these
24 seeds for I often see them eating the
25 decayed lily leaves. If there is any water
26 communicator perhaps fishes arrive first
27 & then the water plants for their food &
28 shelter.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32

Horace Mann shows me {his} skeleton of
a blue heron-- The neck is remarkably strong
--& the bill-- The latter is 5+ inches long
& the {feathers} above{--} & 6 1/2 to the gape.

A stake-driver which {he} has, freshly killed,
has a bill 3 inches long above & 4 1/8 to the gape
& bet 5 & 6/8 deep vertically at the base-- This bird
weighs a little over 2 lbs being quite large & fat.

Its nails are longer & less curved than those of the
heron--

sharp
The ^ bill of the heron--like a stout
{pick}--weilded by the long & stout neck--
would be a very dangerous weapon to encounter

He has made a skeleton of the fish-hawk
which was brought to me within a month-- I remark
the great eye-sockets--& the claws--
& perhaps the deep sharp breast bone.

Including its strong locked bill--it is clawed
at both ends--harpy-like.

Pm went to a fire (or smoke) at
Mrs Hoars. There is a {slight} blaze &
more smoke--2 or 300 men rush to the house
cut large holes in the roof--throw many
{hogsheds} of water into it--when a few
pails full well directed would suffice--& then
they run off again--leaving your atticts
{see} 3 inches deep with water--which is rapidly
descending through the ceiling to the basement
& spoiling all that can be spoiled.

While a {torrent} is running down the stairways

1 They were very forward to put out the
2 but they take no pains to put out the water
3 which does far more damage-- The
4 first was amusement--the last would
5 be mere work & utility. Why is
6 there not a little machine invented
7 to ~~through~~ throw the water out of a {house}.
8 hopelessly
9 They are ^ cockneys everywhere
10 who learn to swim with a machine--
11 They take neither disease nor health--
12 nay nor life itself the natural way-- I
13 see dumb-bells in the ministers study--&
14 some of their dumbness gets into his sermons.
15 Some travellers carry them round the world
16 in their carpet bags-- Can he be said
17 to travel--who requires still this exercise.
18 A party of school children had a pic-
19 nic--at the Easterbrook Country⁴⁶ the other
20 & they carried bags of beans from their
21 gymnasium to exercise with them--
22 I cannot be interested in these extremely arti-
23 ficial amusements-- The traveller is
24 no longer a wayfa{rer} with his staff & pack
25 & dusty coat--he is not a pilgrim
26 --but he travels in a saloon & carries
27 dumb-bells to exercise with in the intervals
28 of his journey.
29 (10th &)
30 Oct ^ 11th 60
31 Pm to Sleepy Hollow & N of M. Pratts.

⁴⁶"C" written over "c"

1 quite regular & handsome
2 sunny side^--as if they were the termination
3 or {operculum} of pores--which had burst
4 in the very thin pellicle of the fruit--pro-
5 ducing a slight roughness to the touch--
6 Each of these little ruptures so to
7 call them, is in form a perfect star with
8 5 rays-- So that, if the apple is
9 higher colored{--}reflecting the sun--on
10 the duller surface of this pear--the
11 whole firmament {of-th} with its stems shines
12 hobby
13 forth-- They whisper of the ^ stars under whose
14 influence they have grown & matured. It
15 is not the case with all of them--but only
16 the more perfect specimens.
17 Pears, it is truly said, are less poetic than
18 apples. They have neither the beauty nor
19 the fragrance of apples--but their excellence
20 is in their flavor which speaks to a grosser
21 They are glout morcaux--
22 sense-- ^ Hence while children dream of
23 {realize}
24 apples--ex-judges (are the connoisseurs)
25 of pears. They are named after
26 emperors & kings & queens & dukes &
27 dutchesses. I fear I shall have to wait
28 till we get to pears with American⁵⁷
29 names--which--Republican{s} can swallow--
30 {Am-lo} Looking through a more powerful
31 glass{--}those little brown dots are stars with
32 from 4 to 6 rays commonly 5--where a little wart
33 like prominence--(perhaps the end of a pore or a thread)

⁵⁷"A" written over "a"

1
 2 appears to have burst through the very thin pellicle
 3 & burst it into so many rays--

4 Oct 13-- 60

5 Pm up River--

6 I find no new cones on Monroes larch
 7 by the river--but many old ones-- (The same
 8 was the case with the hemlocks on Assbet)
 9 unless those imperfect ones with a twig growing
 10 from their extremity were this years--(but I think
 11 they were last years). Last year both White
 12 pine hemlock & larches bore abundantly
 13 & there were very few white O. acorns-- This
 14 ^{?⁵⁸} year--so far as I {observe}--there are scarcely
 15 were
 16 any white pines-cones (~~are~~ there any?) or hemlock
 17 or larch--& a great abundance of white
 18 O. acorns--in all parts of the town.

19 So far as I have observed--if pines or oaks
 20 bear abundantly one year--they bear little
 21 or nothing the next year-- This is a white O.
 22 It is also an apple & a potato year
 23 year, not a pine year--^ I should think
 24 that there might be a bushel or 2 of
 25 on &
 26 acorns ^ under some single trees. There
 27 are but few in the woods-- Those spreading
 28 trees that stand in open pastures fully
 29 exposed to the light & air are the most
 30 fertile ones. I rejoice when the white O.
 31 bear an abundant crop-- I speak of it
 32 to many whom I meet--but I find few
 33 to sympathise with me-- They seem to {care}

⁵⁸ This question mark may be a stray mark

1 much more for potatoes-- The Ind.
2 say that {many} acorns are a sign of a
3 cold winter-- It is a cold fall⁵⁹ at any rate
4 The shore at Clam Shell is greened with
5 pontederia seed which has floated up & been
6 left there--with some button bush seed--
7 some of
8 & ^ those slende bulbs of the lysimachia--
9 or round
10 & those ^ green leaf buds of the utricularia
11 vulgaris-- Thus prob--are all these dispersed.
12 I also see large masses of the last
13 named weed lodged against the bridges
14 &c with the conspicuous greener leaf buds
15 attached.
16 I find no yellow lily seeds--only {a} few
17 white lily seed pods-- These are full of
18 seeds the color of apple seeds & but a quarter
19 as big. They sink in water as soon as the slimy
20 matter which {invests} them is washed off-- I see
21 a white lily stem coiled up with many whorls
22 like a mine spring {drawing} They are almost
23 only white lily Pods that are left now.
24 There is some of the fresh water sponge
25 in this the main stream too.
26 // The F. hiemalis back & I think I see
27 // & hear the shore larks.
28 The {shrub} Os on {J.} Hosmer's hill side
29 this side of Hollowell {place}⁶⁰--have already
30 passed the height of their beauty-- Is it
31 not early--on ac. of frost.

⁵⁹stray mark after word

⁶⁰word obscured by fingerprint

1 & elegant one which the sight of
2 it inspires-- No scientific description
3 will supply the want of this though
4 & analyse
5 you should count & measure ^ every atom
6 that seems to compose it.
7 poetry
8 Surely {~~poet~~} & eloquence are a more universal
9 language {than} that Latin which is
10 confessedly dead. In science, I should say,
11 all description is postponed--till we
12 know the whole--but then science itself
13 will be cast aside. But unconsidered
14 expressions of our delight--which any natural
15 object draws from us--are something
16 complete & final in themselves--since
17 all nature is to be regarded as it con-
18 cerns man--& who knows how near to ab-
19 solute truth such unconscious affir-
20 are
21 mations may come--which ~~were~~ the
22 truest--the sublime conceptions of He-
23 brew poets & seers, or the guarded
24 statements of modern geologists--{which}
25 we must modify or unlearn so fast?
26 As they who were present ~~at~~ early at
27 the discovery of gold in California--& observed
28 the sudden fall in its value--have most truly
29 commonly
30 described that state of things--so it is ^ the
31 old naturalists who first received american⁶¹
32 plants--that describe them best.
33 A scientific description is such as you would

⁶¹poss "American"

1
2 get if you should send out the scholars of
3 the polytechnic school with all sorts of
4 {metres} made & patented to take the mea-
5 sures for you of any natural object-- In a
6 sense you have got nothing new thus--for every
7 object that we see mechanically is mechanically
8 daguerreotyped on our eyes--but a true description
9 growing out the ^{perception &} appreciation of it--is itself a new
10 fact--never to be daguerreotyped--indicating
11 the highest quality of the plant--its relation to
12 man{--}of far more importance than any merely
13 medicinal quality that it may possess--or
14 & permanence
15 be thought today to {posses}. There is a certainty ^
16 about this kind of observation too that does not
17 belong to the other ~~latter~~--for ever⁶² flower & weed
18 has its day in the medical pharmacopoeia--
19 --but the beauty of flowers is perennial in
20 the taste of men--
21 Truly this is a world of vain delights.
22 We think that men have a substratum of
23 common sense--but sometimes {are} peculiarly
24 frivolous. But consider what a value
25 is seriously & permanently attached to gold
26 & so called precious stones--almost universally.
27 Day & night--summer & winter--sick or
28 well--in war & in peace--men speak of
29 & believe in gold as a great treasure--
30 By a thousand comparisons they prove their
31 devotion to it. If wise men or true

⁶²T misspells "every"

1 philosophers have any considerable proportion
2 to the whole no of men--gold would
3 be treated with no such distinction-- Men
4 seriously & if possible⁶³ religiously believe in &
5 worship gold. They hope to earn golden opin-
6 ions--to celebrate their golden wedding-- They
7 dream of the golden age-- Now it is not its
8 intrinsic beauty in value--but its rarity & arbitrarily
9 attached value that distinguishes gold--
10 You would think it was the reign of shams.

11 The one description interests those
12 chiefly who have not seen the thing--the
13 other chiefly interests those who have seen
14 it & are most familiar with it--& brings
15 it home to the reader{.} We like to read a good
16 description of no thing so well as of that
17 which we already know the best--as our
18 {friend} or ourselves even. In proportion
19 as we get & are near to our object--we ~~dis-~~
20 ~~tr~~ do without the measured or scientific
21 account--which is like the measure they
22 take--or the Des. they write of a man when {--}
23 %{with his passport}%
24 he leaves his country%^%--& insert in his pass
25 port--for the use of the detective police
26 of other countries-- The men of science merely
27 look at the object with sinister eye to see
28 if corresponds with the passport--& merely
29 visé or make some trifling additional
30 mark on its passport & let it go--

⁶³"possible" written over "possibly"

1
 2 but the real acquaintances & friends
 3 which it may have in foreign parts
 4 do not ask to see nor think of its
 5 passeporte.

6 Gerard has not only heard of & seen
 7 & raised a plant--but {fet.}⁶⁴ & smelled &
 8 tasted it--applying all his senses to it.
 9 You are not distracted from the thing--to the
 10 system in management. In the true natural
 11 order--the order or system is not insisted on--
 12 Each is first & each last. That {nature}
 13 presents itself to us this moment--occupies
 14 the whole of the present--& rests on the very top-
 15 most point of the sphere--under the zenith.
 16 The species & individuals of all the natural king-
 17 domes--ask our attention & admiration in a
 18 round robin-- We⁶⁵ make straight lines--
 19 putting a captain at their head & a lieutenant
 20 at their tails--with sergeants & {corporls}
 21 all along the line--& a flourish of trumpets
 22 insisting on a particular uniformity
 23 near the beginning--^{while} where nature⁶⁶
 24 has made curves--to which belongs their
 25 own sphere music. It is indispensable for
 26 hi{m} to square her circles{,} & we {ofter} our
 27 rewards to him who will do it.

28 Who describes the most familiar object with
 29 a zest & vividness of imagery as if he saw it
 30 for the first time--the novelty consisting not
 31 in the strangeness of the object--but in the

⁶⁴1906 has "felt." That is possibly what T meant, but there are not enough letters.

⁶⁵"robin" and "We" according to Torrey's 1906 edition

⁶⁶poss "Nature"

1 new & clearer perception of it.

2 Oct 14--60

3 This year--on ac. of the very severe frosts
4 the trees change & fall early, or fall before
5 fairly changing-- The willows have
6 the bleached look of November--

7 Consider how many leaves there are to fall
8 each year & how much they must add to
9 the soil Coultas (in "What may be Learned from{--}
10 a Tree") finds that a single beech twig
11 27 inches & 3 lines long and six years old
12 was "the leaf{y} labor of 155 leaves" & quotes
13 from Asa Gray's First Lessons in Botany--
14 that "The Washington Elm, at Cambridge
15 --a tree of no extraordinary size--was
16 some years ago estimated to produce a
17 crop of seven millions of leaves, exposing
18 a surface of 200,000 square feet,
19 or about 5 acres of foliage."

20 Supposing this to be true & that the horizon-
21 tal spread of this ~~and~~ (like other the largest
22 elms) is 100 feet, then if all its
23 lines should be spread evenly on the
24 ground directly under it--there would
25 be about 25 thicknesses-- An ordinary
26 forest would probably cover the ground as thickly
27 as this tree would. Supposing a leaf
28 to be of the same thickness with an ordinary
29 sheet of letter paper--& that the mass

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30

is compressed as much as paper packed in a
ream--the 25 would be about 1/16 of an
inch thick. This is a rude calculation--

We have had a remarkably fertile
year--let us see now if we have a
cold winter after it.

Pm up Groton Turnpike--

If you examine a woodlot after numerous
fires & cuttings you will be surprised to find
how extremely vivacious are the roots of
oaks--chestnuts--hickories--birches--cherries
&c-- The little trees which look like seedlings
of the year will be found commonly to spring from an
older root or horizontal shoot--or a stump--
Those larger which you may have selected to
transplant will be found to have too much
of old stump & root under ground to be removed--
They have commonly met with accidents &
seen a good deal of the world already. They
have learned to endure & bide their time.
When you see an oak fully grown & of fair
proportions--you little suspect what diffi-
culties it may have encountered in its early
youth{.}--what {sores} it has overgrown--{--} How
for years it was a feeble layer lurking
under the leaves and scarcely daring to show
its head above them--burnt & cut & browsed
by (%cattle &%) rabbits-- Driven back to earth
again 20 times as often as it aspires to the heavens

1 The soil⁶⁷ of the forest is crowded with
 2 a mass of {these} old & tough fibres--
 3 annually sending up their shoots {&} here & there{s}
 4 The under ground part survives & holds its
 5 own--though the top meets with countless
 6 accidents{,} so that although seeds were
 7 not to be supplied for many years--these
 8 would still spring up shoots enough {to} stock
 9 %{So will the old & feeble huckleberry roots}%
 10 it. %Nay, even the sedge (C. Penn) is already rooted in most woods & at once begins}%
 11 I examine the John Hosmer woodlot
 12 to spread & prevail when the wood is cut, esp. if a frost or fire keeps down the new wood.}%
 13 (sproutland) cut off last winter on the N side
 14 at Colburn Hill-- Next to the conspicu-
 15 ous sprouts from the large stumps--(of which the
 16 white birch{es} have here grown the most
 17 --annually 4 or 5 feet) you notice an
 18 increased growth of weeds--as golden
 19 rods (esp. S puberula) the 2 fireweeds--
 20 asters--everlasting (--fragrant) hawkweeds
 21 yarrow low blackberry--cinquefoil--&c
 22 All of these, I believe, except the erectites,
 23 are {perennials}⁶⁸, and those which blossomed
 24 this year & those which blossomed this year
 25 (with these exception) must have sprung up
 26 before the wood was cut--the others were probably
 27 planted last fall or in the winter--unless their
 28 E.g.
 29 seed endures in the soil-- I see ^ what I
 30 consider seedling g. rods--everlasting--&
 31 yarrow--i.e. more radical leaves without
 32 any stem--which will bloom next year--
 33 The seedling trees of this year of course
 34 ⁶⁹{v & r Saint Pierre}%

⁶⁷copy is blurred, so the I dot and "l" seem to repeat, continues on every line on page

⁶⁸There are two "r"s but this looks like a result of the copying process. Check against manuscript.

⁶⁹written vertically in left margin in pencil, pencil lines place it under "yarrow low blackberry" line

1
2
3
4
5
6

⁷⁰St Pierre p 198 vol 3d

"If you find a single {foot} of it [anemone nemorosa]
on a hill, in a wood not greatly frequented, you
may rest assured, that it diffuses itself like a net-
work through the whole extent of that wood."

⁷⁰page inserted relatively at caret mark on previous journal page, wax mark visible on journal page

1
2 St Pierre vol 3 p 212-3
3 black
4 "Thorny plants"-- -- --as thistles, echium, brambles, & ^ thorn
5 "are the first which appear on lands in fallow, or in
6 forests which have been cut down⁷¹ & they form nurseries
7 for trees." Thus the thorny plants are the original cradle
8 of the forests; and the scourge of the agriculture of
9 man, is the bulwark of that of nature."

⁷¹stray mark or blotch?

1
2 will be scarcely noticed among the sprouts
3 & weeds-- I chance to see none. I see
4 however many young black-cherry trees--3
5 to 6 inches high--which are just 3 years old--
6 with roots partly coiled up (as if they had
7 met with difficulties in their upward growth)
8 & much larger than their stems. These then
9 were planted in the midst of this pine &
10 oak & birch wood at least 2 years before
11 it was cut--though the tree they came from
12 is so far off that I know not where it is--&
13 they have not effectually risen above the
14 surface till this year-- If you look through
15 a sproutland you will find no tree, not
16 strictly speaking a forest tree--& which at the
17 same time
18 did not attain to its growth there before
19 --so common as these little black-cherries.
20 The birds having conveyed the stones into the
21 midst of the woods & dropt them there--
22 i.e. they are planted chiefly before the
23 wood is cut. These {cherry} trees are however
24 short-lived. They live a few years & bear
25 large & pleasant tasted fruit--but when
26 the forest trees have grown up around them
27 they die.

28 I see that a great part of the club moss
29 (L. complanatum)--which was so abundant
30 in the lower part of this wood--has already
31 been killed & is completely withered & bleached
32 white--prob. by the cold last winter, if not

1 also by exposure to the light & heat of the
2 summer--

3 This lot is thickly covered with the rubbish
4 or tops-- I suspect that it is on⁷² the whole
5 better to leave this than to clear the ground--
6 that when it is not too thick (as masses
7 of pine tops it is an ^{important} ^ protection to the seed-ling
8 trees (gardeners find that seedling pines
9 require ~~the~~ shade in their nurseries) &
10 of course the soil is enriched by ~~their~~ its
11 decay.
12

13 Under one white O. where on the 8th ult
14 the ground was strewn with acorns I find but
15 a single round one left today--and under
16 another though many acorns are left
17 all of them are decayed--so rapidly are
18 the{y} gathered by the squirrels. I take those
19 from the tree already decayed without a worm
20 in them. Fare the greater part that
21 you find destroyed (this does not include those
22 eaten by squirrels) have thus decayed--& I
23 think that the cause was the severe frosts
24 of about Oct. 1st--which especially in-
25 jured those on the ground. It is surprising
26 that any escape the winter. I am not
27 sure that white o. acorns do (as I am that
28 many scarlet & red O &c do) these
29 are not protected by any downiness--& their
30 & leaves
31 shoots ^ I know are the most tender in the spring.

⁷²poss T started to write "the" and left the beginnings of "t" after "on",
without crossing it out

1
 2 Prob{.} almost all the white o. acorns would
 3 be destroyed by frost--if left on the surface
 4 in pastures--& so it may be that more
 5 escape ~~when the~~ because the squirrels carry
 6 them off & bury them or leave them under the
 7 shelter of the woods & leaves though they consume
 8 so many--than would if they were not disturbed.

9 Also I find many full grown worms in
 10 them--& the acorn all powder--on the tree.

11 Do I not see yellow crowned warblers?
 12 much yellow on shoulders or sides--& white in wings //
 13 Yes-- They fly up against the windows the next day--
 14 when they fly.

15 Acorns--~~chestnuts &c~~ that fall in open pastures
 16 decay so fast that you might wonder how
 17 any survived the winter--but the fact is that
 18 they are not supposed to live long--but are
 19 pick up & carried off by squirrels--& either
 20 deposited in holes or buried under the leaves in
 21 the forest or consumed{,} & so probably more
 22 of these survive than would if they were not
 23 carried off.

24 Oct 16th--60

25 Pm to White Pond & neighborhood--
 26 As a consequence of the different manner
 27 in which trees which have winged seeds & those
 28 {the}
 29 which have not are planted--~~I observe~~
 30 being blown together⁷³ in one direction by the
 31 wind--the latter being dispered⁷⁴ irregularly
 32 by animals-- I observe that the former
 33 in pines--(which the white are said in the

⁷³poss "to-gether"

⁷⁴prob T misspells "dispersed"

1
2 years back--though we do not. A small
3 pine lot may be a {side} of such an oval
4 or a half--or a square {cut} in the in-
5 side with all the curving sides cut off
6 by fences--. Yet if we attend more to
7 the history of our lots we should manage
8 them more wisely %{The pine as-I toward south}%
9 %{as I am getting }%
10 %{v 262}% %{out of mts}%
11 %?% Looking round--I observe at a distance

12 an oak wood lot some 20 years
13 dense of w. pines about a rod & a half wide
14 & 25 or 30 years old
15 old--with a ^ narrow edging ^ along its

16 whole southern side which is straight
17 & next to it on open field or pasture
18 & 30 or 40 rods long.^ It presents a

19 very singular appearance--because

20 the oak wood is broad & has not

21 pines within it--while the narrow {edging}
22 %{perfectly}%
23 is %^% straight & dense{,} & pure pine. It

24 is the more remarkable at this season

25 because the oak is all red & yellow--

26 & the pine all green. I understand it
27 %{easily}%
28 & read its history %^% before I get to it{.} & I find

29 as I expected--a fence separating the pines from

30 the oaks--or that they belong to different

31 owners-- I also find as I expected--that 18 or

32 20 years ago a p. pine wood had stood where

33 the oaks are & was then cut down--
34 %{before}%
35 for there are their old stumps-- But {fore}

36 they were cut their seeds were blown into the

37 neighbors field--& the little pines came up

38 all along its edge {so-t} & they grew so

1 thickly & so fast--that that neighbors
2 %at least%
3 refrained %^% from ploughing them up or cutting
4 them off--for just this rod & a half
5 %where they were the thickest}%
6 in width--%^%& more-over--though there
7 are no sizeable oaks mixed with these
8 pines--the whole surface over of this
9 %as usual%
10 narrow strip is %^% completely stacked with
11 little seedling oaks less than a foot high{.}
12 But I ask-- If the neighbor so often
13 lets this narrow edging grow up-- --why
14 not often by the same rule--let them
15 spread over the whole of his field? %v 7 ps
16 forward%
17 When at length he sees how they have
18 grown does he not often regret that he
19 did not do so? Or why be {dependant}
20 even to this extent--on these windfalls from
21 our neighbors' trees--or an accident--
22 %hard wood}%
23 Why not control our own woods & destiny
24 %This is the history of countless ^ lots hereabouts}%
25 more? (This was N from the lane beyond
26 There are many such problems
27 Conants' handsome wood) geometry
28 in forest geography to be solved.
29 Again I read still further back--a
30 more varied story-- Take the line bet-
31 {Rice} & Conant (?) or {Garfield} (?) Here is
32 green
33 a ^ strip of dense pitch & white pine some
34 32 or 40 rds long--x 4 wide & 30 years old{.}
35 ~~white~~ bounded on the east side is a large red
36 the nearest part of it %dozen or more%
37 & yellow oak woodlot ^ some 20⁸⁵ years old,
38 & on the west a strip 3 rods wide of little
39 white & p pines 4 to 10 feet high that have
40 sprung up in the open land--& next to these
41 is an open field occasionally cultivated--
42 Given these facts to {find} the wall-- If

⁸⁵"20" crossed out in pencil

1
2 you think a moment you will know without
3 my letting you that it is between the pine
4 wood & the oak--
5 %{Some dozen or more}%
6 {drawing}⁸⁶⁸⁷ 20⁸⁸ years ago there was a
7 ⁸⁹%v. p 202%
8 large pine wood extending up
9 to the wall on the west--& then
10 an open field belonging to another
11 man. But as before the pine
12 %{not}%
13 seed was blown ~~into~~th over the
14 wall--& it took so well--that
15 %4%
16 for 3⁹⁰ rods in width it was suffered
17 to grow--or rather may be said to have
18 defended itself--& crowded the farmer back
19 %{some 15}%
20 (no thanks to him)-- But when 20 years
21 ago the old pine wood was cut by its owner
22 the other was not ready to cut his younger one--
23 This is now about 30 years old & for
24 many years--it has been endeavoring to spread
25 %{as its parents did}%
26 into the sproutland by its side%^--but for a long time
27 the proprietor not taking the hint--blind to his
28 own interests--plowed quite up to the edge
29 of the wood as I noticed--& got a few
30 {beans} for his pains-- But the pines (which
31 he did not plant) grew while he slept--
32 & at length one spring he gave up the
33 contest & concluded at {last} to plough
34 only within 3 rods of the wood, the
35 little pines were so thick & promising
36 He concluded not to cut his own fingers

⁸⁶drawing continues for 8 lines on left of page

⁸⁷The words in the drawing are "little pines," "old pines," "wall," "oak."

⁸⁸poss. "20" crossed out in pencil

⁸⁹side-facing caret connects interlineation with drawing

⁹⁰"3" crossed out in pencil

1 any more--i.e. not further than up by the
2 last joint{.} & hence this 2d row of little
3 pines. They would have covered the half
4 or perhaps {the} whole of his barren field before
5 this if he had let them.

6 I examined these pine lots.

7 The strip of little pines contained also a little
8 white birch--much sweet fern & open {thin}⁹¹
9 sod--but scarcely are oak & that very small.

10 The strip of large pines contained {~~cont~~}

11 countless oaks--the various kinds white
12 which had come from the young o. lot little
13 red black & shrub o^--many ^⁹² pines of both

14 kinds--~~at~~ & little wild cherry--white--&

15 some hazel & high blueberry-- (It was rather
16 elevated as well as dry soil--) %v p 204%⁹³

17 I dug up some of the little oaks to see
18 how old they were & how they had fared--
19 The largest in the lot were about 1 foot
20 high
21 1st a red or scarlet o. ap. 4 years old.

22 The acorn was about 1 inch below the surface--

23 of the pine leaves. It rose 5 inches above

24 the leaves & the root extended about 1 foot

25 below the surface-- It had died down once--

26 The 2d was a black oak which rose

27 6 inches above the leaves (or 8 measured along

28 the stem-- It was apparently 4 years old

29 It was much branched & its tops had been

30 cut off by rabbits last year. The root

31 ran straight down about 1 inch--then

32 or 6

33 nearly horizontally ~~about~~ 5 ^ inches--& when

34 I pulled it up it broke off where less than

35 1/8 inch thick at 16 inches below the

36

⁹¹line over "open" and under "this" to transpose them

⁹²caret points to "little"

⁹³diagonal pencil line before "%v p 204%"

1
 2 surface. This tree was 1/4 of an inch in diam. at the
 3 surface & nearly 3/4 of an inch in diam at
 4 5 inches below--(along the root) At the same
 5 height above the surface it was ^{hardly} {~~ne~~} 1/5 of an
 6 inch in diameter

7
 8 The 3d was a white oak 10 inches high ap.
 9 7 yrs old. It also had been browsed by a rabbit
 10 & put out a new shoot accordingly--2 years growth
 11 was {buried} in the leaves. The root was very similar
 12 both in direction & form to the last only--not quite
 13 so thick--~~both~~

14 4 a shrub o. also quite similar--though less
 15 thick still & with 2 or more shoots from one ~~root~~.
 16 stock.

17 In all these cases, or esp. the 1st {3}--
 18 one main &
 19 there was ^ an unexpectedly great {fusiform} root--
 20 altogether not of proportion to the top--you
 21 would say--tapering both ways--but of course
 22 largest & sharpest downward--with many fine
 23 stringy fibers extend ending on every side{.} from it
 24 perhaps a foot-- Just as a biennial
 25 plant devotes its energies the 1st year
 26 to producing a stock on which it can
 27 feed the next--or these little
 28 oaks in their earliest years--are
 29 forming great fusiform--vigorous roots
 30 on which they can draw when they are
 31 ^{left}
 32 suddenly (turned out) to seek their for-
 33 tunes in a sproutland.

