Interior Places

Lisa Knopp


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For my mother, Patricia Knopp
and in memory of my father,
Joseph Knopp (1932–2006).

Contents

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One

The Way In

I collect geodes: round, hollow rocks, the cavities of which are lined with sparkling minerals. From the exterior, a geode is a plain, bumpy, gray-brown sphere (*geode* is derived from the Greek *ge*, meaning "earth," and *eidoes*, meaning "form") with diameters typically ranging from two to six inches, though some may be thirty inches across and some others may be smaller than a marble. If you insert a screwdriver into a fine crack in a geode and give the screwdriver a light tap with a hammer, the rock will crack open. Then, the orb's crystalline interior will be touched, for the first time, by the light of day and the crystals will sparkle.

When collectors find geodes in the field, they heft the rock and tap it firmly as if it were a melon. What they're listening for is the disappointing

sound of fullness or the promising sound of hollowness. It's the hollow interior with its greater exposure of the crystals that collectors covet. More sparkle per pound, we'll tell you. The half of the grapefruit-sized geode that functions as a bookend in my office is completely filled with intergrown crystals. While I appreciate these halos of buff, gray white, and caramel, I don't marvel at them as I do the two halves of a plum-sized geode on display in my living room. Clear, rock-candylike crystals line the inner shell of this geode; nearer the hollow center are clusters of charcoal-gray "diamonds." I move this wonder back and forth in my hand, watching the light play on the flat surfaces of the crystals.

While geodes are found in carbonate-rich rocks throughout the world, the best ones, in terms of the variety of crystal formations and mineral inclusions, are found in cavities in the limestone and shale laid down in the Mississippian strata some 310 to 340 million years ago in what is now southeast Iowa, northeast Missouri, and west-central Illinois. More precisely, the geodes with the most beautiful crystals were formed within a thirty-five-mile radius of the confluence of the Des Moines and the Mississippi rivers. My mother's mother's people lived a few miles from that watery intersection in Keokuk, Iowa, and I've spent over half of my life within an hour's drive of there. The geodes found within an area bounded by Burlington, Iowa, to the north; Keosauqua, Iowa, to the northwest; Kahoka, Missouri, to the south; Colchester, Illinois, to the east; and Dallas City, Illinois, to the northeast are known as "Keokuk" geodes and the dominant color of the crystals are white, off-white, pale pink, and yellow. For my father's seventy-third birthday, I bought him a Keokuk geode, cracked into halves, each half lined with milky white crystals, and shipped it to him in Ohio, where he now lives, as a reminder of the place that we came from.

Geologists aren't sure how geodes were formed, though most agree that they have an ancient, watery origin. During the Paleozoic era, much of the center of North America was covered by a wide sea. The last time the area producing the Keokuk geodes was submerged beneath carbonate-producing seas was during the Mississippian period, a time of fluctuating

sea levels. Where the sediments contain fossils and quartz sand, the waters were probably shallow. Where there are no fossils in the rock, the area was probably deeply immersed. It was during the deep, quiet periods that concretions—round, often compact accumulations of mineral matter in gas bubbles, animal burrows, and other hollow pockets—formed in the rock or the mud. Later silica replaced the calcite and began to form the hard but slightly permeable chalcedony shell that is found on the exterior of all Keokuk geodes. This outer mineral layer of chalcedony, a type of quartz, is more resistant to weathering than the host rock (limestone or shale in Keokuk geode country), which is why the geodes have persisted to this day.

Over time, mineral-bearing water slowly seeped through the sediments and the tiny fractures in the chalcedony shell, causing the core concretion inside the geode to dissolve and leaving a hard, hollow cavity in which minerals could precipitate. Because different silicas cool at different temperatures, layers of various types of mineral crystals formed within the cavity. White or transparent quartz is the most common mineral found in Keokuk geodes. Chalcedony with its blue, white, or gray crystals and calcite with its clear to cream-colored crystals are also common. Secondary materials include iron pyrite, kaolinite, ferron dolomite, chalcopyrite, barite, marcasite, sphalerite, pyrolucite, geothite, and selenite. Growth proceeds toward the center, with the youngest crystals nearest the middle. When some hollow geodes are cracked, water runs out, which means that these geodes were still in the process of forming the mineral layers where light will dance and dazzle upon opening.

The best places to hunt for these ancient and deeply formed Keokuk geodes are in places where water and weather have eroded the strata. In Keokuk geode country, ice-age glaciers scraped away the Pennsylvanian and upper Mississippian strata, exposing the lower Mississippian section of marine sedimentary rocks. The Warsaw formations within the lower Mississippian strata are the most geodiferous. These layers are particularly well exposed around Keokuk, especially on the Illinois side of the Mississippi River. Geodes are easy to identify, says Stephen R. Sinotte,

a geologist who grew up in Keokuk. Due to their spherical shape, "they appear to be quite conspicuously 'out of place.'" Sometimes one finds them strewn on the ground at excavation sites, along river and creek banks, or on sandbars. Other times one must dig the geode out of the limestone or shale with a crowbar or electric hammer. In October 2005, a geode-hunting expedition centered in Keokuk, Iowa, permitted people to hunt geodes on private land for a fifteen-dollar admission fee and a fifteen-dollar charge for each bucket of geodes collected. I suppose that the expert geode hunters that came to the Rocktober Geode Fest saw the spectacular interior in the plain exterior. Cracking the rock only confirmed what they already knew.

In Burlington where I grew up, geodes are on display everywhere it seems: in the lobby of the old hospital, embedded in cement at St. Mary's Grotto, in every other rock garden. But the most remarkable geode is the 750-pound North Cedar Creek Gem, which E. N. Smith, a Henry County, Iowa, geode collector, found in 1935 on the North Cedar Creek in what is now Geode State Park. Since 2005 this gem has been on permanent display in the Iowa Store on the riverfront in downtown Burlington, which is where I saw it. It has a forty-inch diameter and is whole except for a place where someone has chipped away just enough of the exterior, a tiny window, a peephole, to reveal the clear crystals within. "It should be cut open so people can see what's inside," an employee of the Iowa Store said to me. But I wonder if the glittering interior of this massive rock might not be more than we could bear.

The outer edge, be it a shell, coastline, brink, border, or threshold, is where things thin out, wear away, or fall off. It is the boundary between this and that, and so it contains, in some combination, attributes of both. Middle age, with its double edge, is the old age of youth, the youth of old age. The line between summer and fall is blurred, partaking both of summer's lush prodigality and autumn's seedy retreat. Some who live near the state line have dual affiliations. My grandparents drove a few miles from their home in Keokuk, Iowa, to Alexandria, Missouri, to buy

gas and cigarettes because the tax on each was lower south of the border. They took my brother Jamie and me there to buy the fireworks that we couldn't get in Iowa; to eat in the truck stop where the clocks above the counter showed the local times of the various Alexandrias in the world (Egypt, England, Virginia, Louisiana, and ours, Missouri); my grandfather and Jamie hunted for rabbits and squirrels in the woods near the river; and they showed us Shefflers' geode shop just west of Alexandria on U.S. Highway 61, where one could extract geodes from mines or buy them in the shop. After the Mississippi River Flood of 1993, my granny grieved a bit that "Alec" had been taken away by the river and that what little remained had been bulldozed or abandoned. If she had been alive in 2006, she'd surely have grieved that Shefflers' horseshoe-shaped house and business, with the rose quartz-, Colorado serpentinite-, and geode-studded walls, were razed on May Day of that year to make way for a wider Highway 61. "Intimate domain" is what seventy-nine-year-old Betty Sheffler called the legal maneuver that took her home of fifty-nine years.

