

Debris

Andrews Experimental Forest, May, 2006

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I. The Forest

Seed spore egg,
a curl of lichen or moss,
a feather, a fallen twig,
a pebble. Summer drought.
Water drips from a decaying log
laden with nitrogen.

Winter floods: boulders
crash down Lookout Creek.
A four hundred year fir falls,
blocks the channel. Gravel bars
shift stone by stone.
A single alder leaf turns in an eddy.

Roads wind up Lookout Mountain.
Locked gates, flags, tags,
and stakes mark research plots,
the gathering of information:
carbon dynamics
disturbance patterns
habitat structure
nutrient cycling
log decomposition
debris flow.

Only in the mind can there be
one red-backed vole, one owl, one Douglas fir.
Only in the mind can there be
fir without fungus, owl without fir,
fungus without vole.

Study the wind, listen to what it says
about the shape of the land,
the shape of a stone,
the shape of the needles that sieve it,
the open place in the canopy
where a tree fell in the last storm.

Study the taste of creek water in September
before the first winter rain,
the taste in May when the snow melts.

Study smell, study texture,
take the petals of a violet,
the leaves of miner's lettuce between the teeth.
Let the tongue explore,
the body learn the forest inside itself.
Study love and the way love tangles
with fear. Study desire and the light
that makes the coralroot glow.

Study the wind. Listen
to what it says about you.

Learn about time
from lichen and moss,
from the thick mats of mycorrhizal fungi
spreading underground,
from the Western red cedar,
roots gripping the shifting hillside
as the wedge of light
widens, travels up the trunk--
learn from a cedar splitting its own heart
with its own strength.

Heavy with age, forest silence
shimmers, might be measured
as particle instead of wave.
Here, moss and bark, fern and rotting wood
hold centuries of bird calls,
animals cries, human voices,
weaving them into the shhhh of wind,
the blursh blursh blursh of the creek,
the crash of a tree falling, a branch
snapping, a cone sprinkling seeds
on the forest floor.
Here, silence has weight and texture,
can be tasted and touched,
taken into the body like the gold drops
of sap dripping from a branch,
like the sweet of violet leaves.

Here, silence lets the heart question:
How does moss, dry
for a season, revive in rainwater?
An orchid sprout from a seed,
blossom without leaves or roots?
How does a wren shape its nest,
a kinglet know when to migrate,
a bear when to sleep?
How does a body learn to want
change--the slow evolution
of new life forms--and then accept
its own dying, say yes
to the single cell that mutates,
multiplies, metastasizes?

II. Cosymbionts

Geologist. Hydrologist. Botanist.
Saprophyte. Raptor. Arthropod.
A watershed broken into pieces
by specialists.

Like science, poetry is an art
of dissection--it is the tiniest part
the poet wants--fern spore, leaf pore,
bud scar, the veins of an insect wing
catching the sun, the barbs and rachis
of a swallow's feather in flight.

Like science, like poetry, love
for a place is an art of dissection.
The fingertip strokes the smooth pockets
of *Lobaria oregana*. The eye
sinks into the calypso orchid's silks.
And at dusk, the last note of a thrush
trembles in the ear.

Forest debris, from the French *debriser*:
to break into pieces--
a creek stone a curl of moss
a thread of lichen a spotted owl
a coralroot log jam earth flow
a cedar splitting in half
as the crack under its roots widens--
analysis of a circle
can begin anywhere:

with the fir fallen after a storm
and the slow decay of bark and heart--
habitat for fungi, nurse log for new saplings,
shelter for voles.

with the red-backed vole
gathering fir seeds, digging truffles,
leaving droppings rich in fungal spores.

with the fir seed sprouting, root hairs reaching
through rotting wood, meeting mycelium,
tapping the mycorrhizal mat.

with the fungal hypha wrapping the fir's roots,
exchanging water and nutrients
for carbohydrates.

Fallen log, red-backed vole,
truffles, mycorrhizae--
how else, except by breaking down,
can a researcher understand a biosystem?
How else, except by keeping whole
through breaking down can a forest grow?

III. Threads

Light gatherer, shade tolerant climax tree,
the Western hemlock spreads needles
flat to the canopy.
Underneath, a coralroot's orange stalk
draws light-manufactured sugars
from the hemlock, opens
to a spray of red and purple striped orchids.

* * *

Creek music: thunk thunk thunk
deeper than the heartbeat of stones,
a baseline thrums
under the splash and cymbal crash
of water splintered on rock.

* * *

Firs weave *now* into seed and cone,
root and hypha, needle and branch,
layer *then* thick as duff
on the forest floor.

* * *

Seamless, water opens, slides
over rock, closes again.
The flung drops scatter white,
catch sun, foam,
vanish downstream.

* * *

Moss hangs like mist, drops scrim
from maple and yew,
hemlock and fir, filters sun,
filters time. Silent and old
as the trees they grow on,
moss tapestries began
as single spores caught
in a sapling's leaf-scar.