34 Thus this double forest was advancing--

1 to {conjure} new (or old) land--sending
2 children
3 forward their (young men) on the wings
4 of the wind--while already⁹⁴ by the oak
5 seedlings for the o. wood behind had
6 established themselves beneath the old pines
7 The pines were the vanguard
8 read to supplant them-- ^ ~~The old fro~~ They
9 with their children before them
10 ~~old pine~~ stood up to pine^--while the little oaks
11 kneeled behind & between them-- The pine
12 ⁹⁵is the pioneer--this oak the more
13 permanent settler--who {lays} out his im{-}
14 Pines are by some considered lower in the scale of trees--in the order
15 provements-- of development, than oaks{.}

16 While the pines were blowing into the pasture--
17 from this narrow edging
18 ^the {animals}⁹⁶ were planting the acorns under
19 the pines-- Even the small pine woods
20 are thus perfectly equipped

21 There was even under these dark dense
22 pines 30 years old--a pretty thick bed
23 of blueberry & huckleberry bushes next the
24 wall 10 feet wide--the relics of a
25 still denser & higher one that grew {again}
26 there when it was an open field. The
27 farmer had thus been driven back 3 times.
28 1st by the blue berry hedge--then by the
29 pines of 30 years ago--& lastly by {these)
30 young pines that sprang from them--

31 Thus a wood lot had been forced upon
32 him, & yet perhaps he will talk of it as a
33 creation of his own-- %v top 179%

34 I have com up here this Pm to
35 see Wheeler's dense {whit} pine lot
36 beyond the pond--that was cut off last
37 winter--& know how the little oaks look in it.

⁹⁴missing "l"

⁹⁵"v 189-200 or 201" written in pencil in left margin on this line--in T's hand?

⁹⁶possibly "squirrels"

1

2 To my surprise & chagrin I find that
 3 %{who calls himself its owner}%
 4 the fellow has burned it all over--& sowed
 5 %{& here}%
 6 winter rye there. He no doubt means to let
 7 it grow up again in a year or two--but
 8 he thought it would be clear gain if he
 9 could extort a little rye from it in the mean-
 10 while. What a fool! Here nature had
 11 yet every thing ready for this emergency
 12 --%&% kept them ready for many years--oaks
 13 %{or more}%
 14 half a dozen years old%^--with fusiform roots--
 15 full charged--& tops already pointing skyward--
 16 only waiting to be {touched} off by the sun--
 17 & he thought he knew better--& would get
 18 a little rye out of it first which he {could}
 19 feel at once between his fingers--& so he burned
 20 it--& dragged his harrow over it. As if oaks
 21 would bide his time or come at his bidding.
 22 Or as if he preferred to have a pine or a
 23 birch wood here possibly half a century hence--
 24%{for}% when⁹⁷ the land is "pine sick"
 25 ^rather than an oak wood at once--
 26 So he trifles with nature-- I am chagrined
 27 for him. That he would call himself an
 28 agriculturalist{!!} {H}e needs to have a guardian
 29 %{Let us purchase a mass for his soul}%
 30 placed over him.%^% A forest warden should be
 31 appointed by the town. Overseers of poor
 32 husbandmen
 33 He has got his dollars for the pine timber,
 34 & now he wishes to get his bushes of grain &
 35 {finger} the dollars that they will bring--& then
 36 Nature-- You may have your way again--
 37 %{A greediness that defeats its own ends}%

⁹⁷"when" crossed out in pencil

1 Let us purchase a mass for his soul.
2 %v sep { }%
3 I examined a little lot of his
4 {abut} a dozen rods square just this
5 side--~~ap~~. cut off last winter. ap.
6 2/3 p white pine & 1/3 white oak-- Last
7 year the white pine seed was very abundant
8 but there was little or no white o. seed--
9 Accordingly I noticed 20 or more seedling
10 white pines of this year over the barest
11 spots--but not a single seedling oak--
12 This suggests how much the species
13 of the succeeding forest may depend--on whether
14 the trees were fertile the year before they
15 were cut, or not.
16 I see a very large wht o acorn--which
17 has a double meat--with a skin between--
18 There is a very young grub in it.
19They appear Last years' hemlock & larch {leaves} that
20 to be⁹⁸
21 still hold on in great numbers--!
22 As time elapses & the resources for which
23 our forests have been {riffled} fail--we shall
24 of necessity be more & more convinced of the sig-
25 nificance of the seed.
26 I see in a thick p. pine wood half a
27 dozen stout pine twigs 5/8 inch thick
28 that have been gnawed up with the plumes
29 --why? %v 10 ps forward%
30// Hear the alder {locust} still
31 %{robins}%
32 Robins ap. more numerous than a month
33 ago
34// See grackles in cornfields in

⁹⁸"They appear to be" inserted in l. margin, partly under line

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34

2 places today

It chanced that here were 2 proprietors within half a mile who had done exactly the same, i.e. accepted part of a woodlot that {was} forced on them--& I have no doubt that there are several more exactly similar cases within that half mile ~~radius~~ diameter.

The history of a woodlot is often if not commonly here--a history of cross purposes--of steady & consistent endeavor on the part of nature--if interference & blundering with a glimmering of intelligence of the 11th hour on the part of the proprietor-- The proprietor of wood lots commonly treats nature as an Irishman drives a horse--by standing before him & beating him in the face all the way across a field.

{v p 208}

If I find any starved pasture in the midst of our woods--& I remember many such--& they are the least valuable tracts we have--I know that it has commonly had such in history as Wheelers⁹⁹ woodlot (above)-- It was burned over when cut & perhaps cultivated a year or two--often because the owner thought it was what the soil needed in order that it might produce trees. {In some cases} %sense% There may be (%some truth%) in his course if he can afford to wait a century instead of a third of that time for a crop. {It depends} {on what the trees are--the locality &c-- But commonly the owner who adopts} {this course makes a move in the dark & in 99 cases in a hundred [] his own fingers}

⁹⁹crossed out in pencil

1 The time will soon come--if it has
2 not already--when we shall have to
3 take special pains to secure & encourage
4 the growth of white oaks--as we
5 already must that of chestnuts for
6 the most part. These oaks will be-
7 come so scattered that there will be
8 not seed enough to seed the ground
9 rapidly & completely--

10 Horace mann tells me that he found in the
11 crop on inside of the stake driver killed
12 the other day--1 grass hopper--several
13 thousand legs 1 to 1 1/2 inches long--& not
14 much else.

15 It commonly happens in settled countries
16 like this that the new community of pines--
17 sprung from seeds blown off from an older one--
18 is very youthful compared with the trees it sprung
19 from{--}because many successive crops of trees
20 or seeds have been planted up or cut--before
21 the owner allowed nature to take her course.

22 Naturally the pines spread more steadily
23 & with no such abrupt descents.

24 In the wild wood at least--there are
25 commonly only pines & insects or blight--&
26 & the cattle
27 not the axe & plow ^ to interrupt the regular
28 progress of things.

29 17
30 Oct ~~18~~--60

31 Pm to Walden woods

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32

The trees which with us grow in masses
--i.e. not merely scattering--are
{1}2 White & P. pine
3 Oaks
4 White birch
5 Red maple
6 Chestnut
7 Hickory

Alder
Hemlock--spruc{h} & larch
Cedar (white & red)
Willow
Locust
Apple
Red cherry (in neighboring trees.) w.
Sugar maple (rare
Of these only white & p. pine--
oaks--white birch, & red maple are now
both important & abundant--(Chestnut &
hickory have become rare).

It is an interesting inquiry what determines
which species of these shall grow on a {given}
tract. It is evident that the soil determines
this to some extent--as of the oaks only the
swamp white skirts in open meadows--& so far
as these ^ trees are concerned--swamps will
be composed only of red-maples--swamp wht os--
white birch & white pine.

By removing to upland--we get rid of the
swamp--{wht} o. & red maples in masses.

1 & are reduced to white & p. pine--oaks
2 & white birch only--(i.e. of those that are abundant
3 & important)
4 2d ownership--& a corresponding difference
5 of treatment of the land--as to time of cutting
6 &c decides the species--
7 3d age--or, if the trees one 100 years old, they
8 may be chestnut--but if sproutland are less
9 likely to be. &c &c &c--

10 The noblest trees--&c those which it
11 took the longest to produce--& which are
12 the largest lined--as Chestnuts hickories (?)
13 oaks--are the first to become extinct
14 under our present system & the hardest
15 to reproduce--& their place is taken
16 by pines & birches--of feeblor growth
17 than the primitive pines & birches--for
18 want of a change of soil.

19 There is many a tract now leaving a poor &
20 decaying
21 ^crop of birches--or perhaps of oaks--
22 dying when a quarter grown & around with
23 fungi & excrescences--where 2 hundred
24 years ago grew oaks or chestnuts of
25 the largest size--

26 I look through a lot of young
27 (exclusively oak--the E part)
28 Os 20 or 25 years old--(Warrens {~~we~~)
29 E of the Deep Cut) There are plenty
30 of little os from a few inches to a foot in
31 height--but on examination I find fewer
32 seedlings in prop to the whole-- (ie manifestly

1
2 seedlings) & they have much older & ~~poorer~~
3 than the os in dense pine woods
4 longer & poorer or more decayed roots--^
5 oftenest ~~the~~¹⁰⁰ they are shoots from the end of
6 a horizontal twig running over a foot
7 under the leaves--& leading to an old
8 stu{m}p under the surface-- But I must
9 examine again & further.
10 %(& seeking very carefully for oak seedlings & anything else of the kind%
11 Looking thro' this wood %^% I am surprised to see
12 %where the wood was chiefly oak%
13 %^%a cluster of little chestnuts 6 inches high
14 & close together. Working very hard underneath
15 I easily lift them up with all their roots--
16 4 little chestnuts 2 years old--which partially
17 died down the 1st year--& to my surprise I
18 find still attached 4 great chestnuts from
19 which they sprung--& 4 acorns which have
20 also sent up puny little trees beneath the
21 chestnuts-- There⁸¹⁰¹ ^ {nuts} all lay within a
22 diameter of 2 inches about 1 1/2 inches
23 %If I had not been looking for something of the kind I should never have seen either
24 the oaks or the}%
25 %{chestnut}%¹⁰²
26 beneath the present leafy surface--in a
27 %Such is the difference between looking for a thing & waiting for it to attract
28 your attention}%
29 very loose soil of not half decayed leaves--in the
30 midst of %In the last case you will probably never see it at all}%
31 ^ this young oak wood.%^% They were evidently
32 planted
33 placed¹⁰³ there 2 or 3 years ago by a squirrel
34 or mouse-- I was surprised at the
35 sight of these chestnuts--for there are
36 not to my knowledge any chestnut trees
37 --none at least nearly large enough to bear
38 nuts--within about half a mile of that
39 spot--& I should {about} as soon have expected
40 to find chestnuts in the artificial pine grove
41

¹⁰⁰"the" inserted and then crossed out

¹⁰¹"T" poss written over "t"

¹⁰²"chestnut" actually is on the line below justified to the right

¹⁰³vertical lines setting off planted and placed

1
2 further thro{' } the woods toward Lincoln
3 I was surprised to see how many little
4 there were
5 chestnuts ^ north 2 or 3 years old &
6 some even 10 feet high, scattered through
7 also
8 them--& ^ under the dense pines as oaks{--}
9 are--I should say there was one every
10 made more distinct by their yellow leaves on the brown ground
11 half dozen rods^--which surprised me be-
12 cause I had not attended to the spread of the
13 chestnut--& it is certain that every one
14 of these came from a chestnut placed
15 there by a quadruped or bird--which
16 had brought it from further east where
17 alone it grew.
18 You would say that the squirrels &c
19 went further for chestnuts--than for acorns
20 in proportion as they were a greater rarity--
21 I suspect that a squirrel may convey them
22 sometimes 1/4 or a half a mile even--and
23 no doubt
24 ^as soon as a young chestnut 15 or 20 feet
25 far advanced beyond the chestnut woods which no ~~mortal~~ man discovers
26 high ^ bears a single bur--^a squirrel or bird
27 is almost sure to gather it--& plant
28 or still further forward
29 it in that neighborhood.^ A squirrel goes
30 %the boys}%
31 a chestnutting perhaps as far as {we}¹⁰⁵ do, &
32 when he gets there--he does not have to shake
33 or club the tree{--}or wait for frost to open
34 the burs--he waks¹⁰⁶ up to the bur & cuts it
35 off--& strews the ground with them before
36 they have opened--& the fewer they are in
37 the wood--the more certain it is that he will ap-

¹⁰⁵"we" crossed out in pencil

¹⁰⁶no "l"

1 propriate every one--for it is no transient after
2 noon pic-nic with him--but the pursuit of
3 his life--a harvest that he gets as surely as
4 the farmer his corn.

5 Now it is important that the {owners} of these
6 wood lots should know what is going on here--
7 %{& the squirrels}%
8 & treat them %^% accordingly. They little dream
9 of what the squirrels are about--know
10 only that they get their seed corn in the
11 adjacent fields & encourage their boys
12 to shoot them every may--supplying them with
13 powder & shot for this purpose--

14 In newer parts of the country they have
15 squirrel hunts on a large scale & kill
16 many thousands {in} a few hours, & all
17 the neighborhood rejoices--

18 Thus it appears that by a judicious letting
19 Nature
20 ^a {long} merely--we might recover our
21 chestnut wood in the course of a century.

22 This also suggests that you cannot
23 raise one kind of wood {alone} in a country
24 unless you are wishing to plant it yourself--
25 If no oaks grow within {miles} of your pines--
26 the ground under the pines will not be filled with
27 little oaks--& you will have to plant them--
28 of dif. kinds
29 Better have your wood ^ in narrow
30 lots of 50 acres ~~or~~ & not one kind
31 covering a township--

32 I took up a red-o seedling of this
33 year 5 inches high-- In this case the top

1
 2 is larger--putting length & breadth {together}--
 3 than the root--& the great acorn is still
 4 perfectly sound--lying on its side & the plant
 5 this first year evidently derives a great
 6 part of its nourishment from it. The root
 7 is abruptly curved back under the acorn--
 8 & I find that seedling or young oaks
 9 generally have roots which slant off more
 10 or less horizontally--from where the acorn lay--
 11 2 to 5 or 6 inches & then having acquired their
 12 greatest thickness--discard straight downward--
 13 -- To this irregularity is some times added
 14 a half turn or spiral in the upper part
 15 of the root--¹⁰⁷ or looking down on it
 16 The acorn is still so round that I think it must
 17 continue to furnish nourishment to the plant a
 18 part of the next year.
 19 Apparently the pine woods are a natural
 20 nursery of oaks--from whence one might
 21 easily transplant them to our grounds--&
 22 thus save some of those which annually
 23 decay while we let the pines stand-- Experience
 24 has proved at any rate that these oaks will
 25 bear exposure to the light.
 26 It is remarkable that for the most
 27 part there are no seedling oaks in the
 28 open granary fields & pastures-- The acorns

¹⁰⁷drawing takes up 2 or 3 lines of the page, including line above where it is drawn partly over "or"

1 are little likely to succeed if dropt there--
2 ~~Yet~~ There springing up in such places appear
3 to have been dropt or buried by animals when
4 on their way with them to another covert--
5 %v. bot of {next p Hereabouts}%
6 I examine under the p. pines by
7 thrush alley to see how long the oaks
8 live under dense pines-- The oldest oaks
9 v 2 ps forward¹⁰⁸
10the¹⁰⁹ are almost 8 or 10 years old-- I see
11 none older under these & other dense
12 pines--even when the pines are 30 or more¹¹⁰
13 years old--though I have no doubt that
14 oaks began to grow there more than
15 20 years ago-- Hence they must have died
16 & I suppose I could find their great
17 roots in the soil if I should dig for them.
18 I should say that they survived under a very
19 dense pine wood only for 6 to 10 years.
20 This corresponds exactly with the experience of
21 the English¹¹¹ planter--who {begin} to shred the
22 branches--often nursing pines when the oaks
23 are 6 or 7 years old--& to remove the pines
24 altogether when the oaks are 8 to 10 years old.
25 But in openings amid the pines though only
26 a rod in diameter--or where the pines are
27 thin--& also on {their} edges--the oaks
28 shoot up higher & become trees-- & this
29 shows how mixed woods of oak & pine¹¹²
30 are produced. If the pines are quite
31 small or grow but thinly--fewer acorns
32 will be planted amid them it is true, but

¹⁰⁸interlineation poss. in pencil

¹⁰⁹poss "they"

¹¹⁰blotch?

¹¹¹according to Torrey, 1906 edition

¹¹²transposition line starts over "oak" and goes under "& pine"

1
 2 none will come to trees--& so you have
 3 a mixed wood--or when you thin out
 4 a pine wood--the oaks spring up here &
 5 there--or when you thin an oak wood
 6 the pines plant themselves & grow up in like
 7 manner--
 8 many accidents
 9 It is surprising how ~~much~~ these seedling oaks
 10 will survive. We have seed¹¹³ that they commonly
 11 survive 6 to 10 years under the thickest pines{--}
 12 and acquire stout & succulent roots-- ~~A pine~~
 13 {bear} Not only they bear the sudden exposure to
 14 the light when the pines are cut--but in case
 15 of a more natural succession--when a fire
 16 & birches & maples--& oaks
 17 runs over the top & kills pines ^ 20 feet high
 18 these little oaks are scarcely injured at all--
 19 & they will {still} be just as high the next
 20 year--if not the fall of the same year
 21 if the fire happens early in the spring.
 22 Or if in the natural course of events--a fire
 23 nor a hurricane
 24 does not occur ^ the soil may at least be
 25 exhausted for pines--but there are always
 26 the oaks ready to take advantage of the
 27 least yielding & feebleness¹¹⁴ ~~of~~ of the pines--
 28 Hereabouts--a pine wood--or
 29 even a birch-wood--~~but~~ is no sooner established
 30 than the squirrels & birds beg. to plant acorns
 31 in it-- 1st the pines then the oaks--& coniferous
 32 trees--geologists tell us are older as they
 33 are lower in the order of development¹¹⁵ {were}
 34 created before oaks-- %v top of last p.%

¹¹³prob. misspelling of "seen"

¹¹⁴transposition line starts above "yielding" and goes under "& feebleness"

¹¹⁵possibly a dash after "development"

1 Saw the same last fall & before
2 I observe today a great many p.
3 pine plumes cut off by squirrels &
4 strewn under the trees--(as I did
5 The next day--(18th) I see 20 pine ~~plumes~~ twigs some 3 plumed
6 yesterday-- at Beck stows recently gnawed off wood lying under one tree--
7 This is to be seen now on all ridges of the town-- Why so?
8 I count the rings of a white pine
9 sawed off in Laurel glen a few years
10 ago--about {130}. This probably
11 was really of the 2d growth at least{,}
12 but probably now even the 2d growth is all
13 gone in this town. We may perceive that
14 here
15 any forest tree ^ 130 years old belongs to the
16 2d growth--at least-- We may say
17 that all pines & oaks of this age or growth
18 are now extinct in this time--& the
19 present generation are not acquainted
20 with large trees of these species.
21 A month ago I saw the smoke
22 of many burnings in the horizon--(even now
23 see one occasionally) & now in my
24 walks I occasionally come to a field
25 of winter rye already greening the ground
26 there
27 in the woods where such a fire was ^ kindled.
28 If any one presumes that after
29 all these must be so many mts planted
30 as we see oaks spring up at once when the
31 pines are cut-- We must consider that
32 ac to the alone calculation (2 {pgs} back)
33 there are some 10 years for the animals
34 to plant the oak wood in-- So that

1
 2 if the tract is 10 rods square{--}or contains
 3 100 square rods--it would only be necessary
 4 that they should plant 10 acorns in a
 5 which should not be disturbed oak
 6 year ^ in order that there might be 1 ^ to every
 7 square rod at the end of 10 years.
 8 But some English planters--plant only one acorn to 2 or 3 rods
 9 This or any thing like this does not imply
 10 Others 4 or 5 times as many, v 7 ps forward.
 11 any very great activity among the squirrels.
 12 A striped squirrel could carry enough in his checks at one trip.
 13 While the man that killed
 14 & many others
 15 my lynx ~~calls~~ thinks it came out of a
 16 menagerie--& the naturalists call it
 17 the Canada Lynx--and not ~~N. H~~ the
 18 white mts they call it the Siberian Lynx--
 19 In each case forgetting ignoring that
 20 it belongs here--I call it the Concord
 21 Lynx.

22 Oct 18th--60

23 Pm to Merriams wht Pine Grove.

24 I often see amid or beside a Pitch or
 25 white pine¹¹⁶ grove--though 30 years old--
 26 a few
 27 ~~the~~ yet larger & older trees--from¹¹⁷ which
 28 they came rising above them--like patriarchs
 29 surrounded by their children.

30 Early cinque foil again.

//

31 I find fair looking white oak-a. which abound
 32 on the trees near Beck stows to be decayed {&}¹¹⁸ on
 33 the tree. Wishing to see what proportion were de-
 34 cayed I pulled down a bough--& plucked¹¹⁹ 41 acorns
 35 which I cut open successively with my knife. Every
 36 one was soft & decayed--~~a~~ black or dark--

¹¹⁶poss "Pine"

¹¹⁷poss written over "on"

¹¹⁸poss a stray mark

¹¹⁹"ed" poss crossed out in pencil

1 brown within--though there was not a
 2 single worm in them. Indeed, abundant
 3 & beautiful
 4 ^as the crop was they were all decayed on
 5 that & the neighboring trees--& I only found¹²⁰
 6
 7 one sound one after long search. This
 8 was probably they held on still so numer-
 9 ously--& beside the squirrels did¹²¹ not dis-
 10 turb them. They¹²² were probably killed by
 11 the frost about Oct 1st.
 12 Abundant as the crop was or promised to
 13 be 3 weeks ago-- Perhaps half of them have
 14 already been destroyed thus. Those that
 15 were touched first & most severely are
 16 paler brown on one or both sides.
 17 Here, or on these trees, was a whole
 18 crop destroyed before it fell--though
 19 remarkably abundant. How many ~~hundred~~
 20 or thousand bushels there must be in
 21 this state in this town!
 22 See how an acorn is planted by a squirrel--
 23 just under a loose covering of moist leaves--
 24 where it is shaded & concealed--& lies
 25 on its side on the soil--ready to send
 26 down its radicle next year.
 27 If there are not so many oak seedlings
 28 in a deciduous wood as in a pine
 29 one--it may be because both oaks
 30 (& acorns) & squirrels love warmth. The
 31 ground does not freeze nearly so hard
 32 under dense pines as in a decid-

¹²⁰"found" crossed out in pencil

¹²¹"did" crossed out in pencil

¹²²"They" crossed out in pencil

1 Methinks you do not see numerous
2 & sizes
3 oaks of all ages in an old oak wood--
4 but commonly--large trees of about
5 the same age--& little ones like
6 huckleberry bushes under your feet--
7 & so commonly with pine woods-- ~~if~~
8 In either case, if the woods are well
9 all the trees in them¹²⁵
10 grown & dense--~~they~~ ^ appear to have been
11 planted at the same time
12 For aught that I know I would {namely}
13 rather have a young oak wood--which
14 has succeeded to pines--than one that has
15 succeed to oaks--for they will {make} better
16 trees--not only because the soil is new
17 to them--but because they ~~are for~~
18 are all
19 ~~more~~ seedlings ~~among them~~ while in the
20 other case for the greater part are sprouts
21 --just as I would prefer apple trees {2 years}
22 5 or 6 from the seed
23 {~~from the land~~} ~~4 or 5~~ years old for {my} orchard
24 to ~~those~~ {suckers} from those which have
25 come to maturity or decayed. Otherwise
26 your young oaks will soon, when half
27 grown--have the diseases of old trees--
28 warts & decay.
29 I find that Merriams wht pine
30 grove is on the side of an oak wood
31 --the old oak stumps--being still very
32 common-- The pines appear to be some
33 40 years old. The soil of pine leaves
34 is 1 to 1 1/2 inches thick. -- -- -- --

¹²⁵poss "there"

1
 2 The oldest little oaks here are 5 years
 3 old & six inches high.
 4 Am surprised to see that the pasture
 5 {w}. of this--where the little p. pines were cut
 6 down last year--is now {even} more generally
 7 green with pines than 2 years ago--
 8 What shall we say to that management
 9 that halts between {2 courses}--does neither
 10 this nor that but botches both? I see
 11 {one} which
 12 many a {pasture} ~~where~~¹²⁶ the pitch or white
 13 pine are spreading--where the bushwhack
 14 is from time to time used with a show of vigor--
 15 %I say mine for the farmer evidently does not mean they shall be his}%
 16 & I despair of my trees--& yet this questionable
 17 work is so poorly done--that those very
 18 fields grow steadily greener & more forestlike
 19 from year to year--in spite of cows & bushwhack
 20 till at length the farmer gives up the
 21 contest--from shere¹²⁷ weariness--& finds him-
 22 self the owner of a wood lot. Now whether
 23 wood lots or pastures are ~~best~~ f most
 24 profitable for him I will not undertake
 25 to say--. but I am certain that a woolot¹²⁸
 26 & pasture combined is not profitable.
 27 I see {spatterdock} pods & pontederia
 28 in the little pool at S end of Beck stow's
 29 { }
 30 How did they get there--no stream in this {one}?
 31 %we might as well ask how they got anywhere, for}%¹²⁹
 32 ¹³⁰Indeed %^% all the pools & fields have been
 33 %2%stocked thus--& we are not to suppose as
 34 many were creations as pools. ¹³¹It was perhaps

¹²⁶caret directly under cancelled word "where"

¹²⁷shear?

¹²⁸missing the "d" for "woodlot"

¹²⁹interlining on page (in brackets) based on 1906 edition

¹³⁰pencil line encloses 3 lines from "Indeed" through "as pools."

¹³¹line separating "It was perhaps"

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32

We see thus how the fossil lilies which¹³⁷
the geologist %^% detect%ed% %^% were¹³⁸ dispersed--as well
as these {which} we carry in our hands to
church¹³⁹.

%1%

The development theory implies a greater
vital force in nature--because it is more
¹⁴⁰flexible & accommodating--& equivalent
to a sort of constant new creation.

Mr Alcott tells me that the
red squirrel which live in his elms--go
off to the woods (p. pines behind his house)
about June--& return in September--when the
bitter nuts &c are ripe. Do they not go
off for hazel nuts & pine seed? No doubt
they are to be found where the food is.
Young oaks--esp. white oaks--in ^{open} woodland
hollows--& ~~often~~ on plains--almost annually
killed down by frost--they are so tender--large
tracts in this town are bare for this reason.
Hence it is very important that the little
oaks when they are tenderest should have the
shelter of pines--and other trees as long as they
can bear it--or perhaps till they get above
the level of the frost. I know of extensive
open areas in the woods where it would be of no
use to sow acorns or to set seedling oaks
for every one would be killed by the frost
as they have already been--but if you were
to plant pines thinly there, or thickly at

¹³⁷pencil line in right margin marks 3 lines--prob. end of para
¹³⁸"were" crossed out in pencil
¹³⁹poss "Church"
¹⁴⁰blotch--wax-like mark in left margin--also on facing page

1 first & then thin them out--you could
2 easily raise oaks--for often you have only
3 got to protect them till they are 5 or 6 feet
4 high--that they may be out of the way of ordinary
5 frosts--whose surface is as level as that of
6 a lake.

7 v. Emerson on oaks
8 Ac to Loudon ^ the best authorities say--
9 plant some 250 acorns to an acre--
10 (i.e some from 300 to 500, others from 60 to
11 100) or about 1 1/2 ~~trees to an acre~~ rod--~~or~~
12 acorns
13 or 240 to an acre--

14 In my walk in Walden woods yesterday--
15 & chestnuts
16 I found that the seedling o.s ^ were most common
17 under the fullest & densest white pines--as that
18 at Brister Spring--

19 Oct 19--60

20 Pm to Conantum--

21 // Indian summer-like--& gossamer--

22
23 That white O. in Hubbards grove--which

24 on the 7th was full of those glossy black acorns
25 is still hanging full to my surprise-- Suspecting
26 the cause I proceed to cut them open &

27 find that they are all decayed or decaying--

28 ~~Even~~ When¹⁴¹ %if%

29 ~~if~~ not black within--they are already

30 sour & softened. Yet Rice told me

31 that he collected from this tree about

32 a week ago some thousands of acorns

33 & planted them in Sudbury. I can

34 tell him that probably not more

35 than half a dozen of them were

36 alive--though they may then have looked

¹⁴¹"When" crossed out in pencil

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32

well-¹⁴²as they do now externally.