The center, heart, or interior, whether of a region, season, song, or love affair is where one finds the most intense expression of the thing. The watermelon is the most sugary, the cabbage the most sulfurous at the heart. The identities of people who live in the interior of the country tend to be more homogeneous than is the case with those who live near the border. The heart of the home, whether the kitchen table or a corner of the living room is where the best talk is carried on and where all that is right and wrong about that home and family is most evident. Philosophers identify the "interior" as that which belongs to or exists in the mind or soul, rather than the body or world. In *The True Religion*, St. Augustine wrote that we arrive at God by going into ourselves, by making the heart perfect, so that our desire is pure and uninterrupted. "Do not look outside; return to yourself," Augustine writes. "In our interior the truth resides. Go inside, where the light of reason is illumined."

The interior can be a desirable place to dwell. It can be a point where opposing forces balance or come to rest and so is a place of stillness. But, too, it can be the place where forces collide, and to reside there is to

always know chaos or tension. Interior places can also be sites of growth and activity: the ovary within the corn kernel, the narrow cell in the convent, the darkest depths of a crisis, the hub of the city, though any one of these may turn from a place of growth and wholeness and insight into a place of retreat, stagnation, or fear. Some interior places—a cave high in a limestone wall, a deep and primal fear, an assembly line within a nuclear weapons factory, a distant memory—are more difficult to penetrate. Crack them carefully or they will shatter. Others—a celebrity's hometown, a cornfield, a declining river city, the organization of an ant colony, the contents of a wood-duck nest box—reveal themselves to anyone who lingers and looks.

We better understand the interior if we know what lies beyond its borders; we better understand the exterior by exploring what lies within. The knowledge such places offer may be ripe for the picking, like a proverb whose meaning is obvious or a violet which catapults its dry, ripe seeds over the ground. Or it may be tightly held like the revelation within the koan or the walnut meat within the hard, bony shell, within the fleshy, green outer casing. Whatever its nature, there is something to be gained by voyaging to the interior.

I wrote the sixteen essays in this collection between 2001 and 2006. The title, *Interior Places*, came to me before I'd written a single one. From the beginning, I appreciated how this title allowed me to ramble freely over the outer and my inner terrain. Directly or indirectly, each of these essays explores how one perceives or knows an interior place, how one might be changed by being within, how being within informs one's experience of being without. Perhaps I am so fascinated by this topic because that is where I now find myself: at home in the center of North America, right over the continent's beating heart in Nebraska and Iowa; deeply settled into my vocation, art, and faith; so far into middle age that I couldn't disguise the fact if I wanted to. In short, I am far from the edges. Or perhaps because I grew up in the rich, geode-bearing region of southeastern Iowa, living for almost three decades in Burlington, briefly in Keokuk, briefly

in Mount Pleasant, briefly in western Illinois, and occasionally sitting on the beach at Geode State Park in Henry County, Iowa, I know that what I might find within a rough, bland shell is a hollow, spectacularly bejeweled interior. Or perhaps I am drawn to this topic for both reasons, and so for me it is doubly charged. These sixteen essays are my geodes. Some I found tumbling in creek bottoms. Some I found strewn along creek banks. Some I chipped from the limestone. Some I bought at souvenir shops or church rummage sales or on the Internet. Some were gifts. I collected them, carefully cracked them open, and brushed the crystals with soap and water until they gleamed. Now, I offer them to you.

Certainly there is no better form for exploring interiority than this pliant, self-absorbed, reflective form, the essay. Michel de Montaigne, widely acknowledged as the "inventor" of the contemporary essay, called his prose pieces *essais*, derived from the Old French *assayer*, meaning "to try, to attempt; to endeavor; to make an experiment of; to test the quality of; to try out." What the essayist tests or probes through this wonderfully open, malleable form are his or her own experiences, perceptions, philosophies, and conclusions. That means exploring the interior. That means cracking oneself open and revealing one's own light-catching crystals.

The one who essays is, as Cynthia Ozick observed, "heir to nothing, and sets out with empty pockets from scratch." I take that to mean with no road map, guidebook, or compass in hand, no itinerary or destination in mind, save to discover, through the writing, myself and this interior place in which I'm situated.

Two

Traces

Shortly after eleven o'clock on a prickly, hot Saturday morning in July, my brother John, sister-in-law Kim, my children, Ian and Meredith, our beagle puppy, Belle, and I arrived at Keokuk National Cemetery. I'd been to this cemetery as a child and once as an adult but had never noticed the field planted with neat rows of white, identical headstones or the granite obelisk topped with a figure of a Confederate soldier. Because of its position near the junction of the Des Moines and Mississippi Rivers and as Iowa's southeasternmost town, Keokuk was a transportation hub during the Civil War. Iowa's first troops were mustered from there in 1861 and Mississippi riverboats brought the sick and wounded from southern battlefields to the seven military hospitals established there by the federal

government. The Union, Confederate, and unknown soldiers who died at one of the hospitals or en route to Keokuk were buried in this cemetery, one of the twelve original national cemeteries. Now the remains of over forty-six hundred American soldiers and many nonmilitary people with local roots are interred there. July 21, 2000, my maternal grandmother was joining them. We were there to put my granny's remains in the ground. Absent were my mother, father, and brother Jamie and his family, each of whom had their own reasons for not being there.

When we arrived at the grave site, we found a T-shaped strip of bright green carpet covering the ground. Where the two sections met sat a low bench with a polished wood top. The legs of the bench were covered by dark green velvet curtains hung on rods. The man from the funeral home set a black box, as tall as and a little wider than a jumbo box of cornflakes, on the bench. The gold label on the box read: "Cremated Remains of: Viola Mae Parris." Behind the bench and the black box was a pink granite headstone with PARRIS carved on the face. On the left was etched the scantest details about my grandfather's life: "Arthur E. / June 15, 1906/ February 2, 1990." On the right, my granny's information: "Mae V. / August 15, 1915." Beneath that was a shiny, blank rectangle where "July 11, 2000" would be carved. To the right of my grandparents' graves was Granny's sister's headstone: "Pearl E. Parker/ 1906–1989." I had to remember that her birthday was February 11, since it wasn't carved in stone and I didn't know who else would remember. And it was through the remembering of details and what they evoked that I could sustain some shadow, some trace of those I loved who had left this life and of me at an earlier time. The man from the funeral home set the display of red roses and pink carnations that my mother had sent next to my grandparents' headstone. The gravedigger, a large, amiable man carrying a shovel, asked if we were ready to inter the remains.

"Not yet," I said. "We're going to have a ceremony."

The last few times I telephoned my grandmother at the nursing home, she told me that she was dying and that she was scared. Though she had

numerous health problems, she wasn't dying of a disease. Rather, she was just old and worn out and terrified. The last time I telephoned, she couldn't do anything but moan and call my name: she had already left me. When she lay dying during the summer of 2000, almost nine hundred miles separated us, and then, my income was too small to justify buying a plane ticket for something I wasn't sure about—or so I told myself at the time. Now, I regret that I didn't go to her during her final days and brush her hair, hold her hand, and gather her stories of her childhood and her family's origins.

Of all of my grandmother's wide-ranging evocations of her past, the ones that interested me the most, the ones that left me wanting more, were set in Montrose. The stretch of river between Montrose and Keokuk is one of Iowa's most spectacular landscapes. There the Mississippi flows between limestone bluffs three-quarters of a mile apart with little bottom land on either side. And there the Mississippi flows over a riverbed comprised of almost horizontal limestone ledges: the eleven treacherous miles of the Des Moines Rapids. In the nineteenth century, travelers heading up the river stopped at Keokuk, disembarked, moved their goods from large to smaller boats and barges, reboarded, passed over the rapids, and then stopped at Montrose or Nauvoo, Illinois, directly across from Montrose, to transfer the goods and passengers back to the larger vessels. This laborious process spawned various businesses to serve river travelers and crews. Consequently, Montrose prospered and grew.

