



2 Birdsong Ripens Berries, Wind Brings the Seeds

Plants reveal the hidden qualities of particular soils and the subtle properties of place and site. In airborne pollen, leaves, and winged seeds they give air visibility and demonstrate the mysteries of season and sequence.

Paul Shepard, *The Others: How Animals Made Us Human*, 1996

In the fall, we pack seeds, working on a long, well-oiled table made from the rootstock of a native California walnut tree, onto which was grafted English walnut. Milled and planed, the figure in the wood reflects that history, being rich and dark at the rootstock end and lighter and creamier at the grafted end. On this shining surface, the three of us measure out, with spoons, cups, scales, and fingers, seeds of California native plants. We package them and make them ready for shipping to our customers—backyard restoration gardeners, volunteers working in public parks, botanic gardens around the world, academic researchers—to make more ceanothus, toyon, baby blue eyes, coast live oak. To make more purple needlegrass, goldfields, gumplant, and pink flowering currant. More wildflowers, more bunchgrasses, more native trees and shrubs. We join the ants, birds, wind, water, and other agents of dispersal to increase the presence of native plant communities where once they might have flourished, or where they grow now in a diminished state.

The table sits in front of a picture window, against which are propped lists of the birds and insects that we watch as we work. Our view is framed by California hazel, and in the distance we can see blue blossom ceanothus. To sit under blue blossom in the spring is to be surrounded by the buzzing, droning, whirring, and humming of insects of all kinds, especially native bees.

Now in the fall we observe the results of the work of those springtime pollinators—blue blossom's rich provisioning of a myriad of small land birds, many just returned from exhausting migratory journeys and in need of optimal nourishment. For weeks, the dull black, papery, three-chambered seed capsules split open to release gray black seeds to the chair cushions, sidewalk, and leaf litter

below. From the cushions I brush the seed into stainless steel bowls, then clean, dry, and package them. Retrieving the seeds from the litter is a task left to the rufous-sided towhee, the California thrasher, and the gold-crowned sparrow. I sweep the seeds and leaves off the sidewalk and by the next day, it is covered again with the detritus from their seed-finding mission. Such gardening tasks lead me to muse on the plants and other creatures that have coevolved in this place.

When I moved here to the northcentral California coast twenty-seven years ago, I was disappointed by the lack of intact habitat in the immediate environs. In my semirural neighborhood of fishermen, ceramicists, and financial planners, there was little for a native-plant seed collector to gather. I roamed restlessly north, south, and east, where human impact was less apparent, collecting as I went, intent on re-smothering every inch of my one acre with my best guess of what was once here, floristically speaking. To some of my ideas, the land said yes, to others, no. The intensely showy dune and bluff plants I found at the Point Reyes Lighthouse to the north did well here for several years, but the soil proved too rich for most of them, the land too flat, the drainage not quick enough. They were overtaken by our plantings of coastal scrub and chaparral shrubs like coyote bush, toyon, coffeeberry, and the beautiful blue blossom, which have proved livable, friendly, and sheltering.

Today my one acre of restored and garden land is in constant play with the wildlands. We bring in seeds from nearby native populations, including threatened herbaceous species like the Point Reyes checkerbloom, a glossy-leaved ground cover with large pink flowers, or the native bee-friendly meadowfoam, staunchest of reseeder. We plant them where a solid phalanx of coastal chaparral and scrub plants will shield them from incursions by neighboring weed fields. We then harvest the seeds from these grow-outs and offer them to our customers. As a glorious by-product of all this, I live surrounded by an intensified, continually reimagined version of what the land might have been like once, when managed by California's indigenous peoples.

SEEDS AS SEASONAL MARKERS

Next to the walnut table is a bulletin board to which are affixed lists of seeds that need to be collected each season. The lists are compiled from what we see ripening in the native plant garden, from memory, from data recorded in loose-leaf notebooks that date back twenty-seven years, and from notes scribbled on

my collecting envelopes. On a shelf against the opposite wall, rows of these large brown envelopes are arranged alphabetically by the botanical name of the seed they contain. Written on each well-worn envelope are collection dates, locations, and also the amount of seed to be put in each packet, the quantity based on germination rates and the time involved in collection.