First then I was surprised at the abundance
by the time I had got accustomed to that {frost} I was surprised
of the crop--this year--2dly ^ at the vast
proportion that were killed ap. by frost.

The squirrels are wiser than to gather
these.¹⁴³ But I see where they have gathered
many black oak acorns--the ground beneath
¹⁴⁴being strewn with their crops which have each
a piece bitten out--in order to get out the
acorn. I suspect that black & red O.
acorns are not so easily injured by frost--
indeed I find this to be the case as far as
I look.

Sophia tells me that the large swamp
white O. acorns in their {cups}--which
she gathered a fortnight ago--are now
all mouldy--about the cups--or bare of the
acorn.

It is a remarkable fact--& looks like a
glaring imperfection in Nature--that the
labor of the oaks for the year should be lost
to this extent. The softening or freezing¹⁴⁵ of
cranberries--the rotting of potatoes--&c &c
seem trifling in comparison. The pigeons
jays {&} squirrels--& woodlands are thus
impoverished. It is hard to say what great
purpose is served by this seeming waste.

I frequently see an old & tall pine wood
standing in the midst of ^a younger but more ex-

¹⁴²stray mark before word

¹⁴³horizontal pencil line curves up after "these" and continues under line 7

¹⁴⁴blotch in margin--also on facing page

¹⁴⁵poss "freezing"

1
2 that form the solid phalanx.
3 ¹⁴⁷Pines take the first & largest strides--
4 %1% Oaks march deliberately in the rear--
5 %{In this case to continue my analogy}%
6 It is evident to any who attend to the matter
7 pines here
8 that ~~oaks~~ are ^ the natural nurses of
9
10 the oaks--& therefore they grow together
11 By the way--how nearly identical is the range
12 of our pines with the range of our oaks?
13 %{Perhaps O.s extend beyond them Sward where there is less danger of frost}%
14 The new woodland i.e. forest that
15 spring up where there were no trees before--are
16 pine (or birch or maple) & accordingly
17 you may see spaces of bare pasture sod
18 between the trees for many years-- But
19 oaks in masses{,} are not seen ~~there~~
20 springing up thus with old sod between
21 them-- They form a sproutland--or stand amid
22 recent
23 the stumps of a ^ pine lot.
24 It will be worth the while to compare seedling
25 oaks with sproutlands--to see which thrive
26 best.
27 I see on the side of F. H. hill pines which
28 have spread ap. from the N. 100 rods--
29 & the hill side begins to near the appearance
30 of {—} woodland--though there are many cows
31 feeding amid the pines. The custom with
32 us, is, to let the pines spread thus into the
33 pasture--& at the same time to let the cattle
34 wander there--& contend with the former
35 for the possession of the ground, from time

¹⁴⁷2 lines marked by pencil line in left margin

1 to time coming to the aid of the cattle
2 with a bushwack. But when, after
3 15 or 20 % {they have suffered terribly &} %
4 some ^ 25 ~~or 30~~ years, the pines have fairly
5 % {though} % {over us both though ^ the ground is strewn with their dead} %
6 prevailed%^-- We then suddenly turn about
7 coming to the aid of the pines with a
8 {whip} & drive the cattle out--they
9 shall no longer be allowed to scratch their
10 heads on them--& we fence them in. This
11 is the actual history of a great many
12 of our woodlots. While the English
13 have taken great pains to learn how
14 to ~~pro~~ create forests--this is peculiarly
15 our mode. It is plain that we have
16 thus both poor pastures & poor forests.
17 I examine that oak lot of
18 Rices next to the pine strip of the 16th
19 Oct. 31st count 10 rings on one
20 The oaks (at the S end) are about a dozen^ sprout
21 years old-- As I expected I find the stumps
22 quite fresh & distinct
23 of the pines which stood there before ^ & I
24 not much decayed
25 find by their rings that they were about 40
26 years old when cut, while the pines which
27 sprang from are now about 30. ~~But farther~~
28 But further & unexpectedly I find the stumps
29 in great numbers--now much decayed
30 of our oak wood which stood there
31 more than 60 years ago. They are mostly
32 shells--the sap wood rotted off--& the
33 inside turned to mould-- Thus I dis-
34 tinguished 4 successions of trees--
35 Thus I can easily find--in countless
36 numbers in our forests--frequently in the

1 then expect pines--not otherwise.

2 I examined the huckleberry bushes next
3 %dense%
4 the wall in that same {%^%} p. & white pine
5 strip. I found that the oldest bushes were
6 8 or
7 about 2 feet high & some ^ 10 years old.

8 & digging with spade & hands--(%I found%)% that
9 their roots did not go deep--but that
10 they spread by a vigorous shoot which
11 forked several times--running just under
12 %soil%
13 the leaves or in the surface%^%--(so that they
14 %one ran}%
15 could be easily pulled up)^% 7 feet before
16 %& was%
17 one broke--(probably 10 feet or more)
18 %in all% %in length%
19 & 3 or 4 bushes stood on this shoot--
20 & through these bushes after a few years did
21 not grow more than an inch in a year--
22 these subterranean shoots had grown
23 6 to 12 inches at the end--& these {seemed}
24 to be all the vigor of the plant. The
25 largest bushes preserved still a trace
26 of this origin from a subterranean shoot
27 %on}%
28 the limbs being one sided & the {brash}
29 aslant. It is very likely then (if not
30 certain) that these roots are as old
31 as the pine wood which overshadows
32 them--or it is so long since the seedling
33 huckleberry came ap. there{.} The pines
34 %separate}%
35 were 30 years old--but some of the %^% huckle-
36 berry bushes were 10 {-} & were sending up
37 %still}%
38 new & vigorous shoots. The same was
39 ¹⁵⁰the case on a smaller {reveal}¹⁵¹ with the
40 %2%v. vacillans & the Pensylvanicum. {The last
41 for several feet
42 one of course on a smaller scale. You could see the v. vacillans
43 growing in rows ^ above the subterranean shoots.} %indicating where it was}%
44 The shoot turns up to make a bush thus {drawing}¹⁵²

¹⁵⁰pencil line in left margin includes 2 lines

¹⁵¹"on a smaller {reveal}" crossed out in pencil

¹⁵²line written in the left margin vertically in ink with drawing from line 36-
15

1
 2 A huckleberry bush is ap in its p. at 5 to 7 yrs & the oldest are 10 to 12 yrs.
 3 Thus the roots of huckleberries may survive
 4 till the woods are cut again. They certainly
 5 Plants of this order (Ericaceae) are said to be among the
 6 will here. earlier ones among fossil plants--& they are likely to be
 7 among the last.
 8 The oldest o. (fairly speaking) in this wood
 9 --was a black-- --13 years old. Its root as
 10 usual ran {not} straight down but with
 11 a half turn or twist (as well as to one side)
 12 which would make it harder to pull up at any
 13 rate.
 14 The white o. acorn has very little bitterness
 15 chestnuts
 16 & is quite agreeable to eat. When ~~acorns~~
 17 are away--I am inclined to think them as good
 18 as they. At any rate it braces my thought
 19 more & does me more good to eat them
 20 than it does to cut chestnuts-- I feel the
 21 stronger even before I have swallowed¹⁵⁴ one.
 22 It gives me heart & back of oak.
 23 or possibly mice
 24 I found that the squirrels ^ which
 25 have their holes about those old oak
 26 stumps--ran along in various directions
 27 through the roots whose insides are
 28 rotted away--leaving a ~~thin~~ wall of thin
 29 bark which prevents the earth falling in.
 30 {such} are their high ways under ground.
 31 The holes alone led to them.¹⁵⁵
 32 On the monuments of the old settlers
 33 of this town--if they can be found are
 34 recorded their names & ages & the time
 35 of their death--& so much can

¹⁵³page number actually under first line of text

¹⁵⁴"swa" written over text--indicated with a caret

¹⁵⁵horizontal pencil line below 31

1 be read on these monuments of the oaks--
2 --with some additional reliable information
3 as where they lived--& how healthily--& what
4 trees succeeded them--&c &c-- %v collection%

5 ¹⁵⁶Looking at Sophia's large collection
6 of acorns from Sleepy hollow & elsewhere
7 white o.
8 I cannot find a sound one (i.e not decayed)
9 {or} blackened
10 but the black & shrub os at least
11 are sound. This suggests that the
12 very fertile shrub os are more sure of
13 su{c}ceeding & spreading--while the noblest
14 oak of all--may fail.

15 First by examining the twigs (v Coultas)
16 you tell the age & the number of shoots--& the
17 leaves & the various accidents of the tree
18 for half a dozen years past--can read
19 its history very minutely--& at length when
20 it is cut down--you read its ancient &
21 general history on its ~~trunk~~ stump.

22 ¹⁵⁷If you would know the age of a
23 young oak--lot-- Look round for a sprout
24 for there will commonly be some to be found even
25 in a seedling wood--cut & count the
26 rings-- But if you have to count
27 the rings of a seedling begin about 6 inches
28 ~~1-foot~~
29 from the ground--for it was prob. so
30 high when the previous wood was cut.
31 %from top of a p. pine%

¹⁵⁶pencil line in l. margin mark this paragraph

¹⁵⁷pencil line in l. margin mark these 2 lines

Oct 20th 60

E. Hosmer tells me to-day that while digging {mud} at the poke-logan the other day he found several fresh acorns planted an inch or 2 deep under the grass just outside the oaks & bushes there.

Almost every observant farmer finds one such deposit each year.

If that Merriam lot {is} 15 rds square --then instead of there being no oaks in it there are some 2500 oaks in it--or far more oaks than pines. Say 5 times as many for there are prob. not ^ 500 pines in the lot

This is only one of the thousand case in which the proprietor & woodchopper tell you that there is not a single oak in the lot. So the tables were turned and so far as numbers were concerned it¹⁵⁸ Pm to Walden Woods to examine old stumps--

In trillium¹⁵⁹ wood the trees are chiefly pine & I judge them to be 40 ^ years old or more-- though there are not a few oaks &c--beneath them I find some old p. pine stumps & one white p. They would not be seen by a careless observer--they are indistinct mounds & preserve no form nor marks of the axe. This is low ground. Part of¹⁶⁰ The cores ^ of the stumps are never the less preserved by {fat}.

I then Look at farmer's Hill lot E of the Deep Cut. This is oak cut as I remember--some 25 years ago-- the trees say 5 to 8 inch diameter

¹⁶¹would have been truer to say that this was an exclusively oak wood & that there were no pines in it. Truly appearances are deceptive{.}

¹⁵⁸r. margin vertical text in ink starts here and continues up the page

¹⁵⁹poss "T" written over "t"

¹⁶⁰"Part of" inserted

¹⁶¹This interlined material is inserted vertically after "were concerned it"

1 I find beneath the oaks innumerable
2 or rather distinct
3 pitch pine stumps well preserved^--some of
4 them 2 feet & more in diameter--with bark
5 But generally 15 inches in diam
6 nearly 3 inches thick {at} the ground--^ Though ap-
7 parently thoroughly rotten & if a rough (crumbly)
8 & more or less covered with fine moss (hypnum)
9 conical form--^they were firm within
10 on account of the fat in flakes on the
11 whole cone & frequently showed the trace
12 of the axe¹⁶² in the middle. I could get
13 after
14 cart-loads of fat pine there now--^lifting
15 out with my hands the whole cone--or
16 clear mass of yellow fat. When the
17 stump was almost a mere mound mossed
18 over--breaking off an inch or 2 deep of the
19 crust with the moss--I could still trace
20 on one side--the straight edge made by the
21 axe. There were also{--} esp on the lower
22 or northern side--some large oak stumps
23 no doubt of the same age. These were much
24 better preserved than the pines (at least the
25 part {above} ground) The whole shape & almost
26 even stroke of the axe apparent sometimes, as
27 in a fresh stump. I counted from 70 to 75 rings
28 on one. The present {wood} appears to be
29 chiefly from the seed--with some sprouts--
30 The later 2 or more close together with the
31 The sprouts I think were from small trees
32 old stump more or less over ground^. (Methinks
33 you do not see trees which have sprouted
34 from old or large stumps 2 or 3 feet in

¹⁶²"c" corrected to "x"

1
 2 diameter-- I doubt if a very old wood, like
 3 by Hubbards--would send up sprouts from
 4 the stump.) I saw one ^{large} ^ oak stump so
 5
 6 much decayed--that it may have belonged
 7 to a generation further back.

8 I next examined Ebby Hubbard's old
 9 oak & pine wood. The trees may be a hundred
 10 years old. The older or decaying trees have been
 11 cut out from time to time--neglecting these
 12 more recent stumps--the very oldest evidences
 13 of a tree were a hollow 3 or 4 feet across--
 14 a hollow place in which squirrels have their holes
 15 in which you often slumped^--covered with
 16 many layers of leaves--& perhaps with young oaks
 17 springing up in it--for the acorns rolled into it--
 18 from
 19 But if you dug there--^under the moss
 20 (there was commonly a little green moss around it)
 21 & leaves & soil--in the midst of the
 22 {virgin} mould ~~of the tr~~ which the tree
 23 had turned to--you pulled up flakes &
 24 shoulder blades of wood that might
 25 still be recognized for oak--portions
 26 preserved by some quality which they con-
 27 centrated--like the fat leaves or veins
 28 of the pine--the oak of oak-- But
 29 for the most part it was but the mould
 30 & mildew of the grave.-- The grave
 31 of a tree which was cut or died
 32 80 or a hundred years ago there.

33 It is with the graves of trees as with those of

1 men--at first an upright stump
2 (for a monument) in course of time a
3 mere mound--& finally when¹⁶³ the corpse
4 has decayed & shrunk--a depression in
5 the soil-- In such a hollow it is better
6 to plant a pine than an oak.

7 The only other ancient traces of trees--were
8 perhaps the ~~moun~~ semiconical mounds
9 which had been heaved up by trees which
10 fell in some hurricane.

11 I saw where Ebby had tried a p.
12 pine with his axe¹⁶⁴--though there was not
13 a green twig on it--& the woodpeckers had
14 bored it from top to bottom effectually proved it
15 if he had not been blind.

16 Looked at that p. & wht pine wood
17 just E of {~~Hub~~} Close at Brister spring--which
18 I remember as pasture some 30 years ago

19 The pasture is still betrayed under the
20 pines--by the firmer sward like surface--
21 there being fewer leaves & less of leafy mould
22 formed (less virgin soil)--& by the patches
23 of green (pine) moss--& white--cladonia
24 peeping out here & there.

25 ¹⁶⁵Young chestnuts (I dig up 3 or 4) have
26 not the large root that oak have.

27 I see the acorn after the tree is 5 or 6
28 years old.

¹⁶³inserted and written over text

¹⁶⁴poss "oxe" for "oxen"

¹⁶⁵2 lines framed by horizontal lines in margin above "Young" and below "not"

1 Also his Blackberry field pp. & a few
 2 white
 3 --Bear {Garden} p. pine--Wheeler Pig. Place--p. p.^
 4 p. p. & w. p. p. %213%
 5 W. F. H. Spring woods--E. Hub Close mound--Conantum
 6 Top--Masons Pasture (?)--Behind Bakers (?)
 7 p. pine wht. p. p. p.
 8 My field at Walden p. p.--Kettle Hill p. p.--More's
 9 was it New?
 10 Cornhill pp. cut say¹⁶⁹ 59--Behind moore's house (??)
 11 pp.
 12 --Front of Sleepy Hollow poplars p. p.--E wood's forest
 13 not New wood
 14 of Colburn Place (??)--John Hosmers {beyond} house (?)
 15 p. p. p. p.
 16 F. H. Hill side w. p. just begun--Merriams pasture
 17 beyond Beck Stows just begun p. p.--Old {coast} behind Hey-
 18 woods p. p.--Conants white p. crescent in Front¹⁷⁰ of W. Wheeler's--
 19 J. p. Brown pasture wht p.--%at Hemlock's--NW of Assabet Stone bridge--%
 20 %p. p.% %pp.%
 21 Tarbell's p{.} pines--Bakers above beech--p. p--Henry Shattucks p. p.
 22 N. W. of Farmers pp.--Wm Brown's pp--N of H. Shattucks p. p.--
 23 White & p pine S of Rices lot--P. P. NW of Old Corner School house--PP SE of New Corner
 24 School house
 25 %Large pp hill behind {Hagars} in Lincoln.%
 26 ~~Birches {wht}~~ In several of these New Woods
 27 ~~birch~~ p. pine--& birches can see the old
 28 cornhills still.
 29 The woods within my recollection have gradually
 30 withdrawn further from the village--& woody
 31 capes which jutted from the ~~village~~ forest
 32 toward the town--{are} now cut off & separated
 33 by cleared land behind-- The Irish have also
 34 made irruptions into our woods--in several places--
 35 & cleared land.
 36 Edmund Hosmer tells me of a grey squirrel
 37 which he kept in his old ({Everett}) House
 38 that he would go off to the {woods} every
 39 summer & in the winter come back & into
 40 his cage where he whirled the wire cylin-
 41 der. He would be surprised to see it take
 42 a whole & large ear of corn & run out
 43 a broken window & up over the roof of the

¹⁶⁹poss "may"

¹⁷⁰"F" written over "f"

1 corn-barn with it--& also up the elms.
2 We have a kitten 1/3 grown which
3 often carries its tail almost flat on
4 its back--like a squirrel.
5 Oct 22nd
6 Pm--to Walden woods--
7 // See¹⁷¹ in the yard many chip birds--
8
9 but methinks the chestnut crown is not
10 so distinct as in the spring--has a pale
11 line in mid of it--& many may be females
12 or young, have no chestnut at all. I
13 do not find them so described.
14 Are not maples inclined to die
15 in a white pine wood? There was the one
16 in Merriams grove & the sickly ones in
17 our grove in the yard.
18 I notice that the first shrubs & trees
19 to spring up in the sand on rail road
20 cuts in the woods--are sweet fern
21 --birches willows & aspens--%&% other¹⁷²
22 pines{.} p. & white.¹⁷³ but all but the last
23 2 chiefly disappear in the thick wood that
24 follows. The former are the pioneers.
25 Such sandy places--the edges of
26 meadows--& sproutlands are almost
27 the only localities of willows with us.
28 In the deep cut big wood--
29 (Stow's) Pines & oaks there are thousands

¹⁷¹poss "Seen"

¹⁷²"other" crossed out in pencil

¹⁷³transposition line starts over "p." and goes under "& white"

1 a pine growing near in an opening--
2 of the same height as to that branch--&
3 add the 2 rows together.

4 I found in the midst of this p. p.
5 wood{--}a white o. some 8 feet high
6 & 1 1/2 inch thick at ground which had
7 borne a great many--say 60 or 100 large
8 oak balls--& the ground beneath & near
9 by was strewn with the fragments of 50 of
10 prob. a squirrel--for a bird could barely have opened the hard ~~ke~~ nut-like kernel
11 within
12 them--which some creature ^ had opened
13 no doubt for their living contents & all
14 the inside was gone. They looked like egg
15 shells strewn about. Opening one I found
16 humpbacked
17 within the wood kernel--a ^ black fly
18 body & wings
19 nearly 1/2 inch long^--with a very large
20 or full shining black abdomen--& 2 small
21 The only 2 that I open have flies in them
22 black spots on each wing.

23 {Harris} says that the fly is the cynips
24 // confluens & that--the grub becomes a chrysalis
25 in the autumn & not commonly, a fly till spring--
26 though he has known {this} ^ {gall} fly to come out
27 It must have been squirrels (or mice) that opened them for birds could not
28 in Oct. break into the hard kernel.

29 Counted the rings of a white p. stump in
30 Hubbards (owl wood) by RR--94 years
31 so this was prob. 2d growth.

32 Swamps are of course least changed
33 with us--are nearest to their prim-
34 itive state of any woodland. Commonly they
35 have only been cut--not {redeemed}.

1
 2 I see how meadows were primitively
 3 kept in the state of meadow--by the aid
 4 of water--(& ever fire & wind)--
 5 E.g. Heywoods meadow--though it may
 6 have {been} flowed 100 years ago--by the dam
 7 below--has been bare ~~for~~ almost ever since
 8 in the midst of the wood. Trees have not
 9 grown over it Maples alders birches
 10 p & white pines are slow to spread into
 11 it. I have named them in the order of
 12 their slowness--the last are the {foremost}
 13 furthest into the meadow--but they are
 14 sickly looking. You may say that it
 15 takes a geological change to make a
 16 wood lot there.

17 Looked {a} stumps in J. Hosmers Lot hill-¹⁷⁵
 18 {1st}
 19 side S of ^ Heywood meadow--cut 11 years ago--
 20 1 white p. perfect in shape 41 rings--2 large
 21 oak stumps each 109 rings & a large p. p.
 22 prob same age. These stumps are all well pre-
 23 served--the whole amt live & the rings can for most
 24 part be counted--but they are successive ridges--
 25 & the bark is ready to fall off--& they are more
 26 or less mossed over--with cocks comb moss.

27 The main part of this¹⁷⁶ lot N of
 28 oak
 29 this hole is ap. ^ sprouts ~~of some age.~~ next RR.

30 I next look through Emersons
 31 Lot (half-burned & cut last spring)
 32 {year}
 33 The last ^ grown (& present) chiefly oak--with a
 34 little pine
 35 The stumps are chiefly p. pine & oak¹⁷⁷--with
 36 ap. some hemlock (?) & chestnut. %{v 3 ps forward}%

¹⁷⁵"hill" poss written over text

¹⁷⁶word partly obscured by blotch

¹⁷⁷transposition line from above "p. pine" and below "& oak" in pencil

1 and a little white pine. (so it seems the
2 p. pine & hemlock did not survive the old
3 the p. p. did not come up under itself
4 cutting^) The p. p. stumps--are all
5 decayed but the core & the bark--
6 & hardly in any instance show a trace of
7 the axe--they are low rounded mounds--
8 Yet the moist¹⁷⁸ parts are solid fat--&
9 the bark edge is very plain.--¹⁷⁹ The
10 oak stumps are very much better preserved--
11 --have half or 2/3¹⁸⁰ their form & show
12 3
13 that proportion of the cutting--yet ~~are~~
14 the sap wood is often gone (with the bark)
15 are as often the ~~h~~ inmost heart. You
16 can partially count rings even. Yet some
17 of these are as decayed as the pines--
18 & all flaky--2 turned up look like stumps
19 (the Os)
20 of old teeth with their prongs-- They are all
21 lose to the foot. Yet you will see the
22 white bark lying about a wht o. stump when
23 all the rest is about gone.-- ~~W~~ Most
24 of the old stumps, both oaks & pines can
25 easily be found now--but the rings of not one O. even
26 can be wholly counted or nearly-- -- I could not
27 be sure about the hemlock & chestnut
28 There was little moss on these stumps & either pine or oak--the
29 only that there was some of both-- latter too crumbly
30 E ~~& the former~~
31 The S^ part of this lot, beyond the
32 deep cone--is ap. an oak sproutland
33 in good part p. I see what were sprouts
34 from a scarlet O. stump 18 or more

¹⁷⁸blotch partly obscuring word

¹⁷⁹dash continues on for poss 1/5 of line

¹⁸⁰writes "3" neatly over blotched "3"

1
 2 inches in diameter & from white os 1 foot in
 3 diameter-- Yet in the other lot--though there
 4 were {a} many large oak stumps I did not
 5 notice¹⁸¹ that trees had ever sprung from them.
 6 You find plenty of old o. stumps without
 7 their trees in the woods--which (if nothing else--)
 8 shows that there is an end to their mode of propa-
 9 gation.

10 I could tell a wht p. here, where it was
 11 for the most part a mere rotten mound by the
 12 regularity cross{-}wise of the long knots {or
 13 frott}¹⁸² from the ground in the top of the rotten cone
 14 peculiarly
 15 --representing the ^ regular branches of the
 16 little white pine--& the best preserved as the
 17 hardest & pitchiest part.

18 It is apparent that fires often hasten the
 19 destruction of these stumps-- They are very apt to
 20 be charred.

21 I dug in the hollow here an oak had been
 22 & thought it was so completely decayed--that
 23 I found not a particle that looked like¹⁸³ de-
 24 cayed wood or even {bartk}--& my spade
 25 met with no resistance. Yet there were
 26 perfectly open channels raying out from
 27 this hollow with the pellicle of the root
 28 for a wall still--which for a hundred
 29 years the earth had learned to respect-- Indeed
 30 these stump both of this age & more recent
 31 are the very metropolis of the squirrels &
 32 mice. Such are their run-ways.

¹⁸¹stray mark after "notice"

¹⁸²1906 has "a foot"

¹⁸³blotch after "like"

1 % {Prob.} % Yet what is the character of our
2 gratitude to these squirrels--these
3 % {these dukes of Athol of many generations. Do we pay them a pension?} %
4 %vp 186%planters of forests?%^% We regard them
5 as vermin & annually shoot & destroy
6 them in great numbers--because {perchance}
7 --if we have any excuse--they sometimes devour
8 a little of our Ind. corn--while perhaps
9 they are planting the holden oak
10 corn (acorn) in its place. In various
11 parts of the country--an army of grown up
12 boys assembles--for a squirrel hunt-- They
13 chose sides, & the side that kills the
14 greatest number of thousands enjoys supper
15 % {& the whole neighborhood rejoices} %
16 at the expense of the other side.% ^ % Would it
17 civilized &
18 be far more ^ humane--not to say Godlike--
19 symbolical
20 to recognize once in the year by some significant ^
21 ceremony--the part which the squirrel plays
22 --the great service it preforms, in the economy
23 of the universe?
24 The Walden side of Emerson's
25 main woodlot is oak--(except
26 a few pines in the oak at the NW¹⁸⁴ or RR end)
27 & the oaks are chiefly¹⁸⁵ sprouts--some 30 years
28 old. Yet not to mention the p. pine stumps
29 --there are a great many oak stumps
30 without sprouts--& yet not larger stumps
31 than the others-- How does this happen--?
32 They are all of the same age--i.e cut
33 {at} the same time.

¹⁸⁴"W" inserted

¹⁸⁵"chiefly" double underlined in pencil

1 I have noticed in white oak acorns.
2 What if the eggs of any species of bird
3 should be added to this extent--so that
4 it should be hard to find a sound one?
5 In Egypt, when they hatch eggs arti-
6 ficially in an oven--they can afford to
7 return
8 give 1 chicken for every 2 eggs they receive,
9 (& do so) & yet find it profitable--
10 It is true 1/3 of human infants are said
11 to die before they are 5 years old--but
12 even this is a far less mortality than that
13 of the acorns. The O. is a {scarce heaven}--yet it lasts
14 a good while
15 // More or less rain today & yesterday.
16 Oct 24--
17 Pm to Walden Woods--
18 See 3 little checkered adders lying
19 in the sun by a stump on the sandy slope
20 of the Deep Cut-- Yet sluggish. They are
21 7 or 8 inches long{.} The dark blotches or {figur}
22 checkers are not so brown as in large
23 ones. There is a transverse dark mark
24 on the snout {drawing}¹⁸⁷ and a forked light
25 space on the back part the head.
26 Examine again Emerson's Pond
27 lot--to learn its age by the stumps cut last spring
28 (?)
29 I judge from them that they were some 5 ^ years
30 cutting even the part next the water--for
31 I count the rings of many stumps & they vary

¹⁸⁷drawing continues onto next line down

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31

in number from 24 or 5 to 30--though
26--7--& 8--are commonest as near as I can count.
It is hard to distinguish the very first ring--&
often one or more beside before you reach the
circumference-- But these being almost all sprouts
I know that they were pretty large the 1st year.

I repeatedly see beside the new tree
(cut last spring) the now well rotted stump
from which it sprang. But I do not see the
stump from which the last sprang. I should
like to know how long they may continue to spring
from the stump. Here are shoots of this year
which have sprung vigorously from stump
cut in the spring--which {had} sprung in like
manner some 28 or 30 years ago from a stump
which is still very plain {~~& the on~~} by their sides.

I see that some of these 30 year trees
are sprouts from a white O. stump 20 inches in
diameter 4 from one in one case.