But in 1877, the Army Corps of Engineers excavated a deep canal around the rapids on the Iowa side of the river. In 1913, a private company built the hydroelectric dam at Keokuk, which raised the water over the rapids and flooded the riverfront and the fields where Granny's father's people had grown melons in the sandy soil near Montrose. Each of these "improvements" at once made the Mississippi more navigable and caused a decline in the population and the economy of Montrose. During my childhood, Montrose was but a good place to fish or to buy fish bait or smoked carp wrapped in butcher's paper. But in my grandmother's Montrose stories, river waters receded and the town filled again with river boat captains

and crews, fishermen, bootleggers, fiddle players, midwives, jilted lovers, button-makers, and tenant farmers.

One of the more tantalizing stories Granny told was about her Aunt Mary (Whitaker) and Uncle Ab Bunker. While walking down the street in Montrose, Ab had been shot and killed, leaving his wife and their children to fend for themselves. Not long after Ab's murder, one of his children died of starvation. In response, Mary, who Granny portrayed as tough and enterprising, began making and selling whiskey, the bottles of which she hid beneath the floorboards in her house. Thereafter, her children were never hungry. Was this story, or any part of it, true? If Granny had been a child when she'd known Mary and had heard these family stories, what had the ensuing decades done to her memory of them? Since my thirties, I've been aware of my own memories fading, tarnishing, decaying, or listing a bit, the joints no longer square. First names only. Bare-bones plots instead of fleshed-out stories. The troubling sense that I've confused or misplaced details that I once knew, or that in order to fill in gaps, I have imported new knowledge into old memories. How much frailer, cluttered, and tainted was my granny's memory after all those years. Putting aside questions of reliability, what in our conversation had provoked her to call forth and impart to me this story about murdered, starving, bootlegging kinfolk and, more importantly, what meaning did she attach to it or want me to extract from it? Even if the memory was entirely fabricated, the answers to these questions could be revealing.

Long ago, I attempted to verify the details in this story about the Montrose Bunkers. Shortly after Granny told me about them, she and I walked the Montrose Cemetery in search of Ab and Mary's graves but couldn't find them. The cursory search I undertook at the Iowa State Historical Society for the story of Granny's uncle's murder revealed nothing. I concluded that Granny had told me a good story with little basis in fact. But almost six years after Granny's death, when I set out to research the place that her family came from for this essay, confirmation came. On June 18, 2006, ninety-eight years to the day after Granny's favorite aunt became a widow, I discovered a Web site for Montrose that lists those citizens

whose names appeared in the *Montrose Journal* between 1889 and 1926. And there they were: the Bunkers, Mary and *Ad* (I had misremembered or misheard his name). Through the handful of articles that I obtained from the Keokuk Public Library, I learned that on June 18, 1908, forty-year-old Ad Bunker stood in front of Zack Andrews's house, calling him "some foul names." Andrews finished milking the cow, took the milk in the house, and returned with the revolver, with which he shot Bunker. At the trial, Andrews was declared insane (among other things, he told the court that the Lord had ordered him to remove all Democrats from the earth) and committed to the state asylum in Mount Pleasant. What a tumultuous time that must have been for Mary. She and Ad had seven children; Ruth Viola, named, I suppose, after Mary's sister Viola, was only a month old. Eleven months later, Ruth died. A little over a year before the murder, Ad and Mary's daughter Ann married Zack's son, James Andrews, whose tuberculosis was the source of a complicated conflict between Ad and Zack. James died a little over a year after his father-in-law's murder, leaving Ann with two small children.

While these details confirm the factual basis for my grandmother's story of Mary and Ad and suggest a factual basis for her other stories, they do not tell me what I really want to know: why Granny loved Mary so; how Mary survived the loss of her husband, daughter, and son-in-law; how the river looked and moved and smelled in those final years before the dam was built. At the time of Granny's death, I had none of this corroborating evidence from the *Montrose Journal*. I hoped that at her funeral, I'd meet people who could confirm or deny the existence of Mary and her husband, and others who appeared in Granny's stories, and offer me their own memories of the people and places of which she had spoken.

But there would be no funeral. According to my mother, Granny had paid for a burial but not a service. I shouldn't have been surprised. For as long as I can remember, Granny had something against funerals, though I never learned what. She and her brother Ginger had made a pact that they wouldn't go to each other's funerals. Consequently, she stayed home

on the day of his service. When my great-aunt Pearl ("Pertsie") died in 1989, my grandfather in 1990, and my great-uncle Buster a few years later, Granny boycotted those services, too. Some say they don't go to funerals because they want to remember the dead as they were at an earlier time. But this is a flimsy excuse. For most of us, our most intense period of encoding, the process of turning what we perceive into memories, occurs between the ages of ten and thirty. Psychologists call this an "autobiographical memory bump." Consequently, most of us have more and stronger memories of parents, grandparents, and siblings from this period than any other. While I remember my loved ones' aged bodies and circumscribed lives, while I remember them in nursing homes, hospitals, or coffins, in my sharpest, most indelible memories, my parents are always in their thirties or forties, my grandparents are always in their fifties or so, and my brothers are always children or young men. Surely a glimpse of one of her siblings, embalmed and coffined, couldn't have weakened my grandmother's memories of them as young, robust, and engaged in the world.

Years before she died, Granny told me that she wanted to be cremated. I told her that I did, too. Cremation seemed so civilized. Flesh, fire, ashes, and pulverized bone rather than a corpse pumped full of formaldehyde. Yet I felt uneasy about this request, as if it was something I should have protested. "Please don't. I can't bear the thought of your body being turned to ashes." But I didn't. Nor did I ask the right questions: "Do you want your ashes scattered? If so, where? And if your remains are scattered, what of the empty place in the cemetery between your husband and your sister?" Apparently, Granny had told my mother or someone else of her request, because her cremated remains were sent from the funeral home in Ohio near my parents' house and the nursing home where she'd spent her last few years to the funeral home in Keokuk.

What makes me uneasy is this: I hold the far-fetched and macabre hope that if memory is an input that causes enduring changes in one's neural tissue, as neuropsychologists claim, then perhaps in the future we can exhume a loved one's embalmed body and harvest the "engrams" or

traces, the fingerprints of stimuli that serve as the basis of memory. But fire makes dust and smoke of the autobiographical memories borne in the hippocampus, the cortical structures surrounding it, and the neural pathways that connect them to the cortex. Gone forever are the memories that one might retrieve from those interior places.

The obituary that I placed in the *Gate City Daily* in Keokuk, where my grandmother was born and lived most of her life, and the *Hawk Eye* in Burlington, Iowa, my hometown forty-five miles up the river from Keokuk, where she lived from the time of my grandpaps's retirement until her move to Ohio, reduced my grandmother's life to two tidy paragraphs. When I sat down to write it, I had all of the facts that I needed but one. When and where had my grandparents married? August 3, 1932, in Kahoka, Missouri, my mother answered. I knew the rest of the story. They had crossed the state line, the Des Moines River, into Clark County, Missouri, where they eloped. Granny had been sixteen, Paps twenty-six. After the ceremony, Granny returned to live in her mother's house, as if nothing had happened. A couple of weeks later, her mother got wind of her daughter's marriage and sent her to live with her husband. When Granny was seventeen, she delivered twin boys, Jackie and Jerry, both stillborn. When she was twenty, she gave birth to my mother, Patricia Mae.

In the obituary, I requested that condolences be sent to me at my home in Lincoln, Nebraska, in hopes that I'd hear from people that my grandmother had known. I intended to write back to each of them. But Granny had lived away from Keokuk too long to have friends or coworkers there who remembered her or felt connected enough to send condolences. She was the sixth of seven children, all of whom were dead. My grandfather had died ten years earlier. He was the second of thirteen. His few surviving siblings were very old and I didn't know where to begin looking for them. My mother was Granny's only child; my two brothers and I her only grandchildren. Only one person, the wife of one of Granny's nephews, wrote to me, and that was several months after Granny's death. If we had had a funeral, would anyone have come?

July 15, John called to say that he wasn't comfortable with the idea of strangers putting Granny's ashes in the ground with none of us there. Would you meet me in Keokuk? he asked. Apparently he needed a ceremony, too.