* * *

Roots grow deep, not open
in light and air, but lapped, cramped, crowded,
jammed and crossed, rigid, ingrown;
arthritic fingers clutch earth, seek water, cradle stones.

* * *

Gravel bar: without the bead lily's hexagram
or the fir cone's logarithmic spiral--
without the sonnet's symmetry

or the haiku's clipped syllabics,
winter floods pack cobble in patterns.

* * *

Under the paper thin skin,
the yew's inner bark burns red--
black coals broken open, glowing.

* * *

Vine maple winds through the forest,
turns hands flat to the sun.
Light pools in the palm
the way water pools
in the lungwort's lobes.

IV. Forest Time

Water time. Soil time. Tree time.
One by one, cone scales open,
drop seed. Roots reach for water,
hair by hair, into the fallen log.

Mite time. Orchid time. Spore time.
Corm and fungal hypha meet,
exchange nutrients. A single flower
rises leafless from the duff.

Owl time. Bear time. Vole time.
Truffle spore and blackberry seed pack
fecal pellets, while one by one
the old firs fall to logging.

Moss time. Stone time. Creek time.
The wild crash of flood
in winter, the crack of log on stone,
the shifting of boulders;
the silk of water on mossy rock,
the slow circling of leaves
in summer--even in eddies,
creek time moves faster
than tree time.

Storm time. Wind time. Fire time.
The pungent sap of a splintered bole
glitters in sun, stings the nose.
The singed bark of an old growth fir
thickens as the furrows,
lined with black velvet, deepen.

Earth flow, debris slide, stream erosion.
Standing or fallen, a fir slows time. A creek
releases it. And a stone?
ground round by the knock
knock knock of water and rock,
scoured by sand, colonized
by lichen, worn by acid,
grain by grain, a stone unlocks time.

V. Drainage Basin, Lookout Creek

Shaped by water and fire,
light and time, the shifting of plates,
and the past and present of man,
the Blue River Experimental Forest
was established in 1948,
renamed in 1953 for Horace Justin Andrews,
Regional Forester.

What does it mean to name a place,
to name a body of water--a lake,
a river, the smallest ribbon
seeping from a mountain-side?
The official map offers a handful of names:
Cold Creek, Longer Creek, Snag Creek,
Mack Creek, Devils Creek--
a network braiding into Lookout Creek,
mingling with the Blue River
in the Blue River Reservoir,
stopped by a dam.
Elsewhere, the map designates
whole webs of creeks as research sites:
Watershed 1. Watershed 2. Watershed 3.
Studded with stakes, vessels, tubes,
towers, tools for measuring
air flow, water flow, nutrients, vegetation,
creeks tell researchers everything
but their names.

Dated, numbered, aluminum tags mark
a decomposing log or a spotted owl's nest tree.
When the sun shifts, the tags catch the light,
gleam for a moment, rare as the silver flowers
of the phantom orchid. Human ephemerals,
they record love for this forest,
love and hope: some one else will read
this log, this hillside, this creek,
in two hundred years.

* * *

Owl Crew Report:
Lower Browder
10:24 leave truck/canoe
11:00 begin
11:28 ♂ 4 note response
11:30 ♂ visual
 M1 ♂ ate
 M2 ♂ delivered 1998 nest tree
 M3 ♂ ate
12:30 depart

Four notes, rich, melodious--
a human voice calls down
a spotted owl. Silence. Then response--

four notes, pause, and four notes again.
Forest music.

Incongruous, the little white mouse
quivers on the branch,
nose twitching, running first one way
then the other, then still,
waiting. Claws extended,
the owl swoops, takes the mouse
in a silent velvety glide, a quick sweep of wings.
The owl crew watches,
then follows him--the Lower Browder male,
tagged when he was a fledgling,
now mate to the Lower Browder female
who has used this nest site since 1990.

* * *

Log Decomposition Site.
Over one hundred logs six meters long:
Douglas fir, Pacific silver fir, western hemlock,
western red cedar: weighed; sampled for density,
moisture content, nutrients;
tagged; placed; checked at intervals.
Days. Months. Years.
While moss blurs the saw's flat cuts
and ambrosia beetles bore through fermenting bark,
while hemlock seedlings take root
in rotting wood, data
is entered into a computer. Indifferent
to the hands that measure them,
the logs sleep, the air thick
with their silent dreaming, their patient
un-becoming. This is not a graveyard,
not a site of death or decay,
but a site for storing and unstoring and restoring,
releasing and composing:
log recomposition site.

* * *

In an old growth forest,
not even the earth is still:
stakes set four square
trace trapezoids twenty years later.

A science of debris:
a bit of bark, a scrap of lichen,
a dropped needle or cone,
a stone shifting on the gravel bar,
a shed snake skin, a wasp
depositing eggs near the wood borer's larva--
pages torn from a book--read by a research.