Sometimes, when a white pine stump is all crumbling
beside--there is a broak¹⁸⁸ shingle like flake
left from the center to the circumference--the old
ridge of the stump, only 1/4 of an inch thick--&
this betrays the axe in a straight inclined
surface {drawing}

The SE part of Emersons lot next the Pond
is yet more exclusively oak sprouts--or O from
O--with fewer pine stumps--

I examine an oak seedling in this
There are 2 very slender shoots rising 80 or more

¹⁸⁸prob misspelled--Torrey says "broad" in 1906 edition

1 inches above the ground--which traced down-
2 ward conduct to a little stub--which I
3 mistook for a very old root or part of
4 a larger tree--but digging it up I found
5 it to be a true seedling. This seedling¹⁸⁹ had
6 died down to the ground 6 years ago--& then
7 these 2 slender shoots--such as you com-
8 monly see in O. woods--had {started}--
9 The root was a regular seedling root (fusi-
10 form if straightened) at least 7/8 inch thick
11 while the largest shoot was only 1/8 inch thick,
12 (though 6 years old--& 10 inch high) The root
13 was prob 10 years old when the seedling
14 first died down--& is now some 16 years
15 old. Yet as I say the oak is only 10
16 inches high & the root some 15 or 18 inches long.
17 This shows how it endures & gradually
18 pines & dies. As you look down on it
19 it has 2 turns {drawing}¹⁹⁰--and 3 as you look
20 from the side [drawing] so firmly is it rooted.

21 ¹⁹¹Any one will be
22 surprised on digging up some of these lusty
23 oaken carrots.
24 %{SE side pond}%
25 Look at stumps in Heywoods lot, from Emersons
26 to the Swimming place-- They are white pine--
27 oak--p. pine &c I count rings of 3 wht
28 pine (from 60 to 70) there are a few quite
29 large wht p. stumps on one 90 rings-- One
30 oak gives 116 rings--a p. pine some 15 or
31 16 inches over gives {about} 135-- All these

¹⁸⁹T leaves out "l" in "seedling"

¹⁹⁰drawing continues for 2 additional lines down

¹⁹¹text begins to the right of drawing and is not a new paragraph

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31

are very easy if not easier than ever to count
The pores of the pines are distinct ridges {drawing}
& the pitch is worn off. (Many white & p. pine
elsewhere cut this year cannot be counted they
are so covered with pitch.) I remember this
as a particularly dense & good sized wood
mixed pine & oak.

Mrs Heywoods p. pines by the shore--judging
from some cut 2 or 3 years ago & are about
85 years old. As far as I have noticed the
pitch pine is the slowest growing tree--(of pines
& oaks) & gives the most rings in the smallest di-
ameter.

Then there are the countless downy
seeds {drawing} (thistle like) of the golden rods--
so fine that we do not notice them in
the air. They cover our clothes like dust.
No wonder they spread over {all} fields & far into the
woods.

I see these narrow pointed yellow buds //
now laid bare so thickly along the slender
twigs of the s. discolor--which is almost
bare of leaves.

~~The d~~

Oct 25

Pm to Eb. Hubbards wood & Sleepy Hollow

See a little reddish brown snake (
bright red beneath) in the path--prob. //
c. amaenus
cut one of the largest of

1 the lilacs at the Nutting wall--18
2 inches from the ground--it there measures
3 then about 12 very fine not thicker than previous 3=32 in all
4 ? 1 5/16 inches & has 20 distinct from center¹ ^ rings. It evidently
5 dies down many times & yet lives & sends
6 up fresh shoots from the root.
7 {Jarvis'is} Hill Lot--is oak--p. pine
8 & some white--& quite old-- There
9 are a great many little white pines
10 springing up under it--but I see no pitch.
11 Yet the Large pitch are much more common
12 than the large white. Never the-less the
13 small white have come one much faster
14 & more densely in the hollows just outside
15 the large wood on the S.
16 E{,} Hubbards Mound of p. pines contains
17 not one seed bearing white pine-- Yet there
18 are under these pines many little white
19 pines (whose seed must have blown some
20 distance) but scarcely one p. pine. The
21 latter however are seen along its edge & in
22 the larger openings.
23 {p. pine}
24 So² at Moores ^ promontory S of the {Foley} house
25 cut³ off lately by Walcott--Where the large
26 pines had stood are no little ones but
27 in the open pasture northward quite a little
28 grove which had spread from them--
29 Yet from a {hasty} look at the
30 S end of the Sleepy Hollow cut p. pines, it
31 appeared that small p. pines were abundant
32 under them--v. again.

¹"20 distinct from center" inserted

²apparently pencil line connects "so" to "openings" on line above

³poss "Cut"

1
2 I have seen an abundance of
3 white o. acorns this year--& as far
4 as I looked swamp-wht o. a. were ^{pretty} ^ numerous.
5
6 --&⁴ Red. o. a. are also pretty {comon}--
7 Black & scarlet o I find also--but
8 not very abundant-- I have seen but few
9 shrub o. comparatively. Of the above
10 only the white o. have decayed so remarkably
11 -- The others are generally sound--or a
12 few wormy-- The red. o as far as I notice,
13 are remarkably sound--the scarlet o. I cut
14 this from--are some of them decaying--but
15 not like the white o. Only the white have
16 sprouted at all as far as I perceive--
17 I find some scarlet o. a. on the backside
18 NE end of sleepy Hollow--which are {rounder}
19 than usual--considerably like a filbert out
20 of the shell-- They are indistinctly marked
21 with meridional lines--& thus betray a re-
22 lation to the black & black-shrub. o. ^{v swamp wht o p 237}%
23
24 I see an immense quantity of
25 asparagus seed in the {mist} of its dead
26 branches--on Moores⁵ great field of it
27 near Hawthornes-- There must be ^{a great} ^ many bushels
28 of the seed--& the sight suggested how
29 extensively the birds must spread it. I saw
30 accordingly on Hawthornes hill side a
31 dozen rods N of it--many plants (with
32 their own seed) 2 or 3 feet high-- It is
33 planted in the remotest swamps in the town.
34

⁴"&" prob. written over text

⁵"M" written over "m"

1 Saw in E. Hub's Clintonia swamp--
2 A large golden colored⁶ spider with a
3 great ^ abdomen as big as a hazel nut
4 on the wet leaves-- There was a figure in
5 brown lines of the back in the form of a
6 pagoda--with its stories successively smaller.
7 The legs were pale or whitish with dark{--}
8 or brown bars
9 Find many of these pale-brown roughish
10 fungi (it looks like Loudons plate of
11 Scleroderma perhaps verrucosum) to to 3 in
12 ches in diameter. Those which are ripe are
13 so softened at the top as to admit the rain thro--
14 the skin (as well as after it opens) &⁷
15 the interior is shaking like a jelly--and if
16 you open it you see what looks like a
17 yellowish gum or jelly⁸ amid the dark
18 {fuscus} dust--but it is {this} water colored
19 by the dust-- Yet when they are half full
20 of water they emit dust never the less. They
21 are in various states from a firm hard & dry
22 unopen
23 ^to a half empty & flabby moist cup--
24 // See the yellow butterfly still--
25 //& Great Devils needles.
26 Dug up & brought home last night
27 3 English cherry trees from Heywood's
28 Peak by Walden-- There are a dozen
29 or more ⁹them & several are

⁶"golden colored" circled and connected to caret on following line

⁷stray mark following "&"

⁸"j" written over "g"

⁹T leaves out "of"

1
 2 as handsome as any that you will find
 3 in a nursery. They remind me of some much
 4 larger which used to stand above the
 5 cliffs. This species too comes up in
 6 sproutlands like the wild rum cherry.

7 The amount of it is that such a
 8 tree, whose fruit is a favorite with birds,
 9 will spring up far & wide & wherever
 10 the earth is bared of trees--but since
 11 the forest overpowers & destroys them
 12 & also cultivation--they are only found
 13 {yound}¹⁰ {~~all~~} in sproutlands--or grown up
 14 along fences-- It looks as if this
 15 species preferred a hill top--whether the
 16 birds are more inclined to carry the seeds
 17 there--or they find the light & exposure
 18 & the soil there which they prefer--
 19 These have each one great {root} ~~making~~
 20 somewhat like a long straight horn
 21 making a right angle with the stem &
 22 running far off one side ~~f~~ close to the sur-
 23 face.

24 The {~~fl~~} thistles which I now see have
 25 their heads recurved--which at least saves
 26 their down from so great a soaking.¹¹
 27 But when I pull out the down, the
 28 seed is for the most part left in the
 29 receptacle(?) in regular order there like
 30 the pricks in a thimble{--}a slightly convex

¹⁰"young" in 1906 edition

¹¹this line is underlined, seems to be a crayon use mark

1 The seeds set like cartridges in a circular cartridge box--in hollow cylinders which
2 look like circles crowded into more or less of a diamond--pentagonal--or hexagonal form
3 surface--^ The perfectly dry & bristly involucre
4 %the {seed}%
5 which hedges these round--%^%so repulsive
6 externally--is very neat & attractive within
7 ~~slende~~ as smooth & {lender} toward its
8 %it is%
9 charge--as %^% rough & prickly externally
10 toward the foes that might do it in-
11 %It is%
12 jury--{thin} a hedge of thin imbricated
13 light
14 thin & narrow leafets--of a pale
15 brown color--beautifully glossy like silk
16 a most fit receptacle for the delicate
17 %a cradle lined with silk or satin%
18 ¹²downy {parchutes} of the seed--%^% The whole
19 %bitten}%
20 head being recurved¹³--the seeds are kept
21 dry under this unsuspected silky or satiny
22 %lining}%
23 ceiling%^%--whose old & weatherworn &
24 rough outside {alony} we see--like a mossy
25 roof--little suspecting the delicate & glossy
26 ¹⁴lining-- I know of no object more un-
27 sightly to a careless glance than an empty
28 thistle-head¹⁵-- Yet if you examine it
29 closely it may remind you of the silk-
30 lined cradle in which a prince was rocked.
31 {Those}%That which seemed a mere brown
32 & worne out relic of the summer--sinking
33 into the earth by the roadside--turns out
34 to be a precious casket.
35 I notice in the p. p. wood behind
36 Mores--the common pin weed--L.
37 major on the next--growing on the top

¹²pencil line runs under line through "seed" where it goes above for rest of line

¹³"The whole...recurved" crossed out in pencil

¹⁴pencil line goes under "lining" and above rest of line

¹⁵poss blotch after "head"

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32

of a p. pine stump--which is yet quite in
shape & form--1 foot from the ground--with
its roots firmly set in it reaching an inch
or 2 deep. Prob. the seed was blown thence
--Perhaps over the snow when it was on a
level with the stump--

Oct 26

Pm to Baker's Old Chestnut Lot
near Flints Pond--

As I go through what¹⁶ was formerly the
dense p. pine lot on Thrush Alley--(G. Hubbard's)
I observe that the present growth is scrub oak--
birch--oaks {or} various kinds--white pine--
p. pine--willow & poplar. Apparently,
the birch--oaks & p. pines are the oldest
of the trees-- From¹⁷ the number of small white
pines in the neighboring p. pine wood--I should
have expected to find larger & also more
white pines here. It will finally become
a mixed wood of oak, & white & p. pine
There is much cladonia in the lot--

Observed yesterday--that the row of
white pines set along the fence on the west
side of Sleepy hollow had grown very fast
ap. from about the time they were set {out}
or the last 3 years-- Several¹⁸ had made
about 7 feet within the three years--
Do they not grow the fastest--at
after
just this age--or ~~when~~ they get to be about 5 feet
high?

¹⁶poss written over "that"

¹⁷"F" written over "f"

¹⁸"S" poss written over "s"

1 I see today sprouts from chestnut
2 stumps which are 2 1/2 feet in diameter
3 (i.e the stumps.) One of these large
4 stumps is cut quite low & hollowing--
5 so as to hold water as well as leaves--
6 & the leaves prevent the water from drying up--
7 It is evident that in such a case the
8 stump rots sooner than if high & {roof}
9 like.

10 I remember that there were a great many
11 hickories with R. W. E's p. pines when
12 I lived there--but now there are but
13 few comparatively--& they appear to
14 have died down several times & come
15 up again from the root I suppose it
16 is mainly on ac. of frosts--though perhaps
17 the fires have done part of it.

18 Are {these} not hickories most commonly found
19 on hills?

20 There are a few hickories in the open
21 land which I once cultivated {thence}--&
22 these¹⁹ may have been planted there by
23 birds or squirrels. It must be {more} than
24 35²⁰ years since there was wood there.

25 I find little white pines--under the p.
26 pines (of E.) near the pond end--& few or no whit
27 little p. p. but between here & the road about
28 as many of one as of the other--but the old pines
29 are much less dense that way--{or} not dense at
30 all.

¹⁹"these" written over text

²⁰"35" prob. written over "30"

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32

This is the season of the fall when the
leaves are whirled thro' the air like flocks
of birds--the season of birch spangles--when
clean
you see afar a few ^ yellow leaves left on the
tops of the birches.

It was a mistake for Britton to {treat}
that fox hollow lot as he did-- I rember²¹
a large old pine & chestnut wood there--some
20 years ago. He came & cut it off--& burned it
over--& ever since it has been good for nothing
I mean that acre--at the bottom of the hollow.
It is now one of those frosty hollows so com-
mon in Walden woods--when little groves--
sheeps
--^fescue grows--sweet fern--hazelnut
bushe{s}--& oak scrubs whose dead tops are
2 or 3 feet high--while the still living shoots
are not more than half as high at the base--
They have lingered so long & died down annually.
At length I see a few birches and pines creep-
ing into it. Which at this rate in the course
of a dozen years more will suggest a
forest there. Was this wise?

Examined the stumps in the Baker Chestnut
lot which was cut when I surveyed it in the
spring of '52-- They were when cut commonly from
50 to 60 years old (some older some younger)

The sprouts from them are from 3 to 6 inches
thick & {may range}--the largest--4 inches
{to} 18 feet high--

²¹T misspells "remember"

1 The wood is perhaps near half oak-sprouts
2 & these are 1 1/2 to 4 inches thick or av. 2 1/2
3 & not so high as the chestnut-- Some
4 of the largest chestnut stumps have sent
5 up no sprout-- Yet others equally
6 large & very much more decayed have sent
7 up {stumps}. Can this be owing to the different
8 sprouts
9 time when they were cut-- The cutting--was
10 after April-- The largest sprouts I chanced
11 to notice were from a ~~large~~ small stump
12 in low ground. Some hemlock stumps there
13 had a hundred rings.

14 // Was overtaken by a sudden thunder shower

15 Cut a chestnut sprout 2 years old--
16 It grew about 5 1/2 feet the 1st year--& 3 1/2
17 the next & was an inch in diameter-- The tops
18 of these sprouts--the last few inches had died
19 in the winter--so that a side bud continued
20 {there}--& this made a slight curve
21 in the sprout thus {drawing} There was
22 on a cross section of course but
23 one ring of pores within the wood just outside
24 the large pith--The diameter of the 1st years
25 growth being just half an inch--radius 1/4 inch
26 -- The thickness of the 2d years growth was the same
27 or 1/4--but it was distinctly marked to the naked
28 eye with about 7 concentric lighter lines
29 which I suppose marked so many successive
30 growths or waves of growths--or seasons in its
31 year-- These were not visible {thro} a

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32

microscope of considerable power--but best to the
naked eye. ~~Their sig~~ Prob. you could tell a
vigorous
seedling chestnut--for a ^ sprout however old or
large--provided the heart were perfectly round to
the pith--by the much more rapid growth of
the last the 1st half dozen years of its existence--

There are scarcely any chestnuts
near Britton's lot I find ~~near~~ as many as usual--E of Flint's Pond
this year--^ Oct 27--60

//

Emerson planted his Lot with acorns
(chiefly white o.) pretty generally the other
day-- There were a few scarlet o. a. planted
there on the S side in spring of '59.

There is on the Lee Farm W of
hill a small woodlot of oak & hickory
--the S end chiefly hickory--

I had come out this Pm to get 10
seedling Os out {of} a purely o. wood--
& as many out of a purely pine wood--& then
compare them-- I look for trees 1 foot or
less in height & convenient to dig up

I could not find one in the last named
wood. I then searched in the large Woodis
Park--the most oaken parts of it--wood some
25 or 30 years old--but I found only 3-- There
were many shrub O. & others 3 or 4 feet high--
but no more of the kind described 2 of {These}
3 had singularly old large & irregular roots
mere gnarled oblong knobs as it were--
with slender shoots having died down many--

1 times-- After searching here more than half
2 new
3 an hour--I went up the ^ Pitch & white
4 Pine lot{--}just SW--toward the Old Lee
5 {hollow}--& there were thousands of the
6 seedling O's only a foot high & less--quite
7 reddening the ground in some places--
8 perfectly
9 & these had ^ good roots--though not
10 so large as those near the corner spring
11 (next to Rices)
12 wall-- but quite open
13 Here is a new ^ p{.} & wht. pine wood--
14 (with birches on S) on cladonia ground--
15 It is so open that many p. pines are springing
16 up.
17 E woods dense P. (& wht) pine
18 wood in front of Lee house site--conforms
19 little
20 to the rule of few or no ^ p. pines within it
21 but many wht pines--(though not many
22 from within--) while the p. pines are spring-
23 ing up with wht p. on the edge & even forward
24 toward the road.
25 The Wht pine wood SE of this & not
26 far N of RR--against woods' open land
27 is a New wood--
28 looking for seedling os
29 As I am coming out of this ^ I see a
30 jay, which was screaming at me, fly
31 to a white oak 8²² or 10 rds from the
32 wood in the pasture--& directly alight
33 on the ground--pick up an acorn & fly
34 back {into} the woods with it.

²²"8" written over text

1
 2 This was one--perhaps the most
 3 effectual way in which the wood was
 4 stacked with the {common} little oaks which
 5 I saw--under that dense white pine grove--
 6 surer than
 7 Where will you look for a jay ~~but~~ in
 8 a dense pine thicket. It is there they commonly
 9 live, & build.

10 By looking {to} see {whit} os grow in the
 11 or along the edge where the wood is exclusively pine
 12 open land near by ^ I can tell surely what
 13 kinds of oaks I shall find under the pines.

14 What if the oaks are far off--think
 15 how quickly a jay can come & go{--}& how
 16 many times in a day.

17 ²³Swamp. white o. a. are pretty thick on
 18 the ground by the bridge--& all sound that I try.
 19 They have no more bitterness than the white o. a.
 20 many
 21 ²⁴I have now examined ~~several~~
 22 dense pine woods--both pitch & white--
 23 & several oak woods--in order to
 24 see how many & what kind of oak
 25 seedling {there} were springing up in them
 26 & I do not hesitate to say that seedlings
 27 under 1 foot high are very much more
 28 abundant under the pines than under
 29 the oaks. They prevail & are countless
 30 under the pines--while they are hard
 31 to find under the oaks--& what you
 32 do find have commonly (for whatever
 33 reason) very old & decayed roots

²³pencil lines in left margin mark this paragraph before first line and after last line

²⁴T indents 1/3 of a line here

1 & feeble shoots from them.

2 If you expect oaks to {re}seed a dense &
3 purely oak wood--you must depend
4 almost entirely on sprouts--but
5 they will succeed abundantly to pine
6 where there is not a {w} ^ ^o stump for them to
7 sprout from.
8

9 Notwithstanding that the acorns are produced
10 only by oaks--& not by pines--the fact is that
11 there are comparatively few seedling os ~~under~~
12 a {foot} or less in height--under the os--
13 but thousands under the pines. I would not
14 under take to get a hundred o's of this size
15 suitable to transplant under a dense & {prone}
16 oak wood--but I could easily get
17 thousands from under pines.

18 What are the reasons for this--1st it is certain
19 that generally speaking the soil under old
20 o.s is more exhausted from os than under
21 old pines--

22 2d--seedling o's under o's would be less protected
23 from frosts in the spring{--}just after leafing
24 yet the sprouts prevail--
25 3d ~~oaks may~~ squirrels & jays resort to
26 evergreens with their forage--& the {a} o{,}s
27 may not bear so many acorns but that
28 the squirrels may carry off nearly all the
29 sound ones--

30 These are some of the reasons that occur
31 ND to me--

32 To be more minute--
33 I dug up 3 o. seedlings in the Woodis
34 park{.}--oaks--/9 in the small open p & wht.
35 p. & adjoining on SW--/& 10 in the p. & wht p.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33

of wood bet road & RR.

Woodis park is oak & pine some 25 years old the o. I chose the oaken parts but there was {always} a pine within a rod or 2--I looked here till I was discouraged finding only 3 in 3/4 of an hour--1 {w} was like those in p. woods the other 2 had singular gnarled & twisted great roots. You would think you had come upon a dead but hurried stump-- The largest for instance wasa perhaps a red o. {~~The o~~} 9 inches high x 1/8 inch at ground & ap. 3 years old--a {slender} shoot-- The root broke off {~~18 ab~~} at about 18 inches depth where it was 1/8 inch thick--& at 3 inches below the surface it was 1 3/8 inches thick x 1 inch (being flattish) 2 or 3 of the side or horizontal fibres had developed into stout roots which ran & then broke off {quite} horizontally 20 inches ^ & were ap as long as the top root--1 of these was about 1/2 inch thick & perfectly horizontal at 3 inch below surface It was thus fixed very firmly in the ground. I counted the dead bases or stubs of shoots (beside the present one) & several 2 or 3 times as large as this--which had formerly died down--being now perfectly decayed-- If there was but one at a time & they decayed successively--after living each 3 years only (& they probably lived 2c as long) then the root²⁵ would be 30 years old-- But supposing there were 1 1/2 shoots at a time-- it would then be some 20 years old--

I think that this root may be as old as the large o's around--or some 25 years more or less--

²⁵written over text

1 My next 9²⁶ os from the pines S. W.--
2 may be put--with the 10 from the E wood
3 pines--(leaving out one which was 2ce the required
4 height) Their average age--i.e of the present
5 shoot, was 4 years--& average height 7 inches
6 (this includes white o. shrub o. black & ap.
7 red. o) The roots averaged about 10 inches
8 long x 3/8 thick at thickest part-- Quite a{n}
9 number were shrub o. which partly accounts
10 for their slenderness-- But the best were
11 not so thick as those near Rice's²⁷ wall.
12 of All the above roots--or the whole 22--
13 more ran directly perpendicularly downward--
14 but they {turned} to one side (just under the
15 more or less
16 acorn) & ran ^ horizontally or aslant--1 to
17 5 inches--or say 3 inches on an average--
18 Of the last 19--more than half
19 had died down once at least--so that they
20 were really considerably older than at first
21 appeared-- There are in all cases at the
22 source of the ground or head of the root--²⁸a ring
23 of dormant buds--{read to} to shoot up when
24 an injury happens to the original shoot--
25 shoot
26 One ^ at least had been cut off & so killed
27 by a rabbit.
28 // See a very large flock of crows
29 of pines & oaks
30 To speak from recollection^--I should say
31 that our woods were chiefly pine & oak mixed,
32 but was have also (to speak of the large growth {or}
33 trees) pure pine & pure oak woods--
34 How are these 3 produced--
35 Are not the pure pine woods commonly new
36 woods--i.e pioneers? After oaks have

²⁶stray mark after "9"

²⁷"R" written over "r"

²⁸"--" written over text

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31

once got established it must be hard to get them out without clearing the land.

A pure oak wood may be obtained by cutting off at once & clear a pure ~~p~~ and dense pine wood--& again sometimes by cutting the same oak wood.

But pines are continually stealing into oaks & oaks into pines where {~~th~~} respectively they are not too dense--as where they are burned ^ or ^²⁹ ^{otherwise} thinned & so mixed woods may arise.

Oct. 28th 60

In a pine wood are the little oak-seedlings which I have described--also in the more open parts {little} oaks 3 to 6 feet high but unnoticed--& perhaps some other hard wood trees-- The pines are cut & the oaks &c soon fill the space--for there is nothing else ready to grow there.

Are not the most exclusively pine woods new woods--ie those which have recently sprung up in open land where oaks do not begin a forest? It may be that where ever-greens most prevail †in our woods--there at the date of their springing up the earth was most bare.

Pm to Lincoln

Do I not see tree sparrows?

//

I see little larches 2 to 6 feet high in the meadow on the N side the turnpike--

²⁹2 carets, but only 1 interlined word visible

1 6 to 12 rds from Everetts seed bearing ones--
2 The seed was evidently blown from these.
3 There is quite a dense birch wood
4 in the field N of the cut on the turnpike
5 hill.
6 See much Cat tail--whose down was
7 recently burst & shows white on the S side
8 of the heads.
9 The polygonum aviculare is in bloom as freshly
10 & abundantly in some places as ever I saw it
11 Those great tufts of sedge in the meadows
12 are quite brown & withered--I suppose they have
13 been so since the beginning of the month.
14 Smith's black walnuts are about
15 //half of them fallen
16 I measure the chestnut stump near the
17 {On} Asa Whites land
18 brook N. E of the old Brooks tavern--^
19 Its height from the ground hills average
20 but 20 inches--measured one way its
21 diameter is 6 feet 9 inches & at right
22 angles with this {8} 8 feet 5 inches-- Its
23 average diameter 7 feet 7 inches--
24 You might add 3 to 4 feet more for the whole stump above ground
25 Beginning at the outside I count 102
26 rings distinctly--& am then 15 inches
27 from the apparent center of the tree--for
28 the middle is mostly rotted & gone--
29 Measuring back 15 inches & counting the
30 rings I get ~~49~~ 39 which added to 102
31 probable
32 =141 for the ^ age of the tree
33 This tree had grown very fast till

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32

the last 50 years of its existence--but
~~since then~~ comparatively slowly-- It had³⁰ grown
 9 inches in the last 49 years or 1/7 of an
 inch in a year--but 15 inches in the previous
 40 or 3/8 of an inch in a year--
 There may possibly have been 2 shoots
 or trees grown to gether--yet I think not--
 I measured this June 1st 52 & it had then been
 cut as I remember--but a short time--a winter--perhaps
 2 winters before-- This would carry its origin
 back to about 1710. Probably chest-
 nuts did not grow so large in the primi-
 tive woods--& that this was a forest tree,
 which {as it} stood ^{near} ~~on~~ the edge of the meadow
 was left standing--and then much smaller
 was cut ap. at the same time enar by. Having
 light & air & room it grew larger than
 it would have done if its neighbors had
 not been cut.
 I also measured the stumps of the 2 great
 chestnuts which were cut on Weston's land
 S of the Pond some 5 or 6 years ago--
 They are cut low some 8 or 9 inches above ground
 The SE most one measures 4 feet in diameter
 & was about 80 rings only (I estimate the 1st
 5 or 6 ~~it~~ w the heart or core being gone) The
 other is 4 5/12 feet in diam & has 73 rings
 only--or putting both together you have
 an average growth of about 1/3 inch in
 a year-- These were as large as any I knew

³⁰"had" poss written over "has"

1 except the Strawberry Hill one
2 standing hereabouts ^ & yet it seems {they} only
3 some 80 years old.
4 ~~Yet~~ Another 1/2 mile E of there, cut
5 perhaps some dozen years ago--was 23 inches
6 in diameter & had 63 rings--& I saw one
7 which had grown faster than any of the pine--
8 --Yet another stump near the last
9 on the high woodland near the pond--
10 was but just 2 feet in diameter & had
11 & so fine there I think it was a seedling
12 101 rings distinct to the very core^{.} From
13 this sprouts had grown some 15 years ago
14 & cut last winter on account of a fire--&
15 several
16 fresh shoots ~~6 feet high 5 or 6 feet high~~
17 had put out from the last.
18 The one that had grown slowly was somewhat
19 at the core. None of the 3 largest
20 stumps described had sprouts from them
21 Is not the very rapid growth & the hollow or rotten core one sign of a sprout?
22 We make a great noise going thro'
23 the fallen leaves in the woods & wood paths
24 now-- {~~it-re~~} so that we cannot hear
25 other sounds as of birds or other people,
26 It reminds me of the { }³¹ of
27 the waves--dashing against each other
28 or your boat-- This is the dash we
29 hear as we sail the woods.
30 Cut a limb of a cedar (near the {Irishman's}
31 shanty site at Flint's Pond) some 2 inches
32 thick & 3 1/2 feet from the ground. It had about
33 41 rings adding 10 you have say 50 years
34 for the age of {the} tree. It was 1 foot

³¹"tumult" in 1906 edition

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31

in diameter at 1 foot above ground & 20 or more feet high--standing in the young wood.