For some species, we return to the same spot every year, for some, every other year or every five. We are careful not to be too efficient, taking in most cases only a tiny percentage of the crop, 10 percent or less. Some collections involve permit-required wildland hikes, some are on private land where owners have given their consent; others take place here in my own backyard, or in the yards of my employees, and in the vacant lots, weed patches, and roadsides between us.

Seed collection is woven into the fabric of all of our lives, so that walking the dog, visiting a neighbor, driving on errands, the annual trip to the dentist at the same time every year become occasions for small gatherings. Between a friend's house and mine, California figwort (*Scrophularia californica*) sends long, lanky seed stalks up above blackberry brambles. In August, a visit with her is an opportunity to gently bend these generous seed producers over, so that a fine rain of black seed pours into a container. We've all become devoted gatherers and growers, never going anywhere without our brown envelopes. I watched our office manager become addicted to the process; then our graphic designer succumbed. Seeds have a power; once you feel it, they will not let you go.

Many of these sturdy, tan envelopes have been reused eight or ten times. Withstanding many years' hard use, thick and enduring, they remind me of *parfleches*, the rawhide carrying cases of the Plains tribes. A variety of stains betray which ones were used for harvesting berries: elderberries, thimbleberries, hairy honeysuckle, creamy white snowberries, glistening black coffeeberries, rich red toyon berries, deep blue black salal berries, manzanita berries, huckleberries, and salmonberries. Though the records of nine or ten different collections can be confusing and my employees understandably deplore the practice, I plead for the envelopes' reuse. Messy scribbles record thoughts I had while out collecting, personal notations of both my state of mind and the state of the plants.

Some envelopes contain fevered lists of species growing nearby. These little impromptu floras reflect a need to memorialize an unexpected abundance, or a miraculously intact assemblage of plant species. The lists somehow don't capture it, though, the rapture and relief at the survivals, the sense of their fragility, particularly under the onslaught of invasive plants, and even more frequently, surprise at the discovery in unlikely places of species whose habits and prefer-

ences I had thought I understood. My brief notes are shorthand for the ever-resurfacing recognition that I will never run out of surprises from the plant world.

One battered envelope records a flora full of exclamation marks. A tip from a friend sent me to a certain rocky, thin-soiled, dry road cut to collect seed of western columbine (*Aquilegia formosa*), which I am accustomed to see growing in relatively rich, mixed-evergreen woodlands. Here it grew in plenteous masses, more abundantly than I had ever seen in one place before. Next to it, according to my envelope, grew a succulent plant called sea bluff lettuce (*Dudleya farinosa*), whose gray green fleshy leaves and bright orange flower stalks I usually find near crumbling coastal cliffs. I note my speculation on these unlikely neighbors: “An unexpected vein of water coming through the rock for the columbine, sharp drainage for the succulent dudleya.”

Another envelope tells a tale of collection anxiety, where first I believe I have missed the harvest and then find that I have not. I was looking for the seed of vanilla grass, *Hierochloa occidentale*, which grows ten miles north of here. At the top of the wooded hill, the seed had already dropped to the forest floor, but grasses growing in openings midway down the hill contained ample ripe seed. Although I know this pattern, every year I forget, and, until I consult the notes on the envelope, begin to imagine the disappointed customer who will not be able to grow this unassuming plant with the intoxicating fragrance in its leaves and flowers. The envelope also tells me that two collections were made one month apart and that I particularly enjoyed the second collection date, when not only were more ripe vanilla grass seeds available, but also—an added inducement—evergreen huckleberries (*Vaccinium ovatum*) were ripening in the same Bishop pine woodland.

In his last manuscript, *Wild Fruits*, Henry David Thoreau described the ripening and biology of all the fruits he encountered in his extensive rambles in New England, but to the huckleberry he gave his greatest endorsement, asking: “Are they not the principal wild fruit?” Both the West Coast and the East Coast are rich in members of the genus *Vaccinium*, so Californians, Oregonians, and Washingtonians can join in Thoreau’s enthusiasm. Since I live on a sandy marine terrace where these huckleberries usually don’t grow, or grow sparsely, we must travel a bit to harvest these tiny berries, at once sweet and tart, so flavorful that the idea of missing them produces an uncomfortable sense of loss, of missed opportunity, of being wasteful of our prerogatives and privileges.