We stood in a semicircle around the box of Granny's remains. "Let's each tell a story about her," I said.

John nodded.

When we drove past Montrose that morning on the way to Keokuk from Burlington, where we were staying, I remembered that Granny and Paps had taken Jamie and me to fish for bluegill in the lily-pad-covered Mississippi River sloughs. "I'll start," I said. "Granny was the first woman I'd ever seen who wore blue jeans. She wore them with one of Paps's plaid shirts when she went fishing, which was often. That was before everyone started wearing jeans. Granny didn't mind being different. In fact, one time she told me about a patient at the hospital who told her that she was weird. Granny said to the woman, 'I like you, too.' With that attitude, where might she have gone in life if she'd been educated?"

I asked Ian what he remembered. At fifteen, Ian was the eldest of Granny's six great-grandchildren and the one with most memories of her before she became blind, hard of hearing, and immobile. "When she babysat me, she made 'quick pizzas.' A piece of bread with catsup, oregano, cheese, and bologna toasted in the oven."

"She made me those when I was little, too," I said.

"Her house was always dark," Kim said.

"I think that's because she used to work nights at the hospital nursery. She kept the drapes closed and slept on the couch during the day. Maybe she grew to like it that way."

"I remember her running the Seventh Street hill in that little Rambler of hers," John said. "She'd speed up the hill—we'd hope to heck for a green light once she got there or no traffic if the light turned red—and then, because there was a bump at the top of the hill, we'd be airborne."

"Yes!" I said. "Our stomachs would drop. We thought we were flying. As we climbed the hill, we'd shout at her, 'Go, Granny, go!' like the Beach Boys' song."

"The Beach Boys?" Meredith asked.

"'The Little Old Lady from Pasadena.' 'She drives real fast and she drives real hard/ She's a terror of Colorado Boulevard . . . Go Granny, Go Granny, Go Granny Go,'" I sang.

John continued. "One day—I think I was alone with Granny—we went flying over the top of the hill and there was a cement truck. Parked. Filled the windshield. Let's just say that Granny had very good reflexes."

"I remember when you guys took her truck away from her," Kim said.

"She was driving too fast," I said. "Running up on curbs. Taking corners too sharp."

"Scaring children," John added.

"I remember when she started watching Oprah," I said. "After she'd seen several shows, she reached the conclusion that 'People used to have problems, but now they just have stress.' Profound, huh?"

"She never said my name right," Ian said. "She always called me 'Eeeen.' So did Paps."

"Yup. Always drawn out like that, too," John said.

"One time she wanted to call Ian to do something," Meredith said, "and she got mixed up and said, 'Jamie! John! Shit! Eeeen!'"

When they heard our burst of laughter, the man from the funeral home and the gravedigger who had been chatting beneath a shade tree stopped and looked at us.

"When I was born, she wanted my name to be Melissa, so she could call me Missy for short," I said. "I used to be embarrassed by that name and told her to call me Lisa, but whenever she tried to say my real name, it never sounded right. Kind of strained. Unnatural. Eventually, I decided that I liked being called Missy and wouldn't have minded at all being named Melissa. Any mail that Granny sent me was addressed to "Missy

Knopp." When I was pregnant with you," I said to Ian, "Granny and Paps suggested that I name you either Robin or Sally."

Ian grimaced.

"So what's the deal with her names?" John pointed to the box of ashes, which said "Viola Mae," and the gravestone that said "Mae V." At that moment, I realized that I was the repository of stories and facts about my grandmother's life. I was the authority.

"She was born Viola May, but flipped it. Granny changed the spelling of May to Mae, so there wouldn't be any letters hanging down below the line when she wrote her name on her supplies at the hospital. I guess she thought that an *e* was neater than a dangling *y*. I have the scissors that she used to cut dressings off of patients. The blades are bent at an angle and one blade has a knob on the end so the patient won't get jabbed. There's a tag in a clear plastic ring on the scissors with her name on it. No loops hanging down." Suddenly, I wondered about this story. My mother's middle name was Mae, with no *y* hanging down. Granny didn't start working at the hospital until my mother entered high school. Had Granny been named Viola Mae at birth or had she exchanged "May" for "Mae" years before she ever went to work in a hospital, say, around the time of my mother's birth?

The gravedigger and the man from the funeral home were watching us, as if they wanted us to finish. I had one more story to tell.

"When I was in my last semester of college at Iowa Wesleyan, I had a tuition bill that I couldn't pay. I'd already taken out a two-thousand-dollar guaranteed student interest loan and was paying off a car loan. Somehow I had to come up with another thousand dollars if I wanted to graduate that May. But I had no money. If I had put off graduation until August, it would've been too late for me to get a teaching job for the fall. Graduating in August wasn't an option either, since I'd still have had to come up with the money by mid-July. I told Granny about my problem. That's when she and Paps were living in that tiny, aluminum trailer at Mom and Dad's place. Paps loved that trailer because, theoretically, he could throw the wheels on it anytime he wanted and hit the road. But

Granny hated it—the cramped quarters, the shoddy construction. 'We're just "baching" it here,' she'd say. Or was it Great-aunt Pertsie who said that about them?"

John shook his head. "Somebody said it."

"A few days later, she gave me a thousand dollars out of her meager savings account and I graduated with my class. She never asked for the money back. But twelve years later, when she didn't have enough money to buy groceries, I paid her back—forty dollars a month for a couple of years."

The gravedigger approached. "I hate to hurry you folks, but I've got another interment this morning. Will you be much longer?" How odd this ceremony, five people laughing, talking and laughing, must have seemed to him.

"Just give us a few more minutes," John said.

We prayed; then I snapped pictures of my grandparents' gravestone, Granny's remains, and nearby family graves. John signaled that we were ready for the burial. The gravedigger moved the box of ashes and the bench and rolled up the green carpet that had covered a small, rectangular hole. He set the box of ashes at the bottom of the hole. We may have sprinkled it with handfuls of earth, though I can't say for sure. Then the gravedigger filled the hole and patted a square of sod in place. It was done. Our ceremony of remembrance had been intimate, spontaneous, funny, and respectful. And for the duration, it had raised the dead. I believe that Granny was pleased.

The graveside ceremony was over, but something felt unfinished. Rather than driving back to Burlington, we bought food at the Hy-Vee deli and drove to Rand Park for a picnic. I do not remember going to this park as a child, though I do remember Granny, who owned no property other than her and Paps's slim plots at the cemetery, driving near the park along Grand Avenue, where Keokuk's wealthy, early citizens had built big, elegant houses near the edge of the bluff above the river. We'd marvel at what I now recognize as Tudor, Queen Anne Revival, and Colonial

Revival mansions. Granny often pointed out a mansion that I remember as being on the river side of the street (actually it was several blocks away, I recently discovered), reputedly built by slaves and later used to hide runaway slaves. A plausible story. Unlike Iowa's other southernmost counties, whose lower border was a straight, human-drawn line, the southern edge of Lee County was a wiggly line drawn by the meandering Des Moines River. Consequently, Lee County dangled like the loop of a Y into Missouri, once a slave state. And it was a statue of a Confederate rather than a Union soldier that kept watch in the cemetery.

At the entrance to the park, on a high, wooded bluff above the Mississippi, rose a statue of Chief Keokuk, a member of the Sac and Fox (Mesquaki) tribes that had farmed and hunted on both sides of the river. Keokuk wasn't the rightful leader of the two tribes. When Black Hawk, who had a better claim to the title, sided with the British in the War of 1812, Keokuk refused to join him. To some, Keokuk was a traitor; to others, he was a realist. On behalf of the U.S. government, General Winfield Scott appointed Keokuk chief of the two tribes. Thereafter, Keokuk ceded his people's lands to those who were squatting on or attempting to buy them, and under his leadership, the Sac and Fox, along with several other tribes, traded their lands in the upper Midwest for reservations in what is now Kansas. Keokuk died there in 1848. In 1883, the people of the city of Keokuk had the body of their namesake exhumed from his Kansas grave and reinterred in Rand Park, reputedly on the site where the "chief" had held his council fires on the edge of the bluff. In 1913, the Daughters of the American Revolution marked his grave with this statue, now green with age. Stern-looking, heavy-browed Keokuk, wrapped in a blanket and topped with a war bonnet, gazes across the wooded bluffs, across the Mississippi and into Illinois. In the winter he appears to be watching the hundreds of bald eagles that ride the thermals, that fish in the open waters near Lock and Dam 19, that perch or roost in the trees on the Illinois shore.