A little cedar 5 feet high near it--had some 15 to 17 rings-- See a great many chestnut sprouts full 6 feet high & more--& an inch or more thick the 1st year--

Aaron's {lot} has minute chaffy seeds now {ripe}--which by their very lightness could be blown along the high-ways

Oct 29th--60

Pm to Eb. Hubbard old black-birch Hill.

Henry Shattuck's is a new p. p. wood say 30 years old-- The {western} or greater part contains not a single seed bearing white pine-- It is a remarkable proof of my theory for it contains thousands of little white pines--but scarcely one little p. p. It is also well stocked with minute oak seedlings-- It is a ^ wood say a dozen rods wide by 3 or 4 times as long--running E & W--with an oak wood on the N. from which the squirrels brought the acorns. A strip of nearly the {raw} width of the p. p. was cut ap within a year on the S (a part of the above) & has just been harvested & sown with rye--& still it is all dotted over with the little o. seedlings between {the}--which are perhaps unnoticed by ~~the~~ Shattuck, but if he would keep his plough & {fire} out he would still have a pretty green patch there

1 by next fall-- A thousand little red
2 (changed o. leaves)
3 flags ^ already wave over the green {rye}
4 amid the stumps-- The farmer stumbles
5 over these in his walk--& sweats while
6 he endeavors to clear the land of them--&
7 yet wonders how oaks ever succeed {to}
8 pines--as if he did not consider what these & tall³²
9 Where these pines are dense they are slender--on the {edge}
10 are. or in open land they are more stout & spreading.
11 Again, as day before yesterday, sitting
12 on the edge of a pine wood I see
13 a jay fly to a white oak half a dozen
14 rods off in the pasture & gathering an
15 acorn from the ground--hammer away at
16 it under its foot on a limb of the
17 & rapid
18 oak--with an awkward ^ see-saw or
19 {teetering} motion it had to lift its head
20 so high to acquire the requisite mo-
21 mentum. The jays scolds about
22 almost every ~~oak~~ wht oak tree--since
23 we hinder their coming to it. %{v 284}%
24 At some of the wht oaks visited
25 on the 11th ult where the acorns were so
26 thick on the ground & trees--I now find
27 them perhaps nearly half bricked up--yet
28 perhaps little more than ^{1/}~~half~~ 2/3 ~~or 3/4~~
29 spoiled. The good appear to be all
30 sprouted now. There are certainly many
31 more sound ones here than at Beck-
32 {stows} & Hub's Grove-- --& it looks as if

³²according to 1906 edition

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34

the injury had been done by frost--but per-
haps some of it was done by the very heavy
{snows} of september alone.

Yesterday & today I have walked rapidly
thro extensive chestnut woods--without
seeing what I thought was a seedling
chestnut-- Yet I can soon find them
in our Concord pines 1/4 {of} half a mile
from the chestnut woods-- Several have
expressed their surprise to me that they
cannot find a seedling chestnut--to
transplant. I think that is with them
precisely as with the oaks--not only a
seedling is more difficult to distinguish in
a chestnut wood--but it is really far more
rare there than in the adjacent pine ^{mix.} ^{& oak} woods.

After considerable experience in searching
for these {&} seedling o's, I have learned to
neglect the chestnut & ~~pine~~ ^{oak} woods--& go
^{neighboring woods of a different species}³³
only to {th} the pines [^] for them. Only that
course will pay.

On the side of E. Hub's Hill I
see an old Chestnut stump some 2 feet
nearly {&} its outside & form well kept
in diameter--& ^ 2 feet high--^yet all the inside
gone--& from this {shot} up 4 sprouts
~~which we~~ in a square around it--which
were cut down 7 or 8 years ago-- Their
rings number 46--& they are quite sound
--so that the old stump was cut some 53 years

³³interlineation ac. to 1906 edition

1 ago. This is the oldest stump of whose
2 age I am certain. Hence I have
3 no doubt that there are many stumps
4 left in this town which were cut in the
5 last century.

6 I am surprised to find on this hill
7 (cut some 6 7 or 8 years ago) many
8 remarkably old stumps wonderfully pre-
9 served esp. on the N. side of the hill--
10 walnuts
11 ^white o. & other oaks--& black
12 birch.

13 18 1/2
14 One white oak is 18 1/2³⁴ inches in diameter
15 & has 143 rings. This is very one sided
16 in its growth--the center being just 4 inches
17 from the N side--or 136 rings to an inch--
18 Of course I counted the other side-- ³⁵It
19 was so smooth (sawed off) & solid ~~that~~
20 almost a polished or marble-like surface
21 2
22 that I could not at first tell what kind
23 of wood it was.

24 ³⁶Another close by--gave 141 rings
25 1
26 another white o. 15 1/2 inches in diameter--had 155
27 rings^.

28 % {was it not b walnut} %
29 Another white o. the same--as last in rings but
30 i.e 155
31 ~~about same size {or} larger--24 inches diam.~~

32 All these were sound to the very core
33 so that I could see the first ~~year~~ circles
34 & I suspect that they {were} seedlings
35 The smaller, but oldest, ones had grown
36 very slowly at first--& yet more slowly

³⁴blotched number is corrected above

³⁵T circles "It was so smooth...of wood it was" and connects it to the caret after "rings" in following paragraph.

³⁶T marks this line and the next with a line in the left margin

1
 2 at last--but after some 65 years--they
 3 had then grown much faster for about 15
 4 years--& then grew slower & slower to the
 5 last. The rings were exceedingly close to gether
 6 near the outside yet not proportionably dif-
 7 ficult to count. For aught that appeared
 8 they might have continued to grow a century
 9 longer-- The stumps are far apart--so
 10 that this formed {an} ^{open} ^ grove{--}& that prob.
 11 made the wood sounder & more durable.

12 On the south slope many wht pines
 13 had been cut about 46 years ago{--}
 14 or when the chestnut was--amid the
 15 oaks. I suppose that these were seedlings
 16 --& perhaps a ~~new pine~~ the hill was cleared
 17 soon after the settlement of the town & after
 18 a while pines sprang up in the open land
 19 & seedling os under the pines--& the latter
 20 being cut near the land of the 17 century--those
 21 oaks sprang up--~~together with pines~~--with
 22 or without pines--but all but these were
 23 cut down when they were about 60 years old.

24 If these are seedlings then seedlings make
 25 much the best timber. I should say that
 26 the pasture oaks generally must be seedlings
 27 on {a} ac. of their age, being part of
 28 the primitive wood.

29 I suspect that sprouts--like the chestnut
 30 e.g. may grow very rapidly--& make
 31

1 large trees in comparatively few years--
2 but they will be {dying} as fast at {the}
3 core, as they are growing at the circumference.

4 The stumps of chestnuts esp. sprouts--are
5 very shaky. It is with men as with trees
6 you must grow slowly to last long.

7 The oldest of these oaks began {their} existence
8 ⁹
9 about 1697³⁷

10 I~~t~~ doubt if there were any as old trees
11 in our primitive wood--as stood in this town
12 60 years ago. The healthiest of the
13 primitive wood having at length more room
14 light & air--probably grew larger than
15 its ancestors.

16 Some of the black-birch stumps gave about
17 100 rings.

18 The pasture oak which Sted. Butticks cut
19 some 7 or 8 years ago--NE of this--
20 {was}, as near as I could tell--(1/3 was
21 ^{some}
22 calculation--)^100 years old only--
23 though larger than any of them

24 The fine chips which are left on the center
25 of a large stump preserve it {moist} there &
26 rapidly hasten its decay.

27 The site of the last named pasture oak
28 was easily discovered--by a very large open
29 grass sward--where no sweet fern--

30 lambkill--huckleberry--& brakes grew--
31 they did almost % {This may be because of the cattle assembling} %
32 as ^ every where else. % {under the oak and so killing the bushes & at} %
33 % {the same time manuring the ground for grass} %

³⁷"9" blotched and corrected above

1 & the rareness with which p. pines spring
2 up under older p. pines. Yet going to
3 the open land or E side of {this} wood
4 I find that it is mainly the little p. pines
5 that are spreading into the field there
6 & extending the wood some a dozen
7 rod{s} from its edge in the grass--&
8 their relative proportion is reversed--i.e
9 little
10 there are 50 to 100 ^ p. pines here to 1 white p.
11 He had also cut off some, a few, birches &
12 their sprouts had come up--as well as seedling{s}
13 ~~I measured I obse~~ The oak seedlings between
14 the young p. p. ines were manifestly spring-
15 ing up with new vigor--though many
16 may finally be choked by the wht pines--
17 Omitting such as were of the diameter of sprouts
18 though not cut--(i.e had shot up from old
19 roots--to 3 feet high--merely on ac. of the
20 influx of light & air--) I measured
21 this years growth of the 1st 4 which
22 were under a foot high here where the
23 p. p. had been cut--& found it to average
24 growth of adjacent
25 5 1/2 inches-- The ^ 1st 4 in the ^ p. p. wood
26 not cut averaged--7 1/2-- As may be
27 seen this was not nearly fair enough to
28 the partially cleared part--for I should
29 have included the higher shoots.
30 The higher parts of this lot is cladonia

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30

land. I measured the diameter
of several of the p. p stumps & counted the rings
with this result--

Diam. (exclusive of bark--)	rings
7 1/4 inches	29 "
7 1/2 "	33
6	40
6 1/2	33
6	40
8 1/2	35
7	30
<hr/>	
7) 48 3/4	7) 240
7 -- -- -- -- -- -- --	34

i.e. they averaged 7 inches in diameter
(or 8 with bark) & were 34 years old. Had
grown (.68) 70 (.10) about 1/10 of an inch a year
from the center.

White pines will find their way ap between p. p.
if they are not very large & exceedingly dense--
but p. p. will not grow ap under p. pines.

I see now adays in the p. p.
woods countless white & ~~also other~~
toad stools which have recently been
devoured & broken in pieces--& left on
the ground & occasionally on the branches
or forks of trees--no doubt by the squirrels.
They appear to make a considerable
part of their food at this season.

1 See a small--copper butterfly--
2 //
3 In what I have called the Loring Lot--
4 next {west} of Hosmers p. p. on the back road--
5 though for the greater part numerically is still shrub oak, there³⁹
6 considerable
7 ^is now a ^ growth of young--oaks--rising above
8 the shrub oaks--~~{&} I think that the proportion~~
9 These oaks as far as I observe--are almost if not quite all sprouts
10 of ~~{the last} has much diminished~~. Probably
11 for small stumps which were unnoticed at first--& there are also a very few
12 seedlings{--}white and other o. no higher than the shrub. oaks
13 ^40the shrub o. can bear exposure when young⁴¹
14 better than the nobler oaks--and if⁴²? the
15 squirrels plant other acorns{-- --}? under
16 which may be doubted
17 them^--then it will turn out that they
18 serve as nurses to the others.
19 I measure amid these young oaks--
20 a white p. stump Diam exclusive of bark rings
21 13 1/2 inches 35
22 another 28 " 52
23 24 " 46
24 _____
25 3) 65 1/2 133
26 22 44
27 Av. growth 1/2 inch a year--at the level
28 at which stumps are sawed.
29 This lot is now as exclusively oak--as it
30 was pines before-- You must search to find
31 scattered
32 a few little white pines ^ in it{--} But
33 why, if there are so many little white
34 pines under the adjacent p. p. {which}
35 are left when the p. p. are cut--were
36 there no⁴³ more to be left--under the p. p.
37 part (along the road) of this lot?
38 I think of no reason--unless the p. p.
39 on this lot were too old & dense--
40 Again I notice that Hosmers p. p. have
41 not spread W. at all into this clearing
42 ⁴⁴ie though you may think his oak sproutland all
43 shrub. o. it probably is {not}, as will appear when the other kinds
44 rise above the shrubs.

³⁹marking after "there" prob. "i" dots from "rising" below

⁴⁰this is actually a down-facing caret connecting interlining to vertical writing in left margin, see bot of page

⁴¹"g" ap. written over "d"

⁴²"and if" poss underlined 3 times

⁴³poss stray mark after "no"

⁴⁴inserted vertically in left margin, connects to caret at "the shrub o" line

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32

but only E. into the grass ground--
 Into ~~From~~ this Loring lot years ago--the squirrels
 brought acorns years ago--& hence the oaks
 which now cover it-- Also the wind blew its
 own seeds into an open strip across the road--&
 a dense p. & white pine wood sprang up there--

Already--the Loring lot having been cut {for}
 8 years--the squirrels are carrying the shrub.
 o acorns from it into that pine strip--&
 the pine seed from the most forward of that
 strip is blowing back into the shrub. o land.

Another advantage the shrub. o. has over
 other os that it gets to fruit so quickly--
 certainly in 3 or 4 years after the pines are
 cut--& then bears so profusely.

See a great flock of black birds
 prob. grackles.

//

Examine Tarbells p. p. grove--this is
 all of one age & very dense. (The largest trees
 as estimated by sawing a branch--Tarbel says this grove came up in 1826
 on the N side are 28 to 30 years old.) It is
 on land which had been burnt over--in fact open land--
 so dense that though it has been thoroughly
 turned up--& is only a dozen or 15 rds wide
 you cannot see through it in some directions--
 About as dense a p. p. grove as I know
 It is 20 rods from the nearest wood on
 one side--& 5 times as far from any other--
 & yet it is well planted with seedling oaks.
 Looking hastily to where they are most numer-
 ous--I counted 10 within 15 square feet.

1
2 portable. I am today convinced from this
3 --for I have been looking after it for a day
4 or 2. As usual the ground under
5 this grove is quite {strawn} with the twigs--
6 but here is one 11 inches long & nearly 1/2 inch
7 thick--cut off, ^{close} ~~just~~ ^{closed} below 2 ^ cones--one cone--
8 stem also being partly cut.
9
10 Also 3 or 4 rds {west} from this grove in open
11 land--I see 3 twigs which have been dropt
12 close together 1 is just 2 feet long &
13 cut off where 1/2 inch thich--& more than
14 1 food below 3 cones (2 on one branch & one on
15 another) & the cones are left-- Another is still
16 larger & the other smaller but their cones are
17 gone-- The greater part of the twigs have
18 been cut off above the cones--mere plumes--
19 So even the squirrels carry & spread the
20 pine seed far over the fields. I suspect
21 that they bury these cones like nuts. I have
22 seen the cones collected ready to be carried off--
23 where they did not live.%v 269 {or at their holes}%
24 %^% It is remarkable
25 to consider how rudely they strip & spoil the trees.
26 It is remarkable how they carried some of these
27 great twigs with their burden of cones. %V Hosmers grey%
28 %squirrel%
29 The fact that the lower limbs of
30 pines--growing within a wood always die--shows
31 how {much} they depend on light & air-- They are
32 only a green {shining} top.
33 Measure one of Tarbels black birch stumps
34 60⁴⁷ exclusive of bark
35 23 inch--diameter ~~71~~ rings
36 A log from a different one 21 inches 71 (?) rings.
37 A white o stump nearby 15 inches 90 rings (on brow of
38 bark)
39 a black (?) o--"48 32 inches diam. 84 rings--

⁴⁷poss "69"

⁴⁸in manuscript, ditto marks fall under "stump"

1 Examine a dozen white pines
2 //in a field & conclude from these that
3 they begin to grow faster the 5th or 6th
4 year--counting by the whorls of branches--
5 J. Hosmer cut off his little p. p. grove
6 W of clam shell--& left the single large
7 old pine which seeded it to do him the
8 same service again{,} & here now
9 where for the 2d time (since⁴⁹) he has sown
10 winther rye I see the ineffectual oak
11 sprouts uplifting a few colored leaves
12 still & blushing for him.
13 The squirrels have no notion of starving
14 in a hard winter--& therefore they are
15 unceasingly employed in the fall in
16 foraging. Every thick wood--esp.
17 Evergreens--is their store house against
18 necessity--& they pack it as thickly as
19 they can with nuts & seeds of all kinds.
20 at this {season}
21 The squirrel which you see ^ running
22 so glibly along the fence--with his
23 tail waving over his head--with frequent
24 pauses on a post or stone--which you
25 watch perhaps for 20 or 30 rds--has
26 probably a nut or 2 in his mouth which
27 he is conveying to yonder thicket.
28 Evidently a great deal depends on the
29 locality & {other} conditions of a stump--
30 to affect its durability-- The oak stump

⁴⁹written over text

1
 2 at {Clam} Shell cut some 20 years since
 3 barely shows a trace of the axe--while the
 4 chestnut stump on Hosmers Hill cut more than
 5 50 years ago is much better preserved.

6 Oct 31--60

7 Pm to Wheelers Artificial Pines wood

8 Exclusive & dense white pine woods

9 are not nearly so common in this town
 10 as the same kind of p. pine woods-- They
 11 are more likely to have oaks in them.

12 There is a dense birch-wood in Witherel⁵⁰ vale.

13 Amon⁵¹ old stumps--I have not named

14 those white {pine} ones used as fences
 15 with their roots-- I think that some of these
 16 must be older than any left in the ground.
 17 I remember some on the corner round which ap{--}
 18 have not changed for more than 30 years & are
 19 said to be 90 years old. Lying thus high & dry
 20 they are almost indestructible & I can still
 21 easily count the rings of many of these. I count
 22 126 rings on one this Pm & who knows but
 23 it is a hundred years since it was cut? They de-
 24 cay much faster left upright in the ground--
 25 these lying on their sides {with} on the surface
 26 --supposing it open land in both cases.

27 Perhaps these great pine roots which grew
 28 in a swamp--were provided with some
 29 peculiar quality by which to {resist} the
 30 influence of moisture--& so endure the⁵²
 31 change of the weather--

⁵⁰"W" written over "w"

⁵¹T leaves out the "g" in "Among"

⁵²stray mark after "the"?

1 {Yes} these dense & stretching oak--
2 forests--whose withered leaves now redden
3 & rustle on
4 ^the hills for many a N. England mile
5 were all planted by the labor of ani-
6 mals-- For after some weeks of
7 close scrutiny I cannot avoid the
8 ~~every one of~~ modern
9 conclusion--that all ^ our ^ oaks woods⁵³
10 sooner or later--springs up from an acorn
11 for that is the exception
12 not where it has fallen from its tree,^
13 but where it has been dropped or placed
14 by an animal-- Consider what a vast
15 work these forest planters are doing!
16 I do not state the facts--exactly
17 in the order in which they were observed--
18 but select out of very numerous observations
19 extended over a series of years--the most
20 important ones--& describe them in their
21 natural order--
22 So far as our noblest hardwood forests
23 animals esp.
24 are concerned--the ^ squirrels--{&} jays
25 are out greatest--& almost only bene-
26 factors. It is to them that we owe
27 this gift. It is not⁵⁴ in vain that the
28 squirrels live in or about every forest {then}
29 or hollow log
30 --^and every wall & heap of stones--
31 Looked at the Wht Pine grove
32 set out by the father of Francis Wheeler some
33 22 or 3 years ago--S. W. of his house
34 They are in 3 or 4 irregular rows

⁵³inserted

⁵⁴"not" written over "in"

1
 2 some 18 rds long x 4 wide some 100 trees
 3 covering half an acre of {sandy} hill side
 4 Prob. not so many trees as Emersons but making
 5 more show-- They are trimmed up--

6 There are neither small white nor
 7 p. p. beneath them--but I see that
 8 the seeds of the p. p. which grow below⁵⁵
 9 them have been blown through this grove
 10 & come up thickly along its outer edge--

11 Look at a pure strip of old
 12 {whit} pine wood on the hill side W of this.
 13 There are no little white pines coming up
 14 under them--but plenty of them in the
 15 open hollows around & under its edge.

16 This I commonly notice
 17 White pines--it is true--may come up
 18 in the more open parts of any wood--
 19 whether a pine--or oak--or mixed-wood--
 20 in more open places caused by cutting
 21 for instance--but the p. pine requires
 22 much
 23 ^more of an opening.

24 Larger
 25 I see by the road E of White pond a ^ White
 26 pine wood with some oaks in it--there
 27 {are} no little white pines where it is dense--
 28 but one rod off across the road eastward--
 29 there is a dense row concealing the lower
 30 rail (many quite under it) for many rods--
 31 the only place where they are allowed to grow
 32 there.

⁵⁵pencil line marks three lines in right margin

1
 2 I hear the sound of the {flail} in M.
 3 Mile's barn--& gradually draw near to
 4 it from the woods thinking many things--
 5 I find that the thresher is a Haynes of Sudbury--
 6 & he complains of the hard work--& a lame back--
 7 indeed he cannot stand up straight. So
 8 all is not gold that glitters. It was
 9 %The sound is not so musical {after I have withdrawn}%
 10 as well to have heard this music afar off.

11 He complains also that the weather
 12 is not fit for his work--that it is so
 13 muggy that he cannot dry the sheaves &
 14 the grain will not fly out--when struck--
 15 The floor too is uneven & he pointed out
 16 one board more prominent on which he
 17 had broken 2 or 3 swingles.

18 He thought that there were larger trees
 19 in Sudbury--on what was John Hunt's land
 20 --now occupied by Thompson--near the old
 21 store--than in Inches woods.

22 Said there was a tree by the road side
 23 on the farm of the late Wm Read in
 24 West Acton--which nobody thereabouts knew
 25 the name of--but he had been south--&
 26 knew it to be a China-berry tree planted
 27 by a robin--for they are very fond of its fruit.

28 Nov. 1st--60

29 2 Pm to Tommy Wheeler woodlot

30 A perfect Ind. summer day--& wonderfully //
 31 warm{--} 72+ at 1 Pm & prob. warmer at 2--

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35

how on that side where I counted i.e.
--the broadest--so that my figures
are not absolutely {rig} but relatively
true-- --)

No 2 grew 5 inches in 1st 32 years			
5 "	4 1/2	1st 50 & 3 3/8 in	2d 50
6	7 1/4 "	" 50	2 1/2 " "
7	4 1/2	" 50	2 3/4 " "
<hr/>		<hr/>	
21 1/4		182 3/8 1/2	150

{ave.} ~~5 1/4~~ ~~45 1/2~~
av. 1/18 inch⁶²
(a little more than 1/9 inch a year)

The 7th grew {only} something less than 3 inches
(which was all of the {top}) in the last 67 or 8
years--or 1/22 of an inch a year only
the 6th
Indeed in one case^--the outside had grown
64
only 1 1/4 inches in 60 years or about 1/50 of
just 1 inch in the last 53 years or 1/53 of an inch a year--equal to the finest
an inch in a year^--I should say that they scales--
averaged out 1/36 part of an inch the
3d or last 50 years--

1st 50	2d 50	3d 50
1/9 inch	1/18	1/36

ie their rate of growth the 3 successive
periods of 50 years diminishes in geometri-
cal progression the quotient being 2--

The 7 p. p. stumps measured on the 30th
averaged 34 years & had grown 1/10 of an
inch in a year-- This is a perfect & remarkable
agreement--& quite unlooked for--

They were a mile apart--& I was not

⁶²2 lines on either side connect with equation above

1 reminded of those previous measurements
 2 until I chanced to compare them afterward--
 3 I may therefore take this to be
 4 // {average} growth of a p. p. for the 1st 50
 5 years But I have not yet taken
 6 //
 7 into the account the fact that though the
 8 //
 9 thickness of the layer is less its {superficies}
 10 or extent is greater--as the diameter of
 11 the tree increases-- Let us compare
 12 the 3 portions of wood--
 13 diameter
 14 {drawing}⁶³ If the ~~radius~~ at the
 15 end of the 1st 50 years is
 16 4--the 2d 50--6. &
 17 the 3d 50 7. Then the
 18 amount of wood added
 19 each term will be (to omite very minute fractons)
 20 {as}
 21 12 1/2--15 1/2{:} & 10. respectively--
 22 or actually {ave original} 8 trees under Nov. 18th--it is 7{+}--10+--10-
 23 So that though in the 2d 50 the rings
 24 are 2ce as near together--yet considerably more
 25 wood is produced than in the 1st--but in
 26 the 3d 50 the tree is evidently enfeebled--
 27 & it {prob.} is not profitable (so far as bulk
 28 in concerned) to let it grow--anymore--
 29 The very oldest trees whose rings I
 30 have counted--(i.e. these p. pines & the oaks
 31 on Eb. Hubbards hill) grew thus ~~very~~⁶⁴ slowly
 32 at last--which I think indicates that
 33 a tree has a definite age--after which it
 34 grows more languidly--or feebly--& thus
 35 gradually ceases to grow at all--dies
 36 & decays. I shall say that these pitch

⁶³drawing of tree cross-section continues for 5 lines

⁶⁴T also crosses out illegible markings under word

1
 2 pines flourished till they were about
 3 100 years old--& that they then began to
 4 grow with less vigor--through their old age
 5 (in this {case}) might be 1/3 or none of their
 6 whole life. 2 or 3 more were dead or nearly dead when sawed
 7 4 years ago--& I saw the rotted stumps of some others--

8 There were 20 or 30 of the p. pines
 9 (though I measured the largest of them--)
 10 & they were all but 1 or 2 perfectly round to
 11 the core--& the inmost rings were the plain-
 12 est-- The sap was only from 1 3/4 to 3 inches
 13 thick--& was the most decayed.

14 (It was 1 3/4 inches thick in no 6) The bark
 15 was generally from 2 to 2 3/4 inches thick--
 16 This would have added 4 3/4 to the average
 17 diameter of the trees--or made it 24 3/4
 18 That is where sawed off which was rather
 19 low or say 8 to 10 inches above ground. % v n. p.%

20 There were also as many or
 21 more large white pines mixed with them
 22 1 of 24 inch diameter had 78 rings
 23 2d 31 " 96 "
 24 Also 1 hemlock⁶⁵ 21 " 81 rings

25 This had grown with remarkable equality
 26 %& so it is {generally}%
 27 through out %^% & was very easy to count

28 An oak (prob black) 14 inches-- --94 rings

29 --About 150 years ago--then
 30 there came up in & around this hollow in the
 31 woods a grove of pitch pines-- Perhaps
 32 some came up 20 or 30 years earlier--

⁶⁵T poss crosses the "l" in "hemlock"

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39

I have seen that a great many p. p.
cones have been cut off this fall, but
it chances that I have not seen where
they were eaten--or stripped. I conclude
therefore that they must be collected
into some hole in a tree or in the earth--
--there can hardly be a doubt of this--
& possibly some are buried as nuts are.
What stores of them there must be
collected in some places now!

Pitch Pine Woods

Young. N of Lorings Pond

just beyond (concord bound on right hand
this side Wetherbees extensive & large--
Tarbel says that when he came to town in '26 these were just about as
large as his now
60 to 70 years old then

Heywood's small grove SE of {Peters}

Large--SE {Copan}

Beyond Nathan Barretts, both sides road, large

Hill behind ~~Tarbells~~ & Abner Buttricks

Lane S of 2d Garfield House

S. W. of Brook's Piegion Place--

No E. M. Barretts--by College road

N. E. of Sam Barretts--Mill--

NW. " " " W of Pond--

1 Nov. 2d 1860

2 Pm to D. Wetherbee's Old Oak Lot.

3 As several days past, it has been
4 cloudy & misty in the morning & fairer
5 & warmer--if not Indian summer in the
6 Pm--yet the mist lingers in drops
7 on the cob webs & grass until night.

8 Saw off a very large & old looking
9 shrub oak--on a p. p. plain. 12 or
10 more feet in height & 3 1/2 inches in
11 diameter (the wood) at 1 foot from the ground
12 where it was just 27 rings. The
13 first 14 rings occupied 1 1/4 inches
14 from the center--when the whole radius was
15 but 1 3/4-- It evidently began to grow
16 more slowly when 15 years old.

17 Wetherbee's Oak Lot may contain
18 %He says 8%
19 4 or 5 acres-- The trees are white,
20 red, scarlet--& swamp-white{.}
21 oaks--maple--white pine and ash--

22 They are unusually large & old--
23 --indeed I doubt--if there is another here
24 abouts of oaks as large. It is said
25 that Wetherbee left them for the
26 sake of {mast} for pigeons.

27 I measure a white oak at 3 feet
28 from the ground--8 ft 4 1/2 inches in circumference
29 v n p bot

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16

Hardwood Lots

Wetherbees'

Blods--

G. M. Barretts--hill side--behind house

Walnuts (young) of {Smiths} hill Lincoln--

" " " Anurnsnack--above orchard.