Each stake stumbled upon in the middle of the forest,
each aluminum tag and magenta flag,

each rope reaching up into the canopy
or pipe reaching down into the creek
tells the walker: Someone has measured
this flow, tested this soil, weighed this log,
tells the walker: someone loves this place.

VI. Clearcut

A wealth of brush:
vine maple, hazel, alder, willow,
broom, bracken, iris, daisy,
blackberry, and cascara grow wild.
Young firs rise like fountains,
the tips of their branches heavy
with new growth, while finches flicker
in the thickets. Hawks ride thermals,
their dark shadows fingering
the tips of the firs,
and dragonflies shimmer
on wings like silk threads.
Here, six years after the cut,
it is not the earth that is naked,
but the trees left standing at the edge,
trunks bare to the crown.
This first flush of new growth
pulses, hides soil scraped clean
of debris, leached, burned over,
fungal mats destroyed.
Later, when the new firs grow thick,
shade out the brush,
the silence of monoculture
will fall over this worked land.
But for now, this hillside sings.

VII. The Art of Science

Listen to the sounds of the forest,
the sounds of the land, the sounds
of a place loved and touched
by human hands. A boulder rolling down
a hillside, stone nudging stone in creek water,
the shudder of an earthquake.
Trill, whistle, hum, grunt,
growl, chatter, coo. Pods snapping
in summer heat, beetles
chewing rotting bark. Bear bells,
laughter, the grinding of gears
as a log truck winds down the mountain,
a whispered promise.
Geophony. Biophony. Anthrophony.
A forest symphony.

Let the words of science be brittle
as yew bark, sticky as monkeyflower
three-pronged as a fir cone--
let the words of science be honed by use,
shaped by lips and tongue,
rounded, smoothed, cut, faceted
as stones tumbled in creek water
in winter floods--feathery
as moss silked with rain,
papery as the lobes of lichen
fallen to the forest floor,
spongy as an old growth log
slowly leaching nitrogen into the soil--
let the words of science be things
and the imagination play with etymologies:
mycorrhiza: fungus root
cotyledon: *kotyle*: cup
plicata: pleated
let the tongue linger over *involucra*,
fascicle, *bract*, the teeth crunch on
clastic, *schistosity*, *calyx*.

Begin with love, a composite
of science, art, imagination,
and the pure world of the senses--
with the things the hand can touch:
the peeling papery bark of a yew,
the curve of a snail shell,
the beard lichen's wiry hair--
with color and taste and smell
and the call of a thrush at dusk,
the velvet glide of a spotted owl.

Begin with love and the questions
the heart asks: why stones
arrange themselves in lapped patterns
on a gravel bar. How old growth trees
resist the quickly mutating pathogens

that attack them. Where the orchid
lacking chlorophyll gets its sugars.
Let the body then the heart learn
the forest and remember:
Data collection, computer analysis,
digitalized imaging begin
with hand and eye, tongue, nose, and ear.

And while the pencil hovers
over the page or the hand grips
a water gauge, the scientist
has time to stroke the willow leaf's silk,
breathe in the lemon scent
of chanterelles, follow the arc
of a swallow's flight.
The artist, too, has time to taste and touch,
and then to study the moss spore's journey
from protonema to gametophyte, time
to trace root and hypha to fir
and fungus, count
the fir cone's three-pronged bracts.

VIII. Design

Any language can be broken
into pieces: brush stroke, half note,
phoneme, pi.

The language of the forest breaks
itself. Seed spore root needle leaf
thread of moss lobe of lichen
chips of bark insect wing egg shell
chrysalis feather bone scat--
each bit of debris a letter,
a word, part of a syntactic unit.

Creek water runs close to earth's bones.
Pebble and stone, riffle and pool,
eddy and fall: Each winter the gravel bar shifts,
and in spring, the eye
learns a new creek. To love
a watershed is to know:
next year, this branch, this flower,
this stone won't be *here*.

Even in abstract painting or music--
color shattered on canvas,
a line, a cube, an atonal scale--
the eye and ear find order
in the rhythm of brushstroke,
the rhyme of form, the length
of silence between one note
and the next.

And in the forest--fallen tree,
shred of lichen, broken limb,
stripped cone and pile of scales,
rotting leaf, shed snake skin,
scattered spore--in the forest,
the body weaves tapestries
of light and sound.

A forest can't choose, gives itself
to science or art the way it gives itself
to fire or flood: indifferent,
the inner core untouched, it sings
to itself. Dead wood is not dead.
Press your ear close.
Listen to the beetles chewing.

Coda

The poet asks: What is the smallest bit of matter?
and the scientist replies: A string.

String. Knot. Web. Watershed.

Only in the mind can there be
one word, one note, one brushstroke;
only in the mind can there be one orchid,
one owl, one vole, one fungus, one fir

Only in the mind can there be one forest.

compose decompose
pause
recompose