In my living room, I've hung a framed, black-and-white photograph of my grandparents and mother standing by this monument. My mother

wears a big-brimmed hat, frilly dress, tights, dress shoes, and no jacket. She says that her mother liked to dress her in yellow to complement her red hair, so I imagine that her hat and clothing are a very light yellow. She looks to be about four, which means that my granny, who is wearing a floral print dress and a long, plain jacket, hose, and pumps, is about twenty-four. She wears wire-rimmed glasses; she's parted her hair on the right, lightly curled it, and pulled it back; she's pinned a tiny dark hat to the left side of her head and a flower to her lapel. My grandfather, who is about thirty-three, wears dress pants, a white shirt, an open sweater with a zipper, and a cap. Judging by my mother's outfit, her lack of a jacket, and the bare branches, I guess it to be Easter and they've just come from church. My mother stands on a ledge on the Chief Keokuk monument between her parents. Granny has shifted her weight to one leg; Paps stands with his feet comfortably parted. But "Daughter," as Granny always called my mother, stands primly, with both feet together.

When Ian was three, he, my friend Pat, and I stopped by Rand Park, studied the statue of Keokuk and gazed upon the swift and shining river. But on the day of my grandmother's funeral, I felt that I was seeing the park for the first time. We explored the flower beds, the playground, and guessed where in this park Mark Twain, a printer for the *Keokuk Post* during the 1850s, had delivered the 1886 Fourth of July address.

"You guys want to run the Seventh Street hill?" John asked, as we were cleaning up after lunch. Of course we did. We drove down Grand Avenue and followed Seventh Street, also U.S. Highways 61 and 136, past the court house and across Main Street. As we were climbing the hill toward the intersection of South Seventh and Timea, we saw the traffic light click to green. John floored it; I did the same. What if someone traveling the opposite direction made a right turn on red as we were speeding up the hill? What if a cop saw us? Did Granny ever think of such things? I watched John and Kim's car disappear over the hill. "This is it!" I shouted, as we crested the hill. Ian and Meredith were expectant. Nothing. Nothing but a smooth ride downhill. At the bottom of the hill, the intersection of Seventh and Palean, John yelled out his window. "It's gone. They've

fixed the hill. We can't fly without Granny." With Granny's joy at being airborne, perhaps we should have scattered her ashes from a bluff above the river.

I motioned for John to follow me and turned onto Palean Street. For twelve or thirteen years, my grandparents lived in the house at 512, the longest they'd lived together at one address. What may have accounted for this longevity is that they'd worked out a good deal with the landlord: instead of paying the rent, they paid the yearly taxes on the property—or some such arrangement. But, too, they may have stayed because they liked the place. As a child, I spent plenty of time at 512. When I was four, my father was transferred from the CB&Q locomotive shops in West Burlington to the freight car shops in Havelock, Nebraska. A little over a year later, my young and homesick parents decided to return to Burlington. Since it was several months before we could move back into the house that we had rented out during our absence, my father lived in Burlington with his mother; my mother, Jamie, and I lived in Keokuk with Granny and Paps. (John's birth was several years away.) Once we'd moved back to Burlington, Jamie and I spent a couple of weeks every summer, occasional weekends during the school year, and part of our Christmas vacations at 512. As I drove down Palean Street, I was awash with memories. Was it 1965 or 2000 or both at once?

On the day of Granny's funeral, Palean Street was quiet. But when I was a child, it had been otherwise. My grandparents had lived next door to Elders, a store owned by Wendy and Helen, with an apartment above where Wendy, Helen, and their son, who swept floors and helped at the meat counter, lived. Elders reputedly had the best meat in town, sold Dixie Cream doughnuts, Quincy Maid potato chips, cottage cheese in tall drinking glasses; smelled of ripe bananas, worn, wooden floors, and raw meat; gave credit to their neighbors. Granny would run into Elders, grab a carton of eggs or a can of soup and flash it at Helen, an enormous woman in a dark print dress who sat on a stool behind the front counter. Helen recorded what Granny had taken; at the end of the month, they'd settle up. Granny said that when workers went on strike at Hubinger's,

Elders gave them credit for food but not for beer and sold the catfish, game, or homegrown vegetables they brought in. But what I remember most vividly were the rows of glass jars filled with penny candies on the shelves behind the counter. Helen waited while Jamie and I stood before the counter, taking forever to decide. Then, per our request, she'd drop Pixy Stix, cigar-shaped bubblegum, wax lips, Atomic Fireballs, Jawbreakers, Tootsie Rolls, and little malted-milk balls into brown paper bags so tiny that she could only get the tips of her plump fingers into them. We paid for the candy with Granny and Paps's empty pop bottles.

Years later, when Granny heard on the radio that Helen had died, she told me stories I'd never heard before. Wendy had fed meat scraps to Paps's rabbit-hunting dog, Belle; if Wendy ran out of fresh tomatoes in the store, he'd reach over the fence and pick those that Paps was growing. Though this exchange seemed to favor my grandparents, Granny seemed irked by Wendy's theft of their tomatoes. And she remembered that Wendy had bought his building for a song during the Depression from a religious group that was awaiting the end of the world. When the prophesied day of the Rapture came and went, the group sought to regain their sanctuary. Wendy refused their appeal.

For me, Elders was the heart of the neighborhood, though others might have placed it farther south. At the intersection of Palean and Progress–Commercial Streets a tavern occupied each of the four corners; a half block to the west sat another tavern. Paps was a regular at a tavern owned by his friend Howard who lived in a duplex a few doors down from 512. Sometimes, Paps helped out behind the bar. Pop Whitaker, my great-grandfather, was also a regular there. On the day that his social security check arrived, he'd ask my great-aunt Pertsie to drive him to Howard's where he'd cash his check and buy drinks for himself and the "blisters" at the bar, as Pertsie called his once-a-month women friends. When Pop's money was gone, he'd call Pertsie to take him home where he'd wait until his next check arrived.

Howard's was the only tavern in the neighborhood that I remember entering. Recently, I asked my mother about it. "When you went in," she said, "the bar was on the right."

"No, it was on the left," I said. "The pool tables were on the right."

"No, it was on the right. I can see it now."

Maybe she and I entered by different doors. But as I mull over the differences in our memories, I do see the bar on the right and the jukebox at the end of the bar nearer the front door, where I'm now convinced they belong. Why had I moved the bar to the opposite wall? Had I confused Howard's with some other place? I try to remember the names of the other four taverns. The Shamrock? The Buffalo? I remember with certainty the Black and Tan, the only one of the taverns whose parking lot I could see from the front bedroom window when I was supposed to be sleeping. Watching the men enter and exit the building and mill around in the parking lot both frightened and excited me.

My grandparents' house was in the middle of everything; the Burlington neighborhood I lived in was downright dull in comparison. People walked past 512 to and from Elders or the taverns or the Cozy Corner where we ate hamburgers and drank milkshakes. It was near enough to Hubinger's, the corn starch and corn syrup plant, that there was traffic to and from the factory. By mid-morning each weekday, the odor of the cooking corn enveloped us. I breathed shallowly until I became dull to the heavy, foul, almost yellow air. (I smell it now as I write.) The towheaded Stimpson boys, who lived across the street from 512, stood on their porch roof and held contests to see whose arc of urine reached farthest into the front yard. The Jenkins kids had head lice until their mother dipped their heads in kerosene. Once, a group of people who Granny said were gypsies, knocked on the door of 512 and asked to use the telephone. Granny allowed a woman in the group into the house, charged her a dime, and stood nearby while she dialed and talked. Mr. Jones, who lived in a house identical to my grandparents' and to their immediate south, fetched Granny one night when his baby was sick. I hid behind the chair where Granny sat so that the Jones family couldn't see much of me, yet I could see what Granny was doing: cleaning out the baby's nose with a bulb syringe; dropping something into his ears and plugging them with cotton. After we left, Granny said that the baby needed a doctor but the Joneses couldn't pay for one.