" " F Haven Hill slope

also--N side of path from {Springs to Oars}

" " Site of Brittons Shanty

%S side of Bear Hill Lincoln%

1 Another White O. at same height is
2 6 3/4 in circumference
3 {A red o}--is 6 feet 2 inch in circ.
4 Another-- 8 1/2 "
5 another 7 4/12
6 and the scarlet os are of the same
7 diameter--though the above were the
8 largest--or among the largest--
9 These oaks though they form a
10 wood are some of them about as
11 spreading as a pasture oak--(i.e one
12 or 2 white ones near the outside)--
13 but generally they rise much higher
14 before they branch. The white o. have
15 peculiarly smooth tawny white boles
16 for 8 or 10 feet up--the coarser
17 flakes of the bark having scale off
18 on⁶⁶ far
19 The red-oaks, (as well as scarlet) have
20 a coarser & rougher more deeply
21 furrowed bark--& the trees rise higher
22 before branching (commonly)-- One
23 not very large had no limb for
24 30 feet or more{--}standing aslant.
25 In the lowest part, on the {tract}--
26 they were swamp white oaks & maples--
27 The maples being old had a
28 rough--dark scaly bark--
29 There were a few white pines straggling

⁶⁶"so" written over text

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30

{into} this wood (only one large one)--

Many of the oaks have been cut--&
I counted about 110 rings on one small
white o. from which I should infer that
the tres would average much more
than that (perhaps between 150 & 200 years
Such a wood has got to be very rare
in this neighborhood-- Even the
gray brushy tops of this attracts your
attention at a distance.

As you approach the wood & even walk
through it--the trees do not affect you
as large--but as surely as you go quite
up to one you are surprised.

The very lichens & mosses which cover
the rocks under these trees seem & probably
are in some respects peculiar-- Such a
wood--at the same time that it suggests
antiquity--impacts an {usual} dignity to
the earth--

It is pleasing to see under the trees
great rocks covered with poly-pody
which has caught a great crop {of}
shining brown oak leaves to contrast
with its green--

This oak wood is now bare & the leaves
just fairly fallen--

This is prob. are of those woods, like Ebby
Hubbards, which was never cut off but

//

1 only cut out of--

2 I think it would be worth the while
3 to introduce a school of children to
4 such a grove--that they may get
5 an idea of the primitive oaks--before
6 they are all gone--instead of hiring
7 botanists to lecture to them when it is
8 too late-- Why you do not now
9 often meet with a respectable oak
10 stump even--for they too have decayed.

11 I see {in} this years round red. o acorn
12 tucked into a crevice in the bark of a
13 white O. a foot or more from the ground.

14 Even in this old oak wood there
15 is to be observed a resemblance to the primitive
16 woods-- The ground never having been cleared
17 nor cultivated has a more primitive look--
18 there are more ferns on it--& the rocks
19 are far greener--with these & with lichens
20 --never having been burned & bleached white
21 by sun & fire.

22 Lee of the corner speaks of an oak lot
23 of his in Sudbury which he bought in '31
24 & cut off (last & all of it last winter)--but
25 from the older stumps no sprouts have come
26 up--but good ones from the younger--

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31

You see the tufts of indigo--now broken
off & dropt exactly bottom up in the pastures--
as if an industriuous farmer had had been
collecting it by handfulls which he had dropt
thus.

It would be just sensible for them to
treat their young orchards or nurseries of
apple trees in the same way--i{.}e to burn
{the} over & raise rye there a year or two
thinking to do them good--

As for the vaccinia--I am disposed
to agree with those who derive the name from
{bacca a berry}--for one species or another of
this large family--is the berry of berries in most
northern parts of the world-- They form an under-
shrub--or sort of lower forest--even throughout
our woodlands generally--to say nothing of open
fields & hills-- They form a humble & more
or less dormant, but yet vivacious forest
under a forest which bides its time.

This wonderful activity of the squirrels
in collecting & dispersing & planting nuts & acorns &c
every autumn
&c ^ is the more necessary--since the trees
on whose fruit they mainly live are not
annual plants--like the wheat which
supplies our staff of life-- If the wheat
crop fails this years we have only to sow
more the next year & reap a speedy
harvest--but if the forest trees were

1 to be planted only at intervals equal
2 to the age of the trees--there would
3 be danger--what with fire & blight{--}
4 & insects--of a sudden failure & famine.
5 It is important that there be countless
6 trees in every stage of growth--that
7 there be an annual planting as of wheat.

8 Consider the amount of work they have
9 to do--the area to be planted!
10 more or less raining today--
11 // I hear that geese went over today.
12 // Alighted in Walden.

13 Nov. 4--60

14 Pm to Tommy Wheeler's Lot--

15 As I go over John Hosmers High Level--
16 there being considerable wind, I notice
17 for the {first} time that peculiar
18 blueness of the river agitated by the
19 wind--& contrasting with the tawney
20 fields--a fall phenomenon.

21 Tarbell's White pine grove N. W. of the
22 Irishmans--in the swamp--& some 30 to 40
23 years old--is so dense that there is no
24 growth under it--only a tawny carpet of
25 pine needles.

26 In the Tommy Wheeler lot S of the
27 old p. p. hollow--I see the stumps of
28 many white⁶⁷ pines & oaks which were

⁶⁷"w" poss written over "p"

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35

cut some four years ago--& no fire
oak
has been set there. These ^ stumps have
generally 53 or 54 rings--though
p. p. {&} & oaks
some ^ are much older--but I scarcely
of this age even
see a stump ^ which has sent up any
I notice one
shoots.^ The sprouts are from a much
younger growth-- It is evident that
all the larger stumps were too old &
effete--young as they were--
In 2 or 3 cases I notice these stumps
{of} oaks cut some 4 years ago--& having 53
or 4 rings (from which no shoot has put forth)
in a semicircle
2 together half inclosing ^ a very old & almost
completely decayed stump, which of course
was cut some 58 years ago. These
sprouts are rarely sound quite to the core-- Perhaps
the rest are sprouts--whose stumps have quite
disappeared--& this, ie. the great age
of the roots may account for its sending
up no more sprouts. I see then that the
stumps of trees which were cut 60 years
ago are still very common to be seen in
our woods.
I have but little doubt--that if Wether-
bee's old oak lot should now be cut--
no sprouts would come up from the stump.
It is by seeds that oaks would have
to be renewed there--if at all--but rather
it is time for a different growth--ie

1 for pines--& if he contemplates the
2 removal of these oaks--he should be con-
3 sidering how to {force} the growth of pines
4 there. They are already appearing thinly
5 in various sides within that wood.

6 I frequently notice the seeds of small
7 fruits & {weeds} left on stumps--by
8 birds & mice & even foxes (in their excrement.)

9 There is Primitive wood which has {never}
10 been touched by the civilized man-- We have none
11 of this

12 which has
13 Then there is Primitive woodland--(i.e ^ never been
14 ~~cleared~~ cut clean⁶⁸ off) &) which in age
15 now is mostly 2d growth--

16 Then there is Primitive copsewood (i.e which
17 has been cut clean off--but suffered to grow
18 up again--without further clearing or burning-

19 Then Copewood of other kinds.

20 Sophia brings me the drawer which held
21 almost all red o.
22 her acorns (~~not white o.~~) It is 17 1/2

23 inches x 12 1/2 & 2 inches deep--& I count
24 crawling about on the bottom 173 great
25 full-grown grubs with brown heads--which

26 have come out of the acorns by a hold
27 oftenest
28 ~~almost invariably just~~ at the edge of

29 the cup on one side--(and many of
30 & prob. some had crawled away within a month--
31 the grubs had been thrown away^) it {use}
32 & no doubt more are still to come out--
33 the bottom of this box is covered with

⁶⁸poss "clear"

1
2 4 or 5 times as many minute pinks grubs
3 which may be the progeny of the former--
4 are say
5 {--} Here ^ at lesat 865 (or ^ 1000~~0~~) grubs--
6 about 4
7 to ~~considerably less than 7~~ quarts of acorns
8 with their cups (the box was hardly more than
9 red. o
10 1/2 full-- I find that 60 ^ acorns with their
11 cups make 1-pint-- There are therefore about
12 500 acorns to 173 large grubs already out
13 in the box (to say nothing of those that have
14 been thrown & have crawled away--nor of
15 & prob. more yet to be produced
16 the 7 or 800 young grubs^!) Not quite
17 there
18 half of the acorns have grubs in them.
19Nov. 22nd about 1/3 as many more ~~of these acorns~~ grubs have come out of these acorns--
20 both large & small grubs--which will make nearly half as many large
21 Now add the squirrels--jays--crows,
22 grubs as acorns--& each of these large grubs has been the destruction of an acorn--
23 & other birds & quadrupeds that feed on
24 Is that already one half of these acorns have been destroyed by worms.
25 then--& the effect of the winters cold & rain--
26 & how many of {the} acorns of this year
27 will be fit to plant next spring?
28 It appears that nearly half of these red
29 oaks have already manifestly been destroyed
30 by worms. It is evident that there will be
31 at least 2 grubs to one of these acorns--though
32 of course the grubs will not always be with the
33 acorn.
34 This is one of the Nut weevils & since
35 they come from eggs laid by a beetle--it
36 would seem that many eggs must have
37 been recently laid.
38 White birch seed has but recently begun
39 to fall-- I see 1/4 of an inch of many cat-

1 kins bare--{may} have begun for a week--
2 To day also I see distinctly the tree sparrows
3 //
4 --& prob saw them as supposed some days ago.
5 Perhaps they feed on the birch seed as the
6 linarias do-- Thus the birch begins to shed
7 its seeds about the time our winter birds
8 arrive from the north.
9 Nov. 5{th}--60
10 Pm to Bloods Oak Lot--
11 Measure the great White oak near
12 the {base} of the Bridle Road just beyond
13 the NE corner of the Holden (?) Farm
14 at the ground it is about 19 feet in circ.
15 At 3 feet from the ground it is 11 feet
16 & the same at 5 feet & ap. more above this
17 & seven inches in circumference-- It is about
18 16 feet to the lowest limb. The whole
19 trunk standing aslant. It has a
20 black & {quite} rough bark--not at
21 all like that of the white oaks of
22 Wetherbees' & Bloods Lots-- There is
23 a large open space amid the huckle-
24 berry bushes beneath it--covered with
25 a short & peculiarly green sward--&
26 this I see is the case with other oaks
27 a quarter of a mile off.
28 There is a large chestnut in the
29 Lot E of this--& I observe that its
30 top is composed of many small branches
31 and twigs {dispersed} very regularly &
32 densely--(brush wise) with a firm distinct
33 more than semicircular edge against

1
 2 the horizon--very unlike the irregular
 3 open & more scraggy twigged oak{s}--
 4 Bloods Oak lot may contain about
 5 a dozen acres-- It consists of Red--black--
 6 & white oaks & swamp white oaks--&
 7 a very⁶⁹ little maple--
 8 The following are some of the largest that I saw--
 9 I measured 1 black o. which was at 3 feet high
 10 4 ft 8 inches in circ--another
 11 5 " 6 " & another
 12 the same--
 13 A Red O--was
 14 6 feet 3 inches one swamp white o.
 15 another 7 " 4 " was 6 feet 4 inches
 16 7 " 4 "
 17 7 "
 18 A white oak--was
 19 7 ft 7 inches, & another
 20 the same
 21 The Diameter of a 3d at 1 foot from ground (sawed off)
 22 was 31 1/2 inch average--
 23 This is quite a dense woodlot--
 24 even without considering the size of the trees--
 25 & I was rather {surprized} to see how much
 26 spread there was to the tops of the trees in it--
 27 esp. to the white oaks. The trees here
 28 rise far higher before branching, however,
 29 than in open land, some black oaks (if not
 30 others) were very straight & 30 to 40
 31 feet high without a limb.

⁶⁹inserted

1 I think that there was not so much
2 difference in color bet the trunks of
3 black & red oaks as {commonly}-- The
4 Red oaks were oftener smooth--or smoothish
5 ~~even~~ the largest of them. I saw very little
6 decay. Considering their number &
7 closeness, the trees were on the whole
8 larger than I should have expected--
9 though of course not nearly so large
10 as the largest pasture oaks. 1 to 2 1/2
11 feet in diameter or say generally--
12 the sizeable trees{,} a foot & a half in
13 diameter-- This {will} prob. do for
14 a specimen of a primitive oak forest
15 hereabouts. Such prob was the size &
16 aspect of the trees--

17 As for its age--I saw the stump of a
18 white o. (not quite so large as those I
19 measured) which had beed sawed off at
20 about 1 foot from the ground within 4 or 5
21 & 31 1/2 inches in diameter
22 years-- Perfectly level--& sound to the core.^

23 The first 33 (?) rings were so close & indistinct
24 as to be impossible to count exactly (occupying 3/4 of an
25 inch) the rest was perfectly distinct--
26 of the {center}
27 in all 147 rings--

28 Or by inches from middle
29 39--9--6--7--5--11--6--4--4--5--6--9
30 10--12 & then 3/8 of an inch left

31 From which it appears that it grew much
32 the fastest it at about the age of 89 years

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30

& very much the slowest for the 1st 33 years

I am struck by the fact that the more slowly trees grow at first, the sounder they are at the core, & I think that the same is true of human beings. We do not wish to see children precocious--making great strides in their early years--like sprouts--producing a soft & perishable timber--but better ~~as~~ if they ~~grow~~ expand slowly at first--as if contending with difficulties & so are solidified & perfected--

Such trees continue to expand with nearly equal rapidity to an extreme old age.

Another white o stump not so large but somewhat decayed--had 160 & more rings. So that you may say this wood is 100 to 160 years old.

I was struck by the orderly arrangement of the trees as if each knew its own place--& it was just so at Wetherbees Lot. This being an oak wood, & like that, somewhat meadow in the midst--the swamp white oaks with a very few maples occupied that part--& I think it likely that a similar selection of the ground might have been detected often in the case of the other oaks-- --as the white compared with the red.

As if in the natural state of things, when sufficient time is given, trees

1 will be found occupying the places most
2 suitable to each--but when they are inter-
3 fered with--some are prompted to grow
4 where they do not belong & a certain degree
5 of confusion is produced{--} i.e our forest generally
6 is in a transition state--to a settled & normal
7 condition.

8 Many young white pines the largest 20
9 ~~or 25 years~~ years old--are distributed
10 through this wood--& I have no doubt
11 that if let alone this would in {a}
12 hundred years look more like a pine
13 wood than an oak one.

14 Hence we see that the white pine may
15 introduce itself into a primitive oak
16 wood of average density--

17 The only sounds which I heard were the
18 notes of the jay--evidently attracted by
19 the acorns--& the only ~~qua~~ animal
20 seen was a red squirrel--while there
21 were the nests of several grey squirrels
22 in the trees--

23 Last evening--the weather being
24 cooler--there was an arch of northern
25 // lights in the north--with some redness--
26 thus our winter is heralded.

28 It is evident that the pasture oaks
29 commonly
30 are ^ the survivors or relics of old oak woods--
31 (--not having been set out of course--nor
32 springing up often in the bare pasture)
33 except sometimes along fences--

1
 2 I see that an the outskirts of Wetherbee's {&&}
 3 Blood's lots are some larger--more spreading
 4 & stragglng trees--which are not to be distinguishe{d}
 5 from those--such trees are often found as stragglers
 6 beyond a fence in an adjacent lot-- Or as an
 7 old oak wood is very gradually thinned out
 8 it becomes open--grassy & park-like--&
 9 very many owners are inclined to respect a few
 10 larger trees--on acc of old associations--
 11 until at length they begin to value them
 12 for shade for their cattle. These are
 13 oftenest white oaks. I think that they
 14 grow the largest--& are the {haridest}.

15 This final arrangement is in obedience
 16 to the demand of the cow-- She says looking
 17 at the oak woods--you tender twigs
 18 are good--but grass is better--

19 Give me a few at intervals for shade
 20 & shelter in storms--& let the grass grow
 21 far & wide between them.

22 No doubt most of those white pines
 23 in pastures which branch close to the
 24 ground--their branches, curving out & up-
 25 ward {harp} wise--without one erect leading
 26 shoot--were broken down when young by
 27 cows. The cow does not value the pine
 28 but rubs it out--by scratching her
 29 head on it.

1 Nov. 6th--60

2 Sawed off 1/2 of an old p. p. stump at
3 Tommy Wheeler's hollow-- I found that
4 though the surface was entire & ^{ap.} ^ sound except
5 one or 2 small worm holes--& that the
6 sap was evidently decaying--yet within
7 or just under the surface--it was extensively
8 honey-combed by worms--which did not
9 eat out to the surface-- Those rings
10 included in the outmost 4 or 5 inches were
11 the most decayed--(including the sap wood).

13 NB Nov 7th to Cambridge & Boston

14 Nov. 8th

15 2 Pm to mt Misery via Sug maples & Lees {Br.}

16 The White O. near the Eng. {cress} at 3 feet is
17 9 feet 1/12 in circ. & has a rough & dark
18 bark. By its branching ^{so} low it suggests that
19 it may have stood in comparatively open
20 ground most of its life--or such as the outmost
21 oaks in Bloods ~~grove~~ wood toward his house.

23 I notice along the corner road--
24 beyond Abiel Wheelers--quite a number
25 of ~~pitch~~ little white pines springing up
26 against the S. wall{--}whose seed must
27 have been blown from Hubbards ^{some} grove ^ 50
28 rods east-- They extend along 1/4 of a mile--
29 at least-- Also a wet & bushy meadow
30 some 40 rods in front of {Garfield's}
31 is being rapidly filled with with white
32 pines whose seeds must have been blown
33 an equal distance.

1 (no large ones) there are under the densest
2 part--& there are no little p. pines--though
3 they are common--in the more open parts--
4 {Seed} bearing pines are distant here

5 I observe on the trunk of one of the
6 largest of these p. p. (which may be 40
7 years old) standing on the outside the
8 wood--minute or ~~short~~ short branches--
9 commonly mere tufts of needles in
10 rings around the trunk--reminding you
11 ever of the branches of the horse-tail they
12 are in this case so regular--perfectly
13 horizontal & 6 to 12 inches apart--some
14 are 2 or 3 years old but only 3 to 6 inches
15 long. These seem to represent the old
16 whorls of branches--perhaps the tree growing
17 slowly at the top--the dormant buds
18 here are stimulated. I often {had}
19 seen in another wood an outside p. p.
20 a tall one, in which some of these tufts
21 had ap. developed into branches 4 or
22 5 feet long--in imperfect whorls, {--}
23 the top being partly dead.⁷⁰

24 A White o. stump, roadside W of
25 Abel-minot house site--19 1/2 inches
26 diam (wood) 65 rings

27 A p. p. standing on op. side more W--
28 is 5 9/12 feet in circ. at {3} feet.

29 I observe on the W. side of

⁷⁰poss bleedthrough after "dead."

1
 2 cut off
 3 mt misery--~~cleared~~ ap. last winter--
 4 mulleins--very tall sprung up--(as well
 5 as fire weed & g. rods) Saw an abundance of
 6 Mulleins in a young woodlot with much
 7 bare ground--burnt open a year or so ago
 8 behind Mason{s} on the Bridle road on the
 9 5th--so that the mullein too might be
 10 called a fire-weed-- But I notice that
 11 those plants so called--~~as~~ the epilobium
 12 & senecio--& which are supposed to owe
 13 their origin to the fire--generally spring
 14 up on a surface made bare by whatever
 15 cause-- They are the first weeds after
 16 a clearing or cutting.

17 On this same mt Misery (cut last winter)
 18 An oak stump (ap. black) 11 1/2 inch Diam. 61 rings
 19 A white o. 13 inch 58 rings
 20 I count 3 ~~or~~ 4 or more of these stumps--
 21 (which are as plain as usual) & make from 54
 22 to 61 rings--say av. 58--years. Yet in
 23 of these
 24 several ^ instances they were manifestly sprouts
 25 & there was the old stump cut 58+ 1
 26 v Nov. 13
 27 years ago. These stumps did not show
 28 any trace of the axe--but there was one
 29 which lay on its side--ap. of the same
 30 date but from which no sprout had
 31 come--which was much better preserved
 32 & did show the traces of the axe plainly.
 33 These recent stumps--though only some

1 60 years old had in no case sprouted
2 again--& I think that this is because--
3 they are sprouts--& that the vitality of
4 the stock was so nearly exhausted. These
5 old stumps are frequently half enclosed in the
6 recent stump--

7 I think that I readily detected the sprout
8 also by the greater breadth of the rings the
9 first few years--

10 The stumps of trees which were cut {in}
11 the last century--(oaks at least) must
12 be not uncommon in our woods--

13 Looking from this hill--I think that
14 I see considerably more oak--than pine
15 wood--

16 Ed. Hoars P. pine & white p. Lot on
17 the S side of this Hill is evidently a new--
18 ~~lot~~ wood. You see the green moss--
19 the cladonia--& birches (which
20 I think do not spring up within an old wood)
21 & even feel with your feet an old cow-
22 path--& see an old apple tree inclosed
23 in the wood. Are not birches interspersed
24 with pines a sign of a new wood?

25 When a p. p. wood is cut that {fringe}
26 or edging of little p. p. which commonly surrounds
27 it--may remain to grow up & in a measure
28 represent it. Also ap. when for any reason
29 {,} as for frost--land when the wood has been
30 cut remains comparatively bare for several
31 years & becomes only grassy--p. p. (as well
32 as white p) may{--}catch there thickly.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34

I constantly meet now with those tufts
 %now broken off & dropt {exactly bottom up}%
 of Indigo weed (turned black) as it were dropt
 by a careful hand in woodland paths or
 %an industrious farmer or}% %been collecting it by handfulls}%
 in pastures--as if %^% a simpler had %^% dropt % [—] & had}%
 they grow {up} many stems close together &
 his parcels--%{thus}% The fact is that ^ their branches
 are so interlaced as not to be easily separated
 so that the wind operates the more
 powerfully & breaks them all of together
 at the ground--~~So that~~ & then on ac--
 of their form these parcels are deposited
 {exact}
 ^bottom up commonly--& you see 3 or 4
 to 15 or more stems within a diameter of 4
 or 5 inches--looking just as if somebody
 had plucked them and laid them to-gether%)2%
 %So these seeds {& fly-away grass seed dispersed}%
 I also see the fly-away grass going%)1%
 over a wall or rock from time to time--
 The salix sericea--has just blackened the
 ground with its leaves--
 These are unusual phenomoena
 Dr (?) Manasseh Cutler--in the 1st vol. of the
 Boston Academy's Reports for 1785--speaks
 of whortle berries only the half-{courted}⁷¹ or disparaging
 way in which the English do--& have reason to--
 --saying that children have to eat them in milk
 His eyes had not been opened to their significance--
 they were without honor--in their native country--
 but I have no doubt that he ate them himself
 in secret.

⁷¹"converted" in 1906

1 Nov 9th 60
2 %v. also Nov. 16%
3 12 {pm} to Inches' Woods in Boxboro--
4 This wood is some 1 3/4 miles from West
5 Acton--(whither we went by RR.) It is
6 in the E part of Boxboro--or both sides
7 of the Harvard turnpike--we walked
8 mostly across lots from W. Acton to a part
9 of the wood about 1/2 mile N of the
10 turnpike--(& the woods appeared to reach
11 as much further north--) we then
12 walked in the midst of the wood in a
13 by W of a
14 S westernly ^ direction, about 3/4 mile--
15 crossing the--turnpike W of the maple swamp & the brook
16 & thence S by E nearly as much %{{?}}% more--
17 All the way in the woods & chiefly
18 Old oak wood-- The old oak
19 wood--as we saw from the bare hill
20 at the south end--extends a great deal
21 further ~~N~~ West & N. W. as well as N--
22 than we went--and must be at least
23 a mile & a half %{{?}}% from N to S by a mile to
24 a mile & a quarter %{{?}}% possibly from E to W--
25 %{{4 or 500}}%⁷² %v 2 ps forward%
26 Or there may be a thousand acres
27 of old oak wood-- The large⁷³ wood
28 is chiefly oak & that white oak--
29 though black{--}red & scarlet oak are
30 also common-- White pine is in {considerable}

⁷²See Torrey 1906 edition

⁷³inserted

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37

quantity--& {large} pitch pine is scattered
& I saw some chestnut at the south end
here & there--^ Saw no hemlock or birch to speak
of--

Beginning at the N end of our walk the trees
which I measured were (all at 3 feet from ground
except when otherwise stated{ })
A Black oak 10 feet circumference trunk {late}
& of regular form
Scarlet oak 7 feet--3 inches by Guggins Brook
White Oak 8 feet
" " 10 " forks at 10 ft
" " 15 " at 2 1/2 feet bulging very much near
ground--trunk of a pyramidal form--
1st branch at 16 feet--this just N of
turnpike & near Guggins Brook--
divides to 2
" " 9 feet 4 inch ~~branches~~ at 5 feet
" " 9 ft 6 inch divides to 2 at 5 feet
Red O. 8 feet (South of road)
White pine 9 feet
A Scarlet or Red O stump cut. 20 1/2 inch diam. 160 rings

I was pleased to find that the largest
of the white oaks--growing thus in a dense
wood--often with a pine or other tree within
2 or 3 feet--were of pasture oak size
& even form--the largest commonly branching
low very many ~~branch or~~ divide to 2
trunks at 4 or 5 feet only from the ground--
some
You see ^ white oaks & even some others
in the midst of the wood nearly as spreading
as in open land.

Looking from the high bare hill at the
S end--the limits of the old oak wood--
(so far as we could overlook it) were

1 very distinct; its tops being a mass of
2 gray brush--contorted & intertwisted
3 twigs & boughs--while the younger
4 oak wood around it or bounding
5 it--though still of respectable size--
6 still densely
7 was ^ clothed with the reddish brown
8 leaves--

9 This famous oak lot--(like Bloods
10 & Weatherbees) is a place of resort
11 for those who hunt the grey squirrel
12 They have their leafy nests in the oak tops.

13 It is an endless maze of grey oak
14 trunks & boughs stretching far around.
15 The great mass of individual trunks which
16 you stand near is very impressive.

17 Many {sturdy} trunks (they commonly stand
18 a little aslant) are remarkably straight
19 & round--& have so much regularity
20 in their roughness as to suggest smoothness.
21 The Older⁷⁴ or larger {&} white oaks--
22 were of a rougher & darker bark than
23 Weatherbees & Bloods--though often betraying
24 the same tendency to smoothness--as
25 if a rough layer had been stripped off
26 near the ground.

27 I noticed that a great many trunks
28 (the bark) had been gnawed near

⁷⁴written over text

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30

the ground--different kinds of oak--
 & chestnut--perhaps by squirrels.
 Nov. 10th 1860
 Cheney gives me a little history of the
 Inches woods. He says it was a grant
 to Jekil (John? Jekil) by the crown--&
 that it amounted to half of Boxboro as well
 as much of Stow & Acton. That Jekil had
 a Summer House⁷⁵, where Squire Hosmer's house
 stands in Stow, before the revolution--but
 at that time withdrew into Boston. {He}
 It was a great event when he used to come
 out to Stow ~~to his~~ in the summer--Boxboro
 was a part of Stow then. Mr. Hosmer
 had charge of the Lands for Inches--&
 the kitchen of his house was partly the old
 summer house of Jekil--& he also remembered
 an old Negro named York, who had been
 a slave of Jekil--& he the negro said
 that 20 of the 30 acres bought of
 Inches by Hosmer--behind his house was
 or picket fence
 once fenced in with a paling 10 or 15 feet
 high and formed a park in which Jekil
 kept deer. The neighbors used to
 come & peep thro the paling at the
 deer--
 Henderson Inches--hearing of these
 lands about the time of the revolution

⁷⁵"Summer House" written over "summer house"

1 went to the heir of Jekil & purchased the
2 quite
3 whole tract ~~pretty~~ cheap--& they had
4 been a fortune to the family since-- Many
5 farms have been made of parts of the
6 wood--& thousands of dollars worth
7 Had realized may be \$150 000 from it--
8 of wood{--}have been sold at a time--
9 Cheney had heard that there were about
10 400 acres of the Inches lands left--
11 Henderson Inches died 2 or 3 years ago--
12 & now his heirs wished to sell--but would
13 not divide it--but sell in one body--
14 {Ruggles} Nouse & Mason wished to buy
15 --but not the whole--
16 Except what has been sold--or generally
17 --Inches would not have it cut-- He
18 was short--& stood out for his price &
19 also liked to keep it Hence it is a
20 primitive oak wood--& said to be the
21 most of one in Massachusetts--
22 ⁷⁶Collier tells me that his Sunflower
23 head (now dried) measures just 21 1/2
24 inches diameter--the solid part--
25 Most think that Inches wood was
26 worth more 20 or 30 years ago--that
27 the oaks are now decayed within.
28 Some have suggested that it would be much
29 for the benefit of Boxboro to have it cut off
30 & made into farms--but Boxboro people--
31 answer--no--that they get a good

⁷⁶horizontal lines frame this paragraph: above "Collier" and below "inches"

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30

deal more in taxes from it now than they would then.