This feeling arises from deep, half-conscious roots, different from though probably connected to the fear of starvation. There’s a sense of the possibly neg-

ative consequences of being an ungrateful guest at the feast. Many native people advise that plants respond to respectful, skillful harvesting and disappear without it. Cache Creek Pomo elder Mabel McKay said, “When people don’t use the plants they get scarce. You must use them so they will come up again. All plants are like that. If they’re not gathered from, or talked to and cared about, they’ll die.” Ethnobiologist M. Kat Anderson adds, “Today California Indians often refer to these practices as “caring about” the plant or animal . . . caring for plants and animals in the California Indian sense meant establishing a deeply experiential and reciprocal relationship with them.”

Many thoughts are in my mind; the fog coming and going on the ridge where I gather, the welcome sight of laden bushes, the immediate savor of eating the berries, their weight in the pail, the tiny seeds when cleaned and dried for packaging, and huckleberry raisins in winter breakfasts of oatmeal. I plan a huckleberry-gathering day, aiming for midharvest. Too early in the season and we spend precious time removing the green berries, too late and pickings will be slim, or the berries will have vanished for another whole year. Examining the vanilla grass growing in my garden, I see that about half of the seeds have fallen, so up north, where seeds usually ripen later, the seed stalks will still be full. According to the notes on my seed envelope, the huckleberry bushes will probably still be loaded also. In this way my backyard restoration garden functions as a calendar, informing when it is time to go out to wild land, which seed envelopes to bring, and when to clean the berry buckets.

PHENOLOGY

Using one ripening to predict information about another ripening was a half-conscious experience till I read the work of ethnobotanists Trevor Lantz and Nancy Turner, writing on phenology, the timing of life-cycle events. They describe in eloquent detail a system of seasonal reminders used by some British Columbian tribes. Natural phenomena that are relatively easy to experience, like flowers, like ripe berries, like birdsong, reliably occur at the same time as other important phenomena more difficult to observe, like roots ripening underground, like salmon leaving the ocean and beginning to move up the rivers and creeks. Plants and animals nearby, the so-called indicator species, tell of others farther away. As Paul Shepard says, “Phenology—the seasonal timing of life processes: sprouting, leafing, blooming, fruiting, quiescence—must surely have been one of the first sciences.”

In this carefully recorded lore, events of great subtlety may signal when it is time to harvest vital resources. When Douglas fir cones shed the golden dust of their pollen, the chartreuse cambium of ponderosa pine that lies hidden beneath the outer bark is ready to remove for drying and then pounding into flour. The birth of mule deer fawns signals the ripening underground of avalanche lily bulbs.

THE SALMONBERRY BIRD

Some northwestern coast tribes connected the silvery, flutelike call of Swainson's thrush, which also rises up through our moist coastal forests farther south, with the ripening of salmonberries. The breeding call of *Hylocichla ustulata* was thought to awaken the berries and cause them to ripen. Mature salmonberries in turn indicated that the salmon were leaving the ocean to begin their freshwater journey from the mouth of the rivers and creeks inland; salmon harvest could begin. The bird we have named after English naturalist William Swainson was known to these tribes as "the salmonberry bird." This information inspires me to find a sunny spot in the garden in which to plant salmonberry, a species with which I am not very familiar, but which also grows in this region. *Rubus spectabilis* forms a brambly thicket and in the spring bears large showy red flowers on bare stems. I want to taste its raspberry-like fruits and see what birdsong sings them into ripeness here, further south.

Contemplating this profoundly different way of marking the seasons lets my mind float free to imagine, if only for one recharging moment, the freedom and the necessity to take in natural phenomena as life's main event. I marvel at the focus required to observe and connect synchronous happenings to each other, each pair signaling a time of efficient and concentrated harvest. "You young people," a Native American lady once observed to me some twenty-five years ago, "think we were able to do what we wanted to do whenever we felt like it. It wasn't like that." Indigenous peoples paid strict attention to certain life-cycle events, and the timing of their response was often critical to their well-being and survival. Though our lives are not so directly dependent on such timing, this work I am doing still requires that I get it right.