The Palean Street that I drove down on the day of Granny's funeral was and wasn't the same. Elders was a video rental shop; blue siding covered the old gray stones. The Joneses' house was gone and the lot, vacant. Howard had died of cancer decades ago. The fake, brown brick asbestos siding on my grandparents' house had been replaced with slate gray siding, not much of an improvement, really. The grass had been mowed but the flower bed was thick with foxtails and crabgrass. Granny had grown flowers there, if not every year, at least once. I reach hard but can't retrieve the name or color or shape of the flowers. Zinnias? Petunias? And why when I looked at this weedy patch did I have a wisp of memory of a bright rooster, Paps's friend Duke Dexter, and Granny shooing Jamie and me into the house because of something Duke was doing or saying that she didn't want us to see or hear?

Perhaps this and other memories are lost forever because the relevant traces or engrams have blurred and weakened. Or perhaps traces of everything we've ever experienced are still there, adrift in the deep, dark waters, but we can't retrieve them because we don't have the right cues, the right bait. Or perhaps we forget not because memories are lost through decay or displacement but because the human head and heart only has room for so many stories and images of the past. Because the formation of new memories interferes with the retention of old ones, the brain erases the old memories as it lays down new ones. By erasing memories of my childhood, I have more room for memories of my children's childhoods. By erasing memories of my grandparents, I have more room for memories of my parents. But I suspect that the process of deleting and retaining memories is less logical and exact than that.

As a child, I thought that Keokuk and Palean Street ended at the same place: about a block south of 512. Then, I had no sense of beyond. But my map of Keokuk shows Victory Park separating Palean Street from the Mississippi, which curves around the bend where it meets the skinny, little Des Moines River. What this map leaves out is that a bluff separates the old neighborhood and the riverfront park just as forty years, more or less, separate me from the time when most of my memories of this place were

laid down. Despite the passage of time, despite the changes in the house and street, this is where my grandparents live in my memories. Paps is an ironworker who spends his days off fishing or hunting and too many nights as a customer or bartender at Howard's. Granny is a nurse's aide, who works nights in the nursery at the Graham Hospital, pampers her mean Siamese cat, Jezebel, pulls catfish from the river, and has remarkably good luck running the Seventh Street hill.

It isn't enough to leave my children with photographs and written anecdotes about my grandmother's life. Rather, I want them to commit to memory at least some of these fragments: that their great-grandmother, with her minimal education, read voraciously; was always the first to leave a family gathering and while she was there, preferred to eat alone in the living room rather than at the table with everyone else; loved to dance; never scraped a butter wrapper ("We're not poor!" she'd say if she saw my mother or me do so); smoked cigarettes but quit; never cooked a meal that anyone raved over (her cooking, like mine, merely suffices); disapproved of pierced ears (it was women like Paps's sister Eslene, whose daughter ran off with a race car driver and left her kids with her parents, who had pierced ears); never allowed a political discussion in her presence for fear that people might "get mad or feel abused"; was blind as a young child because of something that Pertsie had put in her eyes; told me what to expect when we got to heaven (angels, harps, lovely clouds); spent her days off from the hospital at the river fishing but gradually spent more and more of her days off overmedicated with a sick headache; cut pizza into slices with a pair of scissors; was violently allergic to the mayflies that rose in clouds from the river each June and invaded our riverfronts for a few days; taught me how to draw a design that her mother, who had run a chuck wagon on the Oklahoma range for a few years, learned from an Indian (or so the story goes); kept secrets, though at times leaked tantalizing tidbits; would rather hold a baby than do just about anything else; delighted in those who defied the rules (a woman who bootlegged whiskey in order to feed her children; a wealthy, local citizen who hid fugitive slaves); never turned me away or denied me anything.

In truth, it's not so much my grandmother that I seek to impart to my children but me. After all, my memories aren't replicas of events but subjective, emotion-saturated records of how I experienced those events. I want my children to carry some of these fragments within them to guard against that day when my memories have been whittled down to nubs, the traces eroded to nothing or gone up in flames. It's a selfish motive, I admit. Yet, too, if my children know something about the place-times that I cherish and those who inhabited them, they'll understand why I am as I am, which in turn, will tell them something about themselves. If they know this, then there's nothing to deny or forgive.

After taking pictures of 51 Palean (the "2" was missing), we found the hospital where Granny had worked and the school where I'd had the same kindergarten teacher that my mother had had twenty-one years earlier. Often, Granny met me after school in her white nurse's uniform and cap with a piece of cake from the hospital cafeteria. On our way out of town, we passed Lincoln Elementary. Because I've never seen a picture of Granny as a child, because I don't remember her telling me stories about her time as a student (Did she ever get in trouble or win a spelling bee? Did she eat lunch alone or with a gang of kids?), I cannot see her there. We paused in front of Great-aunt Pertsie's house on South Seventh, within walking distance of the confluence of the two rivers. There Granny lived as a child, long before there was indoor plumbing, long before someone sold off most of the land. Our ceremony of remembrance was complete.

After we returned to Burlington from Keokuk, Ian and Meredith swam in the motel pool. I sat nearby on a chaise lounge and jotted down details about the stories we told and the sites we visited. But as I write about this weekend almost six years later, I realize that I did not record enough about my children's responses to the day. And now, that matters as much as my attempts to evoke, thicken, or vivify my memories of my grandmother or of myself at an earlier time.

I spread out the photographs I took of that weekend. On the day of Granny's funeral, Ian wore knee-length, denim shorts, a black hat (a

fishing hat to my eyes), and a short-sleeved shirt. In the photograph, the shirt looks solidly gray, but I know that the pattern is comprised of tiny squares of black, white, and gray. In a few weeks, Ian would turn sixteen and enter high school as a sophomore. It would be his last good year before things fell apart. Nine-year-old Meredith wore a sleeveless, white dress, drawn at the waist, and with white embroidered flowers covering the bodice. Her hair was pulled back in a bun; her skin was bronzed from daily swim team practice; she wore her new, wire-rimmed glasses. When I asked her what she remembers of that day, she spoke in detail of her dress, which she loved, riding to the funeral in John and Kim's car, and stopping at McDonald's on the way to Keokuk. She vaguely remembers being at the grave but doesn't remember Palean Street, Rand Park, the river, or running the Seventh Street hill.

If Meredith rode with John and Kim, then Ian, Belle, and I rode to the funeral together. What had we talked about? Ian remembers singing the Queen song "Another One Bites the Dust" and me telling him that that was an inappropriate song for such a day as this. His memory stirs the soup, shuffles the deck and, yes, I do remember him sitting in the front passenger seat singing. And I remember that Montrose, the wide river, and the bluffs on the Illinois side were in the background. Ian remembers that Belle, the dog he'd waited for all his life, the dog who bore the same name as each of Paps's and Jamie's rabbit-hunting beagles, went to the funeral and stayed in the motel with us. And he tells me that at the funeral, he told a story about a story that he'd written for Granny years earlier. When she lost her front tooth (a fact), she protested her condition by rallying the other nursing home residents around her (a fiction). After they conquered the nursing home with their canes, they set out for the mall, where the residents defeated the mannequins, again with their trusty canes. Through it all, Granny was their fierce leader. As I spoke, I remembered the story and how Granny had laughed when Ian read it to her. But between the time that I left the cemetery and sat down by the motel pool to record my memories of the day, I had forgotten it.