How little there is on an ordinary map! How little {I mean} that concerns the walker & the lover of nature-- Between those lines indicating roads--~~are~~ {appear} blank space in the form of a square or triangle or polygon--or segment of a circle--& there is naught to distinguish this from another area of similar size & form-- Yet the one may be covered in fact--with a primitive oak wood, like that of Boxboro--waving & creaking in the wind such as may make the reputation of a county-- While the other is a stretching plain with scarcely a tree on it-- The waving woods--the dells & glades & green banks & smiling fields--the huge boulders &c &c are not on the map--nor to be inferred from the map.

That grand old oak wood is just the most remarkable & memorable thing in Boxboro--& yet if there is a history of this town written anywhere--the history or even mention of this is probably altogether omitted, while that of the first (& may be last) parish is enlarged on.

What sort of cultivation or civilization & improvement is ours to boast of-- if it turns out that as in this instance

1
 2 branch quite as low & are nearly as
 3 spreading as pasture oaks-- Yet generally
 4 they rise up in stately columns--30 or 40
 5 or 50 feet--diminishing very little-- The
 6 black & red & scarlet oaks are especially
 7 columnar & tall without branches for a
 8 long distance--& these trees are shaped
 9 more in their trunks like an elm than a
 10 pasture oak-- They commonly stand aslant
 11 at {~~varey~~} various⁷⁸ angles-- When in the
 12 midst of this great oak wood you
 13 look around you are struck by the
 14 great mass of grey-barked wood
 15 that fills the air.

16 The leaves of these old oaks are now
 17 ~~generally~~ fairly fallen--& the ground //
 18 is densely covered with their rustling reddish
 19 brown scales.

20 A peculiarity of this--{⊖} compared with much
 21 younger woods--is that there is ~~no~~ little
 22 or no under-wood--& you walk freely
 23 in every direction--though in the midst of
 24 a dense wood-- You walk in fact under
 25 the wood--

26 The wood not having been cut to any extent &
 27 the adjacent county being very little occupied--
 28 I did not notice a single cart path
 29 where a wheel track was visible--at most
 30 a slight vista--& one foot path--

⁷⁸poss written over text

1 I knew that I was near the S. W. edge by
2 the crowing of a cock.

3 This wood is said to have been a great
4 resort for pigeons. We saw one large
5 pigeon place--on the top of the hill where
6 we first entered it.--(now used.)

7 Seeing this I can realise how this
8 country appeared when it was discovered--
9 Such were the oak woods which the
10 Indian treaded hereabouts.

11 Such a wood must have a peculiar fauna
12 to some extent. Warblers must at least
13 pass through it in the spring which we do not
14 see here--

15 We have but a faint conception of a
16 full-grown oak forest--stretching un-
17 interrupted for miles--consisting of sturdy trees
18 from one to 3 & even 4 feet in diameter--
19 whose interesting branches form a complete
20 & uninterrupted canopy-- {Many} trunks old
21 & hollow in which wild beasts den-- Hawks
22 nesting in the dense tops--& deer glancing
23 between the trunks--& occasionally the
24 Indian with a face the color of the
25 faded oak leaf.

26 Grimes said that he could almost
27 clasp the loins of my lings⁷⁹ as it hung
28 up by the heels before it was skinned--it
29 was so slender there--that a man

⁷⁹"lynx" in 1906 edition

1
 2 with a large hand could have done it.
 3 Richardson in his Fauna Bor. Am.
 4 (which I consulted⁸⁰ at lam. on the 7th ult)
 5 says that the French Canadians call the
 6 Canada lynx indifferently⁸¹ Le Chat or Le
 7 Peeshoo--& Charlevoix falsely calls it Carca-
 8 jou which is the Wolverene--& hence much
 9 confusion & error among naturalists. "7 to 9000
 10 are annually procured by the Hudson's Bay⁸² Company.
 11 It is found on the Mackenzie River as far
 12 north as latitude 66°" Easily killed by a
 13 strike with a small stick on the back! (?)--
 14 breeds once a year & has 2 young. Never
 15 attacks man--a poor runner--but
 16 a good swimmer--Aud. & Bachman repeat
 17 Richardson{:}
 18 Ac{c} to Pennant--Lawson & Catesby repeat the
 19 false hoods about its dropping from trees on deer &c.
 20 Observed in the dropping of a fox the
 21 other day--with fur--some quarter shaped
 22 (or triangular segments) seeds & roughish which
 23 may have been seeds of rose hips-- They were white--
 24 so are the sweetbriar hips--but the common wild
 25 rose hips are brownish--were they prinus seeds?
 26 If rose hips--then the fox⁸³ enjoys what Manasseh
 27 Cutler in 1785 called "The conserve of hepps of
 28 the London dispensatory"-- without the sugar.
 29 Elijah Wood Senior--
 30 tells me that about 1814 (or before 1815

⁸⁰"t" uncrossed in "consulted"

⁸¹poss "indiffirently"

⁸²poss "bay"

⁸³"x" poss uncrossed in "fox"

1 in which year he was married--& while he still
2 lived at his Father's on Carlisle road)
3 As he was riding to town on horseback in
4 the evening alone to {at} singing {~~so~~ loud}
5 to prepare for Thanksgiving--he stopped
6 to let his horse drink at the brook beyond
7 Winn's--when he heard a cry from some
8 wild beast just across the river. It affected
9 him so that he did not stop to let his horse
10 drink much. When he returned later--(now
11 with others) they all heard it--as if an-
12 swering to their shouts--somewhat further up
13 the river-- It was also heard by some teamsters
14 & also an animal supposed to be the same
15 was said to have been seen by a woman crossing
16 the road just west of where Wood now lives--
17 It was thought to be a wolverene.

18 I have now measured in all 8 pitch
19 pine stumps at the Tommy Wheeler hollow
20 sawed off within a foot of the ground--

21 I measured the largest diameter & then at
22 right angles with that--& took the average--
23 & {then} selected that side of the stump on which the
24 radius was of average length--and counted
25 the no of rings in each inch--beginning at
26 the center--

27 Thus--

	2	3	4	5	6	7	8	9	10	11	12	Radius Diam. In all circles^	%303%
1 2 3 ⁴ 1st 4inch													
5 6 7 1st tree	9- 12+	9- 7+	7+ 7+	11 1/2	16 1/2	(?) (?) 26	25	26	17			9 3/8	158
8 9 10	2 10+ 7+	6 6	5 1/2 5	5	6 1/2	9 1/2	11	13 1/2	19	33		in 5/8 inch 38 11 5/8	164
11 12 13 14 15	3 13- 11	9 9	11 11	15	21	16	20	28	32			10 more correctly 176(?)^	168
16 17	4 15 12	10 10	16 16	24	19	18	16	15	3			in 1/8+ inch 9 1/8	148
18 19 20	5 ⁸⁵ 12 12	9 9	9 9	11	23	17	21	32	25			in 3/4 in 9 3/4 I <u>have</u> this more correctly 71(?)^165	
21 22 23	6 15 13	11 11	14 14	18	19	23	21	21	16			in 1/2+ inch 9 1/2	171
24 25 26	7 13 11	11 11	11 11	22	29	42		24				in 5/8 inch 7 5/8	163
27 28	8 16 13	12 12	13 13	11	14	14	19	28	10			in 1/4 in 9 1/4 about 150	
29 30 31 32 33 34	{103 x 13- 11+ 10- 11- 15- 18+ 21- 19 23+ 25+ 33	91 11+ 10- 11- 15- 18+ 21- 19 23+ 25+ 33	77 10- 11- 15- 18+ 21- 19 23+ 25+ 33	86 1/2 117 1/2 148	165 1/2 {153}	163 1/2 {87}	33					Av. R. Av. age about 9 1/2 av. Diam 19 19)326(17 <u>19</u> 136 <u>133</u>	162 or 3 years
35 36 37	(of these 8) average growth about 1/17 inch per year												
38	Calling the smallest <u>no</u> of rings in an <u>inch</u> in <u>each</u>												
39	tree 1--the comparative slowness of growth, { or narrowness }												
40	of the inches is thus expressed--vize												
41	⁸⁶ 1	1.3	1.7	1.3	1.	1.6	2.3	3.7	3.6	3.7			
42	2	2.	1.4	1.2	1.2	1.	1.3	1.9	2.1	2.7	3.8	6.6	
43	3	1.4	1.2	1.	1.2	1.7	2.3	1.6	2.2	3 1	3.4		
44	4	1.5	1.2	1.	1.6	2.4	1.9	1.8	1.6	1.5			
45	5	1.3	1.3	1.	1.	1.2	2.4	1.9	2.3	3.4			
46	6	1.4	1.2	1.	1.3	1.6	1.7	2.1	1.9	1.9	2.5		
47	7	1.2	1.	1.	1.	2.	2.6	3.8	3.6				
48	8	1.4	1.2	1.1	1.2	1.	1.3	1.3	1.7	2.5	3 6		
49	From the line {x} I <u>calculate</u> the average slowness												
50	rate of growth in diameter (or radius) each successive 10												
51	(in decimals of an inch--)												
52	years thus--Turn over--												
53	%(It would have been much easier as well as <u>more correct</u> if I had%												
54	%counted at first the <u>no</u> of rings to each inch)%												

⁸⁴each column divided by vertical line in ink

⁸⁵"diam. 19 1/2" inserted by number "5"

⁸⁶each column divided by vertical line in ink

1
 2 10 decades though much more slowly in the
 3 11th & 12th decades (or from 100 to 120 years) the
 4 rate was accelerated--or they grew faster than
 5 from 80 to 100--but after the 12th decade
 6 the rate of growth steadily decreased to
 7 the last--when it was less than 1/3 what
 8 %{ac. to calc. but actually still less}%
 9 it was in the 3d decade--%^%

10 When growing fastest--(or between the 20th &
 11 30th year) the radius often was not increased
 12 1 inch in 10 years-- But after they were
 13 %{on an av. 28/100}%
 14 160 years old they did not grow %^% 4/10⁹⁰ of an
 15 inch in 10 years--or 1/25⁹¹th of an inch in one
 16 %1/36%
 17 year%{--& sometimes much less as has been stated}%

18 On an average--but accurate
 19 observation these 8 trees {gre} were gaining
 20 the most in diameter at about the 30th year
 21 & least (with one exception) in the last
 22 10 years of their existence.

23 Many have infered that it is most profitable
 24 to cup p. p. when about 30 (or 40) years old--
 25 most rapid
 26 but they seem to forget that the {~~same unusual~~} increase⁹²
 27 in diameter when the tree is only 10 or 15 years old
 28 does not indicate so great bulk of wood
 29 added to the tree, as a much less increase in
 30 diameter when it is 50 or a hundred years
 31 old. Indeed then trees--slowly as they
 32 appeared to grow at last--increased in bulk
 33 far more rapidly in the last 20 years than
 34 Therefore
 35 in the 1st 20--or as 30 to 10. v bot of np.

⁹⁰"4/10" crossed out in pencil

⁹¹"1/25" crossed out in pencil

⁹²word inserted

1 The {abochote} area of the unusual
2 rings (which is in the same proportion as the
3 bulk of wood formed) each 10 years is for
4 the--(calculated from the measurement on the 3d p. back{ })

5 1st tree⁹³
6 ⁹⁴1st
7 10 yrs 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17
8 inch
9 3.9 7.9 16.5 28.1 23.2 21.6 18.1 15.7 15.7 18.8 18.8 19.7 20.5 20.5 {15}
10
11 2 3.1 17.3 39.3 53.4 43.2 44.8 41.4 33. 31.4 22.3 20. 20. 16. 12. 12. 12.
12 3 2.4 6.7 15.6 19.5 19.2 18.4 16.5 17.4 25.5 24.5 23.6 21.3 19. 19. 18.8 18.7 18.7
13 4 2.1 5. 10.2 15.1 13.8 12.4 11.8 13.7 18.2 20. 22.7 26.7 29.5 35.6 29.7
14 {+-boles}
15 5 2.6 6.8 13.6 22.3 25.4 18.2 15. 18.6 24. 23. 22.4 19. 16.7 16.7 17.2 18.1 18.1
16 6 2.1 4.7 8.7 14.4 15.7 15.7 15.7 18. 18.2 17.8 17.8 21. 22.4 24.2 25.4 23.4 21.3
17 7 2.4 6.7 12. 17.1 17.1 12.8 12.7 11.9 11.9 11.2 9.7 9.7 9.7 9.9 11.8 11.8
18 tree 2.
19 8 ~~1.9~~ 4. 7.8 13.1 16.5 22.2 25.2 25.2 29.2 28. 24.7 20.2 19.1 19.1 14.9

20 %20.6 59.1 {-} 183.0 174.1 156.4 174.1 159.7 152.9 143.8 58.1%
21 %123.7 166.1 153.5 165.6 157.6% 157.0 84.0

22 22.9- 20.8- 19.2- 20.7 19.9 19.6 16.8
23 %av. 2.6 7.4 15.5- 21.7 19.5 21.8- 22- 19.1 18.9 19.4-%

24 %or plainer%

25 2.6- 7.4- 15.5- 22.9- 21.7 20.8- 19.5 19.2- 21.8- 20.7 20.- 19.9 19.1 19.6 18. 16.8 19.4-%
26

27 ⁹⁵By actually measuring the space covered by each successive 10 rings--
28 X for the 5th tree I get

29 .9 .6 1. 1.1 1. 7. 5. 5. .56 5. 5. .37 .25 .44 .25 .31 .25

30 ⁹⁶Ac to the above most wood is made in the 4th decade

31 though there is but little decrease in amount afterward
32 or even 40
33 There is a loss of time if you cut at 30 ^ years

34 2.6
35 for supposing that a new p. p. were at once to 7.4
36 15.5
37 take the place of the old one, at the end of 22.9
38
39 40 years more you could only have got--
40 21.7⁹⁷ 48.5
41 of wood more instead of 20.8 81.2 more which
42 19.5
43 you would have had by this time 19.2 if you had let
44
45 the tree stand--
46 81.2

⁹³line connects "1st tree" with appropriate grid

⁹⁴T draws vertical and horizontal lines to made a grid for his chart

⁹⁵This note and corresponding chart are circled in pencil

⁹⁶this line and following marked by pencil line in left margin

⁹⁷inline chart separated by brackets on either side, continues for 3-4 lines

1

2 Or if you had cut it at 80 years you would only have
 3 after 80 years more 21.8
 4 ~~got~~ 129.7 of wood[^]--instead of the ~~additional~~ 20.7
 5 20.
 6 155.9 that ~~would~~ might have grown 19.9
 7 48.5⁹⁸ 19.1
 8 Or even if you should cut every 40 years 97.0 19.6
 9 194 0 18.
 10 you would after 160 years have got only 16.8
 11 155.9⁹⁹ _____
 12 194. {of wood} to 129.7 that you might
 13 _____ 155.9
 14 have had--
 15 285.6
 16 From which I infer that the greater bulk of
 17 wood made at the 3 & 4th decade is so little
 18 more than {that} made in any succeeding 10 years
 19 of the trees age--& so much more than that
 20 made in the previous 10 years--that if you
 21 want this kind of wood it is best to let the tree stand
 22 as long as it is round & growing.

23 To be sure--the above calculation supposes the
 24 tree to increase in height in prop. to its age--(which is
 25 hardly the case) & also that the same number
 26 of large trees can stand on the same area
 27 as of small ones-- But even after these
 28 deductions--when we consider the proportionally
 29 greater value of large timber of this kind--it
 30 must be best to let it grow as long as it will.

31 The same is true until the last 40 years
 32 makes less wood than the first 40-- The 1st 40 makes
 33 19.6 (However, the time of cutting may depend partly
 34 48.5 the last¹⁰⁰ 18 on the no of trees that stand in a given area--
 35 16.8 & also on whether they are wanted for fuel--or
 36 19.4 for timber--many small being about as good
 37 _____¹⁰¹ for the former use as a few large--)
 38 76.8

39 i.e these trees made more wood any other 40
 40 years than the 1st-- Why then {employ} them
 41 then only?

⁹⁸line drawn on left of chart to separate it from text

⁹⁹parenthesis-like lines on either side of "155.9" and "129.7"

¹⁰⁰line drawn to connect "last" with "76.8"

¹⁰¹line poss. drawn in pencil

1
 2 A white O. standing by the fence W of {Spanish}
 3 Brook dam on Moore's Lot--circ. 6 ft 2/12 at 3 feet
 4 {--} Near by a horn beam 1 1/2 feet circ. at 3 feet
 5 J. Bakers p. pines S of upper
 6 wood path N of his house--abundantly
 7 confirm the rule of young white pines--
 8 under p. p. That fine young white p. wood
 9 W of this is partly of these which were left when
 10 the p{.} p. were cut.

11 Baker's hill bet Farm & Pleasant meadow
 12 oak (ap. Black) Diam. 26--71 rings

13 The stumps here were cut some 5 or 6 years
 14 ago & have 50 to 60 rings--commonly--no sprouts
 15 from those¹⁰² at this age--here--

16 On top of Mt Misery--looked again
 17 at those old stumps (of the 8th ult) Then
 18 are 3 or 4 quite plain--just showing themselves
 19 above the surface, with rounded flaky decaying
 20 & crumbling edge--close to the ~~more~~ recent stump
 21 or shoots
 22 of the shoot ^ which sprang from them--& which
 23 were cut last winter-- One of these recent
 24 stumps counted tonight gives 60 years--but
 25 the 1st 2 or 3 are uncertain-- Hence this old
 26 stump is as old as the century.

27 There are several perfectly dry & exposed
 28 stumps on bare rocky shelves--or else lying
 29 on rocks on their sides--quite well preserved
 30 & showing the marks of the axe which I
 31 have but little doubt are of the same age--

¹⁰²"those" poss written over "them"

1 preserved by being tipped out of the earth
2 %{v ac. p pine stump ap. 5 in 59}%
3 many years ago.

4 Am surprised at the very slow growth
5 of some hickory (stumps) along the wall
6 on the top of this hill-- So fine I did
7 not count quite accurately

8 1 was 10 inch in Diam. with 104 rings
9 Have this
10 " " 6 1/2 v Nov"{9}!¹⁰³ " about 115 (?)%{?}%"
11 " " 14 1/2 " " 84
12 " 11 3/4 " " 121

13 I think that the oak stumps have lasted
14 unusually long on this hill on ac. of
15 their having originally grown slowly here--
16 & since {been} so much exposed to the light
17 & air--over & amid the rocks--

18 Nov 14th--60

19 // River 2 feet 4 inches above SL. (& at
20 height) on ac. of rain of 10th & 11th & 12th

21 The red maple on S edge of
22 Trillium Wood--is 6 feet 3 inch in circ.
23 at 3 feet.
24

25 // Yellow butterflies still

26 Almost all holes in & about stumps
27 have nut shells or nuts in them

¹⁰³T writes a note to himself over the ditto marks

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32

Nov 16th 60--

Pm to Inches Woods' This & yesterday
Ind. Summer days //

Walked over these woods again-- First--
from Har turnpike at where Guggins Brook
leaves it which is the last¹⁰⁴ edge of the
old wood--due north along near the
edge of their wood & at last more NW along
edge {to} the cross road--a {strong} mile--

I observe that the black red & scarlet
oaks are generally much more straight
& perpendicular than the white--& not
branched below-- The white oak is
much oftener branched below and is more
irregular--curved or knobby--
1st
The large erect black o. measured on
the 9th was by the path at {front} of hill SE of
Fig. place-- Another more north--
is (all at 3 feet when not otherwise stated)
10 1/2 in circ.

There is not only a diff. between most of the
white o's--within Bloods wood--&
the pasture oaks without--the former
having a very finely divided & comparatively
soft-tawnyish bark--& the latter
a very coarse rugged & dark colored
bark--but there is here a sim-
ilar difference within this wood
i.e. some of the white o's have a hard
rugged bark--in very regular oblong

¹⁰⁴poss "East "

1 squares or checkers (an agreeably
2 regular roughness like a coat of mail)
3 while others have a comparatively finely
4 divided & soft bark--

5 I see one white o. shaped like
6 this {drawing}¹⁰⁵ It happens oftenest
7 here I think that the very largest
8 white o have the most horizontal
9 branches & branch nearest the ground,--
10 which would at first suggest that these
11 trees were a different variety--from
12 the more upright & rather smaller
13 ones--but it may be that these
14 are alder--& for that reason had
15 more light & room & so temptation
16 to spread when young.

17 N Westerly from Pig. place (near base of
18 hill-- a white o. 6 3/4 in circ
19 " " " 8 4/12 "
20 " " " 6 11/12

21 The last one grows close against
22 a rock (some 3 feet high) & it
23 has grown over¹⁰⁶ the top & sides of this
24 rock--to the breadth of 12 & 18 inches

¹⁰⁵drawing continues for 2 lines down and 1 line up into text

¹⁰⁶"v" written over "f"

1
 2 in a thin close-fitting saddle-like manner--
 3 very remarkable & showing great vigor in
 4 the tree.

5 Here too coming to water--I see the swamp-
 6 white oak rising out of it--elm-like
 7 in its bark & trunk--Rad maples also
 8 appear here with them. It is interesting to
 9 see thus how surely the character of the ground
 10 determines the growth. It is evident that
 11 in a wood that has been let alone for
 12 the longest period the greatest regularity
 13 will be observed--while in our ordinary
 14 often
 15 woods man has ^ interfered & favored the
 16 growth of other kinds than are best fitted
 17 to grow there naturally-- To some, which
 18 he does not want, he allows no place at
 19 all.

20 Hickories occasionally occur--sometimes
 21 scaly barked--if not shag-barks--also
 22 black-birch & a few little sugar maples.

23 Still going north--a white pine 9 feet circ.

24 The wood at the extreme N end
 25 (along the road--→ is considerably smaller)
 26 After proceeding W along the
 27 road; we next went W {^} W by S. through
 28 a maple & yellow birch swamp.

29 In which {a} black o 8 ft 4/12 circ
 30 a red maple--6 feet 8 1/2 A black birch 7 feet
 31 a black birch 8 feet. & in the extreme

1 N westerly part of the wood--close to the
2 road--are many large chestnuts--
3 with many great knobs or {excrescences}
4 one 11 3/4 feet circ^. Another 12 7/12
5 We next walked across the open-
6 land by the road to the high hill NE of
7 Boxboro Center-- In this neighbor-
8 hood are many very large chestnuts--
9 Of course related to the Chestnut wood
10 just named-- 1st along this road just
11 over the N. wall--beyond a new house--
12 one 13 11/12 {fee} in circ.
13 2d 16 ~~4/12~~ a few rods more west by the wall
14 then perhaps 50 or 60 rods more west & may
15 be 8 or 10 rods N from the road along
16 a wall--{the}
17 {then}
18 ¹⁰⁷3d 15 2/12 & ^ near the road SW from this the
19 4th 15 4/12 & some rods further N toward hill
20 & house the
21 of O & J. Weatherby
22 5th 13 7/12 then NE--in lower ground (?) the
23 6th 16 feet then near base of hill beyond house the
24 at ground 21 2/3
25 7th 16 2/12 at 2 feet from ground) next some
26 rods west of the hill the
27 then
28 8 17 8/12 {"} at 3 feet & ^ a considerable dist.
29 at ground 23 1/2 N & further down the hill the
30 9 13 4/12 %v map at Bot of n.p.}%
31 There also 4 other good sized
32 chestnuts on this hill side, with the
33 last 3
34 Of these 9 trees av. about 15 1/4 feet in circ{.}

¹⁰⁷line connects number to corresponding comment for numbers "3d", "4th", "5th", "6th" and "8"

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33

The 3d tree had a limb 4 or 5 feet from the ground--which extended horizontally for a rod toward the south--declining a little toward the earth--& this was 9 feet in circumference about 18 inches from the {base}--

The 7th had a large limb broken off at 1 foot {above} the ground on the side--whose stump prevented measuring at the ordinary height.

As I remember, the 8th was the finest tree.

These 9 (or 13) trees are evidently the relics of one chestnut wood--of which a part remains & makes the N. W. part of Inches wood--& the trees are all within about 1/4 of a side SE & NW the first 2 being by themselves at the SE end.¹⁰⁸

The chestnut's remarkable for branching low--occasionally so low that you cannot pass under the lower limb. In several instances a large limb had fallen out on one side.

{drawing} Commonly, you see great rugged strips of bark--like straps or {or} iron clamps--made to bind the tree together, 3 or 4 inches wide & as many feet long running more or less diagonally across the trunk --~~whil~~ & suggesting a very twisted grain--while the {drawing}¹⁰⁹ grain of the {recent} bark

¹⁰⁸"end" poss crossed out in pencil

¹⁰⁹drawing of map in bottom left corner in pencil

1 beneath them may be perpendicular-- Perhaps
2 this may be owing to old portions of the bark {which}
3 still adhere being {wrenched} {aside} by the unequal
4 growth of the wood. I think that all these
5 old trunks show this

6 Frank Brown teall me of a chestnut in
7 his neighborhood 19 feet & 8(?) inch in circ.
8 at 3 feet.

9 White oaks within a wood commonly at Wetherby's
10 & bloods wood--have lost the outside rough
11 & rugged bark near the base--like a jacket
12 or vest cast off--revealing that {peculiar}
13 smooth tawny white inner garment or
14 shirt-- Apparantly out-side trees do
15 not lose this outer bark--but it becomes
16 far more rugged & dark exposed to the light
17 & air--forming a strong coat of mail
18 such as they need.

19 Most of the White O's in Inches wood
20 are of a slight ashy¹¹⁰ tinge & have a rather
21 loose scaly bark--but the larger losing
22 this below--become tawny white

23 Prob. the moisture & shade {of} a wood softens
24 the bark--& causes it to scale off--

25 Having returned in to Inches wood not far
26 west of the meadow (which is west of the Brook)
27 {am} the angle made by the open land--

28 A black o stump recently cut about 1 foot
29 high & 21 inches in diam. had only 106 rings

¹¹⁰"ashy" poss written over "ti" of tinge

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31

A white o, only 9 inches in diam nearby
had 80 rings I suspect that the smaller
white os are much older comparatively
(with the large) than their size would indicate--
as well as sounder & harder wood.

A white o. at 3 feet 6 1/2 in circ.

A black o had been recently cut into at
the west base of {Finger} hill--& I counted
about 85 rings in the outside 3 inches--
The tree (wood only) was some 23 inches in
diam.

Looking at this wood from the Boxboro hill
the white pines appeared to be confined chiefly
to the higher land--forming a ridge from N to
S. Young white pines here very generally
come in (a great many being 20 feet high or
~~all over this~~
more) though in some places much more
abundantly that in others all over this
oak wood--though not high enough to
be seen at a distance or from hills--(except
the first named larger trees)--but though
there are very many large p. pines
in this wood esp. on the hills or moraines--
--young p. pines are scarcely to be seen--
-- I saw some only in a dell on the S
side the turnpike. If these oaks were
cut off with care there would very
soon be a dense white pine wood
there-- The white pines are not now dense-

1 ly planted, except in some more open places--
2 but come up {straglingly} every 2 or 3 rods--
3 The natural succession is rapidly going on--
4 {here} & as fast as an oak falls its
5 place is supplied by a pine or 2. I have no
6 doubt--that if entirely let along--this
7 which is now an oak wood, would have
8 become a white pine wood.