As layer upon layer of associated events accrue, we who work here build our own library of seasonal markers, which mix the botanical, the ornithological, the piscatorial, and the personal. I realize that my garden and seed room are replete with indicator species and information that can help me figure out some

of what I need to know about my home. One seed envelope records a memorable collection day. Large-flowered fairy bell (*Disporum smithii*), low-growing lover of shady banks, grows in nearby coastal canyons. It was my birthday, and my daughter celebrated the day by collecting these large orange berries with me. She is a long-distance runner, and slowing down enough for this measured occupation was part of her birthday gift to me. Back home, she cleaned the berries as well, running them through the macerator with water, then pouring off the debris that rose to the top, while the clean triangular seeds, smooth and creamy as ivory, lay heavy in the bottom of the bowl.

Those seeds have long since been measured out, slipped into packets, labeled, and sold, but this envelope, still in use, brings back their cool feel and the pleasure of that day. This memory, replete with visceral experience and filial kindness (she was in high school then, finding her own path, and not much interested in mine) is an instance of my own version of phenological correspondences. The date of my birthday I now connect with the pumpkin orange berries of fairy bells, ripe on the one day of the year that my daughter does whatever I want to do, no matter how far from her own inclination. Maybe that leap out of adolescent egocentricity helped ripen the seeds. The beauty of these two life-cycle events, in any case, is now indelibly connected in my mind.

We are not the first mother and daughter to gather seeds together and to sense correspondences between events. The people who lived here before us, the Coast Miwok about whom we know way too little, and the Pomo, made their own phenological observations. In the early part of the twentieth century, a young anthropologist named Isabel Kelly spoke with two of them, Tom Smith and Maria Copa Fria. Her notes of those interviews are like sound bites, isolated fragments without context. We know more about the ethnobotany of the Pomo, in part thanks to a modern tome written by members of the Kashaya Pomo tribe, Jennie Goodrich, Claudia Lawson, and Vana Parrish Lawson, who explain, “The seeds [of grasses] were gathered in June or July when the first warm inland winds come to dry the grasses, causing them to throw their seeds. The women used to watch for these winds, knowing when they come there will only be a few days to gather the seeds before they fall to the ground.”

Though spring is by and large an ecstatic experience here, there are many days when the wind rises like a monster in the late afternoon, buffeting, roaring, ripping tarps off woodpiles, plowing down fences that show any signs of weakness. Where trees are concerned, the wind culls the herd, bringing down dead limbs, uprooting those whose roots became too waterlogged during the winter rains to withstand its powerful ministrations. After big windstorms, I make hopeful

drives through the town, looking for serious damage to the misplanted giants, the blue gum eucalyptus, the pines, and cypress. The low-growing, rounded trees and shrubs of coastal scrub, chaparral, and coastal forest, absorb and are strengthened by the wind. For these natives the wind is an ally.

The wind is our ally too. It sings in our ear, “Go out, go out and collect the shiny, long-awned seeds of purple needlegrass.” The wind knocks us on the head, saying, “Remember. Don’t forget. Go soon or the seed will be all gone, ripped off the stalk by the blustering gusts.”

So the year turns, and we gather, measure out, and package a small sample of its bounty and complexity to send to others who wish to live as much as possible with the plants, and their associated insects and animals, which belong to this place. Like the walnut of the table, we have grafted ourselves onto the native, in the hope of creating a new kind of figure.

Sometimes I put everything else aside and try to empty my mind so that it can be filled by the great circling gyre; so that notice of time passing is given solely by the ripening of seeds, the emerging of insects, the movement of fish in the water, the maturing of roots underground, the appearance and disappearance of birds, the rising up and quieting down of their songs; so that the sweep of natural phenomena holds my attention long enough to connect events of importance. Like wind bringing down the seeds of native bunchgrasses whose roots go down fifteen feet, relatives of those same grasses whose seed was gathered one hundred fifty years ago by other women and their daughters. Like birds whose song is so necessary and so powerful that they take their name from the rich red fruit that ripens through the agency of its sound.