Now I have a shadow of a memory of Ian at Granny's gravesite telling his fabulous story. Perhaps since he and I talked about what he'd remembered and I'd forgotten and because we wondered out loud about the whereabouts of our copy of his story, the incident is deeply etched in his memory. Some day when my memories are frailer and dimmer and I've forgotten the whereabouts, perhaps even the presence of this essay about my grandmother, the nature of aging memory, and an eleven-mile stretch of the Mississippi, I'll ask him about Granny's ceremony of remembrance and he will call forth the story of his story. Rather than feeling reassured and content, I'm uneasy. What else am I on the brink of forgetting? What else sleeps beneath the surface of consciousness, waiting for the right cue to bidden, lure, or startle it into awareness?

Three

Bread and Butter

The freight or passenger trains rolling east over the Mississippi, across Illinois and into Chicago or west through southern Iowa, southern Nebraska, and on to San Francisco, often kept my family waiting at the tracks that crossed Main Street near the depot or that cut through the valley near Murray Iron Works. As a small child, I was fascinated by the blasts of the whistles, the flashing red lights, the clanging bells, the lowering gates, and the clackity-clack of flanged metal wheels hitting the fishplates that held the rails together. Then I was in no hurry for the gates to lift.

But as I grew older, I tired of counting the number of Chinese-red boxcars proclaiming the name of my father's employer, the Chicago, Burlington and Quincy, the CB&Q, or simply, the "Burlington Route."

Nor did I want to read the names of the other lines: the Milwaukee, the Rock Island, the Great Northern. If it was too late for us to slip around or under the gates or if we were far back in a line of motorists, all of whom had shut off their engines for the long wait, I was annoyed. "When you get tired of waiting, just say, 'Bread and butter, bread and butter,'" my mother instructed. "Bread and butter," I repeated, until one of the crew waved at us from the caboose, the gates lifted, and we made the bumpy ride over the tracks.

For almost a century and a half, the railroad provided bread and butter for many in my hometown. When Burlington was founded in 1836 in what was then Wisconsin Territory, Congress required that the new town reserve about twenty acres near the Mississippi River for public use. Twenty-two years later, the city deeded this land to the first of four railroads that would bear its name, a wise move, since it was the presence of a railroad, at least in part, that enabled Burlington to prosper as the manufacturer of furniture, baskets, buttons, spark plugs, cookies, batteries, antennas, electrical switch gears, farm machinery, and nuclear bombs. And it was the railroad that carried the name of my birth-and growing-up-place "Everywhere West," as the CB&Q's slogan proclaimed.

The Burlington, as the succession of railroads with Burlington in their names were known, had its origins in two times and places. In 1852, a group of Burlington businessmen founded and incorporated the Burlington and Missouri River Railroad (B&MR). One of these men, Iowa governor James Grimes, successfully lobbied the federal government for a land grant, the sale of which financed the building of the B&MR line across southern Iowa. In 1857, the railroad arrived in Ottumwa about ninety miles west of Burlington. The following year, the B&MR built a two-stall engine house on the riverfront property that the city of Burlington had deeded to it. In 1869, the railroad fulfilled the promise of its name by spanning southern Iowa from the Mississippi to the Missouri Rivers. The following year, it entered Nebraska and began expanding across the Great Plains.

The railroad's second point of origin was Chicago, the leading U.S. rail center. In 1856, four Chicago short lines, the Peoria and Oquawka,

the Central Military Tract, the Aurora Branch, and later, the Northern Cross, merged to form the Chicago, Burlington, and Quincy. In 1868, the CB&Q entered Iowa when it built a single-track railroad bridge over the Mississippi at Burlington. December 31, 1872, the CB&Q bought the financially stressed B&MR and combined the two railroads' riverfront shops, creating a combined work force of 364.

In 1875 the railroad began searching for a place to build an even larger repair shop. In response, the city annexed five hundred acres of land just beyond its western border on which CB&Q mechanic Joel West laid out the town of West Burlington near the shop complex. By the end of the decade, most shopmen lived there. In 1888, Murray Iron Works opened a foundry in Burlington and hired workers to make the cast-iron stokers that would feed coal into the locomotive boilers. Sometime in the 1890s, my father's father's people arrived in Burlington. Earlier that decade, they had left their village of displaced Germans near the Volga River in Russia. After their transatlantic voyage, the Knopps docked in New Orleans. I suppose that they traveled the Mississippi by boat, landed at Burlington, and took the Burlington Route west to Hastings, Nebraska. A few years after they arrived in south-central Nebraska, years marked by severe drought and economic depression on the Great Plains, they boarded the Burlington Route and headed east. Their destination was the pretty, bluffy city on the west side of the Mississippi, a lush, well-watered place, that may have reminded them of their former home on the hilly, western side of Russia's greatest river.

When World War I ended, the shops employed sixteen hundred people as pipe fitters, blacksmiths, upholsterers, machinists, mechanics, hostlers, painters, wipers, carpenters, boilermakers, boilermaker's helpers, and others. One of those sixteen hundred was my father's father who, from 1917 until the national shopmen's strike of 1922, earned his bread and butter by working at the shop storehouse. During the strike he was hired at Bock's greenhouses. With the exception of a few years in the early 1950s when he worked as a custodian at the nuclear weapons plant, he spent the rest of his working days tending roses.

The West Burlington shops specialized in manufacturing and repairing locomotives. Between 1897 when it built its first steam engine and 1940 when it built its last, the shops produced at least 172, perhaps as many as 215, steam locomotives. After World War II, the shops retooled and expanded to build and repair heavier diesel-powered locomotives. By 1953, 95 percent of all CB&Q locomotives were dieselized—the beginning of the end for the shops, since diesel engines require less maintenance than their steam predecessors. Also in 1953, my father was hired as a laborer at the shops where he swept and mopped floors until later that year when he was drafted into the army. When he returned from Korea in 1955, he was hired as a boilermaker's apprentice and learned to do the heavy steel work on the locomotives. In the days of steam locomotives, boilermakers made and tended the steel tubes where water was heated in the fire of the firebox—a delicate, dangerous job, since cracked or plugged tubes tended to explode. But since boilers had gone the way of the steam locomotive, the only boiler that my father worked on was the one that provided steamed heat for the shops. At the time of his retirement, about five hundred employees repaired parts such as generators or heads and liners and turned out about thirty-five overhauled locomotives per month.

In 1970 a new employer, a new railroad, bankrolled my father's paychecks. That year, the CB&Q, the Great Northern, the Northern Pacific, and the Spokane, Portland and Seattle, and later the St. Louis–San Francisco, merged to form the Burlington Northern, then the longest train line in the United States. This merger was long in coming: in his effort to gain access to Chicago, James R. Hill, of the Great Northern Railway, first attempted it in 1901 and several times thereafter. My father showed me a picture in his train magazine of the logo for the new railroad: a green capital *N* enveloped by a much larger white capital *B*. We marveled at the simplicity and rightness of the design and the inconceivable amount of money that the railroad had paid the designer. Even though I was only thirteen, I felt nostalgic as BN's Cascade-green cars replaced the CB&Q's Chinese-red cars. Even though the name of my hometown was foremost

in the name of the newly merged railroads, I missed the old name and its constant reminder of our long link with Chicago.

In 1994, my father retired after forty-one years with the "ray-road," as he called it. The following year, the Burlington Northern Santa Fe (BNSF) was born of a merger of the Burlington Northern and the Atchison, Topeka and Santa Fe. Soon, orange, green, and yellow locomotives began appearing with the new logo: a round, green ring bearing the words "Burlington Northern Railroad"; within that ring, a blue cross bearing the words "Santa Fe" on the horizontal bar. It is the latter, the Spanish words on the blue bar, that draws and holds one's attention. The name of my growing-up place is no longer foremost.