9 Measured on the {prop} the old woodland
10 is fully 1 1/2 inches long from N to S--
11 (1 mile being N the turnpike) & will average
12 1/2 mile from E to W. Its extreme width--measuring
13 {~~on the br~~} due E & W
14 ^is from Guggins brook on the turnpike to the
15 1st church-- (It runs considerably further SE
16 however, onto the high hill) There is
17 a considerable tract on the S wall road
18 S the turnpike covered with 2d growth--
19 some
20 There is there fore ^ 400 acres of this
21 Old wood.

22 There is a very little beech & hemlock--
23 & yellow birch in this wood. Many large
24 black birches at the N. W. end.

25 Chestnuts at the NW & SE ends
26 The bark of the oaks is very frequently
27 gnawed near the base by a squirrel or
28 other animal.

29 Guggins Brook ~~is a tributary of H~~ unites
30 with Heather meadow Brook & then with

1
 2 Fort Pond Brook just this side of West
 3 Acton--& thus the water of this old oak
 4 wood comes into the Assabet & flows by
 5 our N. Bridge-- The seeds of {whatever} trees
 6 water¹¹¹ will transport--provided they grow
 7 there may thus be planted along our
 8 river.

9 I crossed the brook in the midst of the wood
 10 where {they} was no path--but 4 or 5 large
 11 stones had evidently been placed by man
 12 at convenient intervals for stepping stones--
 13 & possibly this was an old Indian trail.

14 You occasionally see a massive old
 15 oak--prostrate & decaying rapidly sinking
 16 into the earth--& its place is evidently
 17 supplied by a pine rather than an oak--

18 There is now remarkably little
 19 life to be seen there-- In my two walks
 20 I saw only one squirrel--& a chickadee--
 21 Not a hawk or a jay-- Yet at the
 22 base of very many oaks were acorn{s} shells
 23 {left by} the squirrels-- In a perfectly round¹¹²
 24 dead oak 5 feet from the ground were 3 good
 25 white o. acorns placed

26 In the midst of the wood, west of the brook
 27 is a natural meadow--i.e. in a natural
 28 state a narrow strip without trees--
 29 Yet not very wet-- Evidently swamp white

¹¹¹written over text

¹¹²poss "sound"

1
 2 this is a quite dense wood-- That very solid white
 3 o. stump recently sawed in this wood--was evidently
 4 a seedling¹¹³ the growth was so extremely slow at
 5 first. If I found the case to be the same with
 6 the other oaks here--I should feel sure that
 7 there were all seedlings & therefore had been pre-
 8 ceded by pines or at least some dense evergreens
 9 or possibly birches. When I find a dense oak
 10 wood ~~It~~ whether sprouts or seedlings--I affirm--
 11 that evergreens once stood--& if man does
 12 not prevent will grow again-- This I must be-
 13 lieve until I find a dense oak wood planted
 14 under white or in open land.

15 Minot Pratt's elm is 16 1/4 ~~inch~~ feet circ.
 16 at 3 feet--

17 These tawny--white oaks are thus by their
 18 color & character--the lions among trees--
 19 or rather not to compare them with a
 20 foreign animal they are the cougars
 21 or panthers--(the American Lions) among
 22 the trees--for nearly such is that of the
 23 cougar which walks beneath & amid
 24 or springs upon them-- There is plainly
 25 this harmony between the color of our chief
 26 wild beast of the cat kind & our chief tree.

27 How they do things in West Acton.
 28 As we were walking thro' W Acton the other
 29 Pm a few rods only West of the center on
 30 the main road the {harvard} turnpike--we

¹¹³"ing" inserted

1 we saw a rock larger than a man could
2 lift, lying in the road, exactly in the {wheel}
3 track, & were puzzled to tell how it came
4 there--but supposed it had slipped off a
5 drag--yet we noticed that it was peculiarly
6 black-- Returning the same way in the
7 twilight, when we had got within 4 or 5 rods
8 of this very spot--looking up we saw a
9 man in the field 3 or 4 rods on one side
10 of that spot running off as fast as he
11 could. By the time he had got out of
12 sight over the hill it occurred to us that
13 he was {blowing} rocks & had just touched one
14 off--so at the 11th hour we turned about &
15 ran the other way & when we had gone a
16 few rods off went 2 blasts--but fortunately
17 none of the rocks struck us. Some time after
18 we had passed, we saw the men returning--
19 They looked out for themselves--but for
20 nobody else-- This is the way they do
21 things in west Acton. We now under-
22 stood that the big stone was blackened by
23 powder--

24 Silas Hosmer tells me how Moore
25 & Hosmer sold the Heywood Lot bet the
26 RR. & Fair Haven-- They lotted it off in
27 this wise¹¹⁴ {drawing} ie in
28 triangles--& carrying plenty of liquor they
29 first treated all round--& then pro-

¹¹⁴T prob. corrected letter to "w" for "wise"

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31

ceeded to sell at auction--but the purchasers--excited
with {liquor} were not aware when the stakes were
pointed out that the lots were not as broad
in the rear as in front--& the wood standing cost
then as much as it should have done delivered at
the door.

I frequently see the heads of {teasel}, called
fullers thistle, floating on our river--having
come from factories above--& thus the factories
which use it may distribute its seeds by means
of the streams which turn their machinery--from
one to another. The one who first cultivated
the teasel extensively in this town is said to have
obtained the seed when it ~~it~~ was not to be--
purchased the {culture} being monopolized--
by sweeping a wagon which he had loaned to a
teasel raiser.

The growth of very old trees--as appears by calculating
the bark of wood formed{,--}is feeble at last than
when in middle age--or say in p. p. at 160
than at 40 or 50--esp. when you consider
the increased no. of leaves & this together with
the fact that old stumps send up no shoots--shows
that trees are not indefinitely long lived.

I have a section of a chestnut sprout (
& not at all a rank one--) which has

	6--rings in the 1st inch--	
or	4-- " " 5/8 inch	but a section
of a chestnut		
seedling has	10 " " 5/8 "	

1 A section of a white o sprout (far from rank)
 2 has 4 rings in 1st 5/8 inch
 3 of a seedling do. 16 or 17 " " "
 4 " " " 8-- " " "
 5 of a very slow {grove of oak} 6-- " " "
 6 or in the white O's the prop. is as 5 to 12
 7 The 1st seedling O. has the rough & tawny light
 8 brown bark of an old tree--while the 1st sprout--is quite
 9 smooth barked.

10 A seedling white birch has 10 rings in 1st 7/8 inch
 11 a sprout " " " 5 " " "

12 the 1st has the white bark of an old tree--
 13 the 2d a smooth & reddish bark--

14 When a stump is sound to the pitch I can
 15 commonly {tell} whether it was a seedling or
 16 a sprout by the rapidity of the growth at first
 17 A seedling it is true may have died down many
 18 times {till} it is 15 or 20 years old--& so
 19 at last send up a more vigorous shoot then
 20 at first--but generally the difference
 21 is very marked.

22 Nov. 19th--60

23 Pm To{--}Mt Misery

24 Saw off a hickory stump which is scarcely
 25 6 1/2 inches in diameter & has {nearly} 100 rings
 26 (It is the one of Nov 13th & then called about
 27 115 (??) counting it now in the evening I make 92)
 28 It is surprising how quickly this wood decays
 29 This tree was cut last winter--& then
 30 evidently was perfectly sound--as ap-

1 He tells me of a small oak
2 wood of old trees called Shore's 1/2
3 mile E of Wayland--behind the graveyard

4 Nov. 20--60

5 Pm to RWE's Hill.

6 I see a p. pine several years old on
7 the west slope of the RR embankment--
8 60 rods by pacing from the nearest p. p.
9 which was in Trillium wood--. I have
10 seen several such. This tree would soon
11 sow itself in our yards if they were ne-
12 glected.

13 In the Moore & Hosmer Lot which I sur-
14 veyed in 49-50 beyond Heywood meadow
15 white 10 inch diam.
16 an ^ oak stump ^ with 70 rings (cut in winter of
17 49-50) evidently a sprout {that} the old
18 stump appears to have been entirely overgrown--
19 & so concealed.

20 I see on the ~~northerly~~ SW or RR side
21 near top of Emersons hill a great many
22 oak stumps (which were sprouts) with the
23 older stump still very plain--

24 One (prob. black o.) with 35 rings cut some 2 years=37

25 2d " " " " " 37

26 3d " " " " " 37

27 (This last {~~a-size~~} old stump being small & almost overgrown
28 between the stumps of the sprouts--seen a sliver
29 of it in a hole between them)

30 Also lower downhill toward RR. Old chestnut

1 RWE's hill-side{--}toward the pond.

2 I see a little p. p. which {bore} a cone at
3 22 inches from the ground when it was only 7 or 8
4 years old. It is now a dozen years old &
5 has borne 2 more--since--& scattered the seed--

6 Pm to F. H. Hill--

7 On what was Stows Lot--SW the
8 Boling spring--adjacent to Wheelers field--
9 I count the rings of 4 oak stumps which
10 are from 18 to 22 inches in diameter-- They
11 are all about 120{.} & the oaks
12 evidently
13 are ^ all from the seed-- This was both
14 a pine & oak wood--& I suspect that
15 about 120 years pines were cut or burned
16 or blown down or decayed there--& then
17 oaks succeeded-- These stumps are
18 now in the very best condition for counting,
19 having been cut 9 or 10 years ago.
20 (one is 23 inch in diam.)
21 But not so with the p. p. stumps ^ cut
22 about a year later on what was R. Brown's
23 higher up. Their sap & more is covered with
24 red
25 green &{^} cockspur lichens so thickly you
26 cannot see the rings.
27 {last}
28 On this--(now open Wheeler Lot) are not only
29 these old p. p. stumps (a few) but the stumps
30 of oak sprouts 44 years old with the older
31 stumps by their side or half overgrown
32 quite
33 yet ~~very~~ plain--which {last} there were
34 cut 44 + 9 = 53 years ago--no sprouts from
35 them

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31

In early times prob. less wood was cut at once--commonly only the winters wood for the owner's use. This Brown lot was variously treated apparently--

See young beeches near the upper edge of Stows about mid way on Wheeler--near where some stones have been hauled into {stows} from Wheeler's land.

Another finger cold eve--which I improve in pulling my turnips--the usual amusement of such weather--before they shall be frozen in-- It is worth the while to see how green & lusty they are yet--still adding to their stock of nutriment for another year--& between the green & also withering leaves it {does} me good to see their great crimson round or scalloped tops sometimes quite above ground--they are so bold-- They remind you of rosy cheeks in cool weather--& indeed there is a relationship. All kinds of harvesting even pulling turnips when the first cold weather numbs your fingers--is interesting --if you have been the sower--& have not sown too many.

Yet a section today of a white cedar RR. sleeper which I am told came from the eastward & was brought up from Charlestown 1st count gives 254 rings 2d on opposite side where the center is less plain 246 rings--average 250 Its diameter is 16 1/4 inches

1	65)	1000	(15.38	
2		65	(3.84	
3		350		7.68	Or nearly 31 rings to an inch.
4		325		30.72	
5		<u> </u>			This is the oldest as well as
6		250			
7		195			slowest growing trees that I have
8		<u> </u>			
9		550			counted the rings of-- I see
10		520			

11 other sleepers nearly as old-- Some smaller--
12 ~~had~~ or say 10 1/2 inch in diameter had 125 rings
13 in the first 3 inches--& then grew much
14 faster--as if they were at first part of a
15 very dense thicket & grew very slowly--but
16 afterward prevailing over the rest grew
17 faster--

18 This sleeper had of course been cut a
19 year at least-- 1860 It may not
20 have {Z} been the bent end of the
21 log--or at any rate it must have been
22 several years old before it reached the height
23 at which it was cut--so that it must
24 have begun to exist before the settlement
25 of Jamestown-- It was a flourishing young
26 cedar of at least some 15 summers
27 when the Pilgrims came over--

31 Thus the cars on our RR--& all their
32 passengers--roll over the trunks of trees
33 sleeping beneath them--which were planted
34 years before the first white man
35 settled in New England.

36 Nov. 22d 60

37 Pm to N. {W} part of Sudbury--

38 // The Linaria canadensis is {stild} freshly

1
2 blooming-- It is the freshest flower I notice
3 now.

4 Considerable ice--lasting all day //
5 on the river--meadows & cold pools.

6 I measure the stump of that white p. which
7 I used to see on the Marlboro road. It is 30 inches
8 in diameter & has 85 rings.

9 There are 2 small clumps of laurel close to //
10 the left side this road by the woods just this
11 side the Sudbury line--going to Maynard's.

12 Here is a dense oak wood-- I see many
13 little white pines sprung up along its edge
14 in the road--but scarcely one within the
15 wood. They too want light & air, though not
16 so much as the p. pine.

17 All this sound white o. acorns that I
18 see ~~this~~ now have sprouted & {many} have
19 sent a root down into the earth-- This is often
20 4 inches long{.}--but I see no black--nor
21 scarlet nor red o. acorns sprouted--though
22 I find sound ones. The White ones evidently
23 very much more sensitive & tender than they.¹¹⁹

24 This is a very beautiful November day
25 --a cool but clear crystalline air--
26 through which even the white pines with
27 their silvery sheen are an affecting sight.
28 It is a day to behold & to ramble over
29 the hard (stiffening) & withered surface
30 of the tawny earth-- Every plants down

¹¹⁹poss "they--"

1 glitters with a silvery light along the
2 Marlboro road--the sweet fern{--}the
3 lespedeza--& bare blue-berry twigs--to
4 say nothing of the weather-worn tufts of
5 A thousand bare twigs gleam like cobwebs in the sun.
6 andropogon scoparius.^ I rejoice in the
7 bare blank--hard & barren looking surface
8 of the tawny pastures--the firm outline
9 of its hills--so convenient to walk over{--}
10 & the air so bracing & wholesome
11 Though you are finger cold toward night
12 --& you cast a stone on to your first ice--
13 & see the unmelted crystals under every
14 bank-- It is glorious November¹²⁰ weather--
15 & only November fruits are out-- On some
16 hickories you see a thousand black nuts
17 against the sky--
18 There is quite a white cedar swamp
19 behind the old tavern SE of Maynard's--
20 you walk fast & {far} & every apple left
21 out--is grateful to your invigorated taste--
22 You enjoy not only the bracing coolness--
23 but all the heat & sunlight that there
24 is--reflected back to you--from the earth--
25 The sandy road itself lit by the november
26 sun is beautiful-- Shrub oaks--
27 & Young oaks generally--& hazel limbs
28 & the hardy shrubs--now more or less
29 bare, are your companions--as if it were
30 an iron age--yet in simplicity {&} innocence
31 & strength a golden one--

¹²⁰poss "november"

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31

(Day before yesterday the rustling of the withered oak leaves in the wind reminded me of the similar sound produced by snow falling on them)

It is glorious to consider how independant man is of all enervating luxuries--& the poorer he is in respect to them the richer he is-- Summer is gone with all its infinite wealth--& still nature is genial to man-- though he no longer bathers in the stream or reclines ~~under~~ ^{on} the bank--or plucks berries on the hills--still he {beholds the} same inaccessible beauty around him.

What though he has no juice of the grape stored up for him in cellars--the air itself is wine of an older vintage--& far more sanely {exhilirating}--than any cellar affords-- It is ever some gouty senior--& not a blithe child that drinks--or cares for-- that so famous wine.

Though so many phenomena which we lately admired have now vanished--others are more remarkable & interesting than before-- The smokes from distant chimneys--not only greater because more fire is required--but more distinct in the cooler atmosphere are a very pleasing sight-- & conduct our thoughts quickly to the roof & hearth & family beneath--revealing the homes of men--

Maynard's yard & frontage--& all his barns & fences--are singularly {neat} &

1 substantial--& the high-road is in effect
2 converted into a private way thro' his grounds
3 --It suggests unspeakable peace & happi-
4 ness-- Yet, strange to tell, I noticed that
5 he had a tiger instead of a cock for a
6 vane on his barn--& he himself looked
7 overworked. He had allowed the surviving
8 forest trees to grow into ancestral trees about
9 his premises--& so attach themselves to
10 him as if he had planted them. The
11 dusty highway was so subdued--that it
12 seemed as if it were lost there-- He had
13 all but stretched a bar across it. Each
14 traveller must have felt some misgivings
15 as if he were trespassing.

16 However the farmer's life--expresses only such
17 content as an ox in his yard chewing
18 the cud.

19 Wat, though your hands are numb¹²¹ with
20 cold--your sense of enjoyment is not be-
21 numbed-- You cannot now find an
22 apple but it is sweet--to taste.

23 Simply to see to a distant horizon thro' a
24 clean air--the firm outline of a distant
25 hill--or a blue mt top through some
26 new vista--this is wealth enough for
27 one, {pm.}

28 We journeyed into the foreign land of
29 Sudbury--to see how the Sudbury men
30 --the Hosmer's & the Puffers--& the
31 Brighams--live-- We traversed their pastures
32 & their woodlots & were home again at night.

¹²¹stray mark after "numb"

1	¹²²							
2		3.1416	3.1416	3.1416	3.1416	3.1416		
3		4	9	16	25	36		
4								
5		<u>12.5664</u>	<u>28.2744</u>	<u>18 8426</u>	<u>15 7080</u>	<u>18 8496</u>		
6		-{1.3744}	345576	310416	62 832	94 248		
7		9.4248						
8				<u>50.2556</u>	<u>78.5400</u>	<u>113.0976</u>		
9								
10		3.1416	3.1416	3.1416	3.1416 00		{.}11	
11		49	.64	81	121		{70649}	
12							{ }	
13		<u>28 2744</u>	<u>12 5664</u>	<u>3 1416</u>	<u>3 1416</u>			
14		125 664	188 496	251 1328	62 832		7{ }586	
15					31 416			
16		<u>153.9384</u>	<u>201.0624</u>	<u>254.4696</u>				
17					<u>380.1336</u>			
18								
19	1st 10 yrs ¹²³	2	3	4	5	6	7	8
20	occupied-		1/12 of 2d & all of 3d					
21	1st 2 inch= {8}/12 {of} 2d		7854	all 4+ 3/12 of 5				
22	3.1416	10/12 {of} inch	15.7080	21.9912	8/12 of 5 + 8/12 of 6			
23	7854			6.0686	18.8496	5/8 of 6		
24			16.4934		4.3197		1/4 of 6 + {3/13} of 7	
25	<u>3 9270</u>			<u>28.0598</u>			5/12 of 7	
26					<u>23.1693</u>			
27	9 ¹²⁴	10	11	12	13	14	{15}	
28	5/13 of 7	2/5 of 8th	2/5 of 8	1/5 of 8+ 5/26 of 9th	5/13 of 9	5/13 of 9	1/26 of 9-1/5 of 10th	
29								
30	1st	2d	3	4	5	6	7	8
31	10 years							
32	¹²⁵ 3.9270	7.8540	16.4934	28.0598	23.1693	21.5985	18.0642	15.7060
33	9	10	11	12	13	14	15	
34	{15.7080	18 8496	18.1496	19.6953	20.5410	20.5410	13.2923}	
35								
36	¹²⁶ {	} 2	3	4	5	6	7	8
37	{4th} tree	2 inch & 1/2 3d						rest of 9th+ 1/19+ of 10
38		9.4248	1/2 3d	all 4th + 1/3 5				{20.9912}
39		7.8540	7.8540	2/3 5th + all 6th				{12.}
40		17.2788	1.9912	18.8496	7th & 1/20 of 8th			{25.3312}
41			9.4248	34.5576	40.8408	rest of 8th		{37.}
42					2.3562		9th 1/4{--}	{32.9912}
43			<u>39.2700</u>	<u>53.4072</u>			53.4{ }72	
44					43.1970		12.	
45								
46	9	10	11	12	13	14	15	{16}
47	10/19 of 10	2/19 of 10 + 8/33 of 11			5/33 of 11 + 1/12 of 12			
48	34.7590	6.2832	10/33 of 11		9.9960	2/6 of 12		
49		15.9936		10/33 of 11	6.0214		1/6 of 12	
50								1/6 of 12
51		<u>22.2768</u>			<u>16.0174</u>			
52								
53	5th tree	2	3	4	5	6	7	
54	3.1416	17.2788	39.2100	53.4072	43.1970	44.7678	{41.4072}	
55	8	9	10	11	12	13		
56	37.3313	31.4160	22.2768	19.9920	19.9920	16.01744		
57	32.9912							
58		14	{ }	{ }				
59		12.0428	12.{ }	{ }				

¹²²entire page in pencil

¹²³vertical lines separate columns, entries are staggered to fit on line

¹²⁴vertical lines separate columns, all on one line, entry directly under number heading

¹²⁵T poss writes "2d tree" in pencil vertically in left margin

¹²⁶vertical lines separate columns, entries are staggered to fit on line

1	¹²⁷							
2	{6th} tree ¹²⁸	2	3	4	5	6	7	
3	2/3 of 1	1/3 of 1 + 5/13 of 2			10/14 of 4			
4		1.0472	8/13 of 2 + 2/11 of 3			3/14 of 4 + 7/18 of 5		
5		3.6249	5.7998	9/11 of 3 + 4/14 of 4			10/18 of 5 + {—}	
6			2.8560	12.8520		4.7124		
7				1.5708		10.9956		
8	2.0944 ¹²⁹	4.6721	8.6558	14.4228	15.7080	15.7080	15.7080	
9	<hr/>							
10	8	9	10	11	12	13	14	15
11	1/18 of 5 + 9/19 of 6			10/23 of 7			4/21 of 8 + 6/21 of 9	
12	1.5708	10/19 of 6			3/23 of 7 + 7/21 of 8		8.9760	10/21 of 9
13	16.3694		10/23 of 7		5.3271	10/21 of 8	15.2592	
14					15.7080			
15	17.9402	18.1882	17.7569	17.7569	21.0351	22.4401	24.2352	25.432
16	<hr/>							
17	16	17	7th tree	2	3	4		
18	5/21 of 9 + 5/28 of 10		10/13 of 1	3/13 of 1 + 7/11 of 2				
19	12.7160	10/28 of 10		.7249	4/11 of 2 + 6/11 of 3			
20	10.6590			5.9976	3.4272	5/11 of 3 + 5/11 of 4		
21	23.3750	21.318			8.568	7.140		
22						9.996		
23			2.4166	6.7225	11.9952	17.136		
24	<hr/>							
25	5	6	7	8	9	10	11	
26	6/11 of 4 + 4 22 of 5		3/22 of 5 + 2/29 of 6			7/29 of 6 + 3/42 of 7		
27	11.9952	10/22 of 5	10.2816	10/29 of 6		8.34148	10/42 of 7	
28	5.1408		2.3833		10/29 of 6	2.9172		
29	17.1360	12.852	12.6649	11.9164	11.9164	11.25868	9.724	
30	<hr/>							
31					/			
32	12	13	14	15	16	8th tree	2	
33	10/42 of 7		9/42 of 7 + 1/40 of 8			10/16 of 1	6/16 of 1 + 4/13 of 2	
34		10/42 of 7	8.7516	10/40 of 8	10/40 of 8		1.1781	
35			1 1781				2.8999	
36	9.724	9.724	9.9297	11.781	11.781	1.9635	4.0670	
37	<hr/>							
38	3	4	5	6	7	{8}	9	
39	9/13 of 2 + 1/12 of 3		1/12 of 3 + 9/13 of 4				10/14 of 7	
40	5.5298	10/12 of 3	1.309	4/13 of 4 + 6/11 of 5				
41	1.304		15.2246	6.7665	5/11 of 5 + 5/14 of 6			
42				15.4224	12.8520	9/14 of 6 + 1/14 of 7		
43					12.3420	22.2156		
44						2.9172		
45	7.8338	13.090	16.5336	22.1889	25.1940	25.2328	29.172	
46	<hr/>							
47	10	11	12	13	14	15	{—}	
48	{2}/14 of 7	+7/19 of 8	2/19 of 8 + 8/28 of 9					
49	8.7515	10/19 of 8	4.9394	10/28 of 9	10/28 of 9	1/4 of 10		
50	19.2877		15.2592					
51	28.0393	24.696	20.1986	19.074	19.074	14.9226		

¹²⁷entire page in pencil

¹²⁸throughout page, vertical lines separate columns

¹²⁹throughout page, totals at the end of columns are circled

1 {this page is faint pencil. waiting on photographs for transcription}

1 {Sketch of map, poss. of Concord area}

1	¹³⁰ Fruits	<u>November</u> { }	{fruit}
2	Wild apples	Oak leaves { } Nov 9 55--	{ }
3	{ }		
4	{ }	{ }	{ }
5			
6	{ }	Working ap Sep 25 55--Nov 1-55--6--7--9	{ }
7		{ }	{weather }
8	{ }	{ }	{Purple (Sep 23rd)}
9			
10	Barberries	{ }	{ }
11			
12	{ } pollen	{Nov. 6 v Nov}	{ }
13			
14	andromedas	{V Dec 31st along N. slope}	{Travelling & walking}
15		{November light 28--56}	
16	& bush berries--		{River}
17			
18	blueberries on <u>mts</u>	{withered oak leaves Dec. 1st 56 esp shrub o.}	{Leafing}
19		{Dec. 6--7--8--9--17--19--21--8}	
20	potatoe {path}	{ }	{Spring--}
21	cranberries	{Birds Dec 21--Oct 30th} {when?}	{Radical gossamer}
22	Asters in prime	{Dry leaves Dec 19--56--& <u>elsewhere</u> }	{Swim}
23			{cold}
24	fungi	{Oct 21--57--Oct 28--57}	{Ice}
25	golden rods	{Nov. 1--57--Perhaps Nov 2}	{Tracks}
26	{ }	{November light Nov 3--Nov 4--Dec 7--57}	{Birds}
27	{ } fall day	{Prime Nov 5 & <u>before</u> }	{clouds}
28	Bee { }	{Nov. 8}	{ }
29	<u>Milkweed down</u>	{Perhaps Nov. 14}	{Quadrupeds}
30	berries & nuts	{Nov 17 18--25}	{Fishes}
31	Goldenrod	{ leaf Nov 8--57}	{ }
32	{ }	{Dry leaves Nov 29--57}	{ }
33	{———} 56	{Color of fungi in swamp} ¹³¹	{ }
34	Bright day	{Sep 13--58}	{ }
35	{ }	{Buds June 25 & Feb 24--58}	{Swamp Oct 23 58}
36			{ }
37	{ }	{(some cress & shadbushes)}	{Friendship}
38		{withered in Ap. 6 58}	{Bees}
39	{ }	{Gossamer Sep 29 58}	{ }
40			{ }
41		{Buds Oct 25 58--Nov. 18 58}	
42		{Light from twigs Oct 25--58}	
43		{November Oct 25 58}	
44		{withered grass Oct 27 58}	
45		{ }	
46		{Bare twigs ^ Oct 29th 58--Nov 3--11th--12--15--17--18--Jan 10--59--23}	
47			{A Glaze Dec 5}
48	{Black flies	Nov. 1st below Almshouse	Dec. 13}
49	{No 27 July 10}	{Nov. 7th 58--}	{skating}
50		{ bower--Nov 7th 58}	
51		{Purple light Nov 8 & before}	{Cold}
52		{Nov 9--58--Pure Nov Nov 10--12--13--17--20--25}	
53		{Gossamer Nov. 11--15}	{Hoar Frost Jan 13 59}
54		{Frost-weed Nov 11--12}	
55		{Dry leaves Nov 14--20--25--Dec 11--58 {Jan 2 '59)}	
56		{Ev. ferns Nov 15--17--16--18}	{Old house}
57		{Lycopodium Nov. 15--16--17--25--6--30}	{Mar. 11--59}
58		{& evergreens}	{moist tawney earth in}
59		{bare of dry leaves may 6--59}	{spring of 59--v ap. 4}
60			{& sep 9}
61			{Real & Ideal Oct 3--}

¹³⁰entire page in pencil--Transcription very rough--waiting for photograph of page to correct

¹³¹following this is a chart drawing of T's showing several dates in minute hand

1 ¹³²
2 Temp. of Walden bottom in winter

3 {Crop B napus (of Aug 19 & Sep 20) is rough when young}
4 {& B. campestris in B. swamp}
5 {Wall-bugs on F. H were not seen}

6 {Button wood seed}
7 {(Plant them in o. wood--}
8 {v. if sound white o. acorns are left in spring under the}
9 {trees in open land.}
10 {What weeds planted in cemetary found}

11 {What ap. of Pyrus W. of Miles swamp--of July 30}