This shift in emphasis foreshadowed another, more drastic change. In 2002, BNSF officials announced their intention to eliminate either the Topeka, Kansas, or the West Burlington, Iowa, locomotive shops. Officials offered two reasons for the consolidation: both shops were operating at half their capacity; the railroad was now focusing on preventative maintenance rather than complete overhauls of locomotives. They did not mention BNSF's 14 percent decline in net income that year and the record profits of its chief competitor, the Union Pacific, though certainly that figured into the decision. Nor did they mention that although the West Burlington shop was BNSF's most efficient repair facility, the railroad was, according to an editorial in the October 7, 2004, issue of the *Hawk Eye*, "simply tired of dealing with the union." Just as it had in 1875, the city of Burlington assembled a package of incentives to persuade the railroad to keep the shops in its namesake. This package included more than $3 million worth of contributions from the state of Iowa, the cities of Burlington and West Burlington, Des Moines County, Southeastern Community College, Southeast Iowa Regional Planning Commission, and Grow Greater Burlington. BNSF spokesperson Steve Forsberg said that the incentives offered by the competing cities had not influenced the railroad's decision to locate the shops in Topeka.

Between 2002 and 2004, BNSF cut 140 of the 419 jobs at the Topeka shops and cut over 300 of the 429 West Burlington jobs. Then it transferred

most of the remaining workers in West Burlington either to Topeka or to Galesburg, Illinois. Critical job losses for a city of twenty-seven thousand. On March 27, 2004, the headlines in the *Hawk Eye* proclaimed: "Burlington Shops Are No More: Once Proud Facility Left with Only Forty-four Workers." On December 31, 2004, BNSF closed the West Burlington shops and transferred the remaining workers to the expanding locomotive maintenance facility in Galesburg. For my father, who had dedicated his working life to the railroad, the closing of the shops had ripped the heart out of his hometown.

In the nineteenth century, trains and railroad tracks symbolized a new economic order. Anyone who could buy a ticket or hop a freight train could enjoy an unparalleled ease of movement and quickly effect a major change of address. Even more significant was that goods could be shipped farther and faster than a team of horses could carry them. No longer did one have to produce everything at or near home; nor was one limited to buying from or selling to one's neighbor. Some were troubled by this. Henry David Thoreau, whose afternoon reveries were broken by the hawklike scream of the Fitchburg Railroad passing near Walden Pond, saw the growth of industrialism and the railroad, which went hand in hand, as the demise of agrarianism and independence. "Up comes the cotton, down goes the woolen," Thoreau observed. "Up come the books, but down goes the wit that writes them." The growth of the railroads and their influence would continue the rest of Thoreau's life and beyond. Every year between 1830 and 1916, railroad mileage increased. In the early twentieth century, the construction, operation, and maintenance of the rails, trains, and stations, formed the nation's largest industry, employing one of every twenty-five workers. Rural communities with railroads thrived; those without them stagnated, dwindled, or disappeared.

Railroad historian John F. Stover identifies 1916 as the year when "the golden age of railroading" ended. That year, the government, which had heavily subsidized the railroad industry, began investing in the competition through the Federal Aid Road Act, which matched state and federal

dollars for new highway construction. In 1916, 3.3 million automobiles were registered in the United States; by 1929, the number had surged to 23 million. Soon trucks, buses, airplanes, and pipelines also competed with the railroads for freight passengers. In 1917, more railroad tracks were being abandoned than built, a trend that continues to this day.

It wasn't just tracks that were being abandoned. The twentieth century was marked by a series of shop closures. For instance, the Burlington laid off or transferred workers to West Burlington from the shops in Plattsmouth, Nebraska, in 1931 and from the shops in Denver, Colorado, in 1986. Thereafter, Burlington Northern's only locomotive repair shop was in West Burlington. Similarly, the number of "class one" railroads (a railroad that generated an operating revenue of at least $319.3 million in 2005) dropped from over two hundred in 1920 to eleven in 1995. Now there are but seven. These changes also speak of a new economic order—one that fills me not with hope or optimism but with uncertainty, even dread, as employers abandon the cities and towns where they've long been centered and as competition between the producers of food, transportation, entertainment, communication, indeed, almost everything we want or need, is further reduced in the interest of greater profits for those who run the corporations.

As the tangible reminders of our nation's railroading past, a past which is entwined with that of my family and hometown, are lost to neglect and destruction or are carried away by collectors, my nostalgia runs full steam. Now when I sit at a railroad crossing in Lincoln, where I've spent most of my adult life, and wait for a BNSF or Union Pacific train to pass, I remember.

I remember that many evenings Grandmas Knopp, my brothers, and I walked through her backyard and that of her only neighbors, the Tinsleys, and waited near the tracks for the westbound California Zephyr. As we watched it pass, we knew that the people it carried were going far from us and that they were going there fast. My father was just a toddler when the CB&Q's Pioneer Zephyr, America's first diesel-and electric-powered streamliner, made its historic, one-thousand-mile, nonstop, dawn-to-dusk

journey from Denver to the "Wings of a Century" pageant at the Chicago World's Fair on May 26, 1934. He was too young to remember the crowds of people from Burlington and the surrounding communities that lined the tracks for a glimpse of the sleek, little silver train that bore a striking resemblance to an airplane. But he does remember that several years later, people gathered on the U.S. Highway 61 overpass near his house to watch the vista-domed Nebraska and Denver Zephyrs pass beneath them. Now Amtrak's California Zephyr, a less tony version of the original California Zephyr, glides past the Des Moines County Humane Society, built on the spot where my grandparents' and the Tinsleys' houses once stood. Now it is the only passenger train that stops in Burlington.

I remember that when I was three or four, Granny Parris and I rode the Mark Twain Zephyr from Burlington to Keokuk. Just north of Montrose, the tracks were laid so close to the Mississippi that when I looked out the window on the east side of the train, I saw nothing but water below. Had we not gotten off in Keokuk, we could have ridden through Hannibal, Missouri, all the way to St. Louis and back.

Though the Mark Twain wasn't discontinued until 1963, I never rode it again after 1960. The year that my father was furloughed from the West Burlington shops. "Old Eisenhower was running the country," my father explains. "The country was getting in bad shape, everybody getting laid off . . . 'bout like Bush." Because his unemployment checks were running out, my father accepted a transfer to the freight car shops in Havelock, Nebraska, and we lived in an apartment less than a block away. When Jamie and I heard the quitting-time whistle, we ran to the corner and picked out from the stream of men pouring through the gate our dad's loose-hipped walk and his brown hair, parted on the side and curled over in the front. Then we'd walk home with him. After just a little over a year at the car shops, my father quit, not because he had been called back to the West Burlington shops but because he and my mother were terribly homesick. Once back home, my father worked briefly as a welder making tractors for J. I. Case, Co. Seven months later, a boilermaker at the shops retired and my father was called to take his place—a job he held for the next thirty-one years. At the time of his retirement in 1994, my father

earned about forty dollars per hour—about fifteen dollars per hour in wages and about twenty-five dollars per hour in benefits.

As a child, when I asked my dad what he did all day, he'd answer vaguely, that he made trains. But sometimes he answered more precisely, saying that he took afternoon naps in boxcars or that he was one of the boilermakers who concocted the drink that bears the name of his craft. When our family went to the shop's open house when I was in upper elementary school, I was overwhelmed by the sheer size of the building ("ten acres under one roof," my dad said proudly) and all the people, machines, and tracks. But if he had shown me what he did for a living, I don't remember it.

My father answered to five whistles each work day. The first, the hurry-up-and-get-to-work whistle, blew at 6:55 a.m.; when the 7:00 a.m. whistle blew, my dad was on the job. The noon whistle called him to the sandwiches in his metal dinner bucket; the 12:25 and the 12:30 whistles called him back to work. When the 3:30 whistle blew, my dad came home. I heard the noon whistles when I was playing outside at lunch recess in elementary school: it was the sound of order, security, authority, stability. Then, I knew that my dad was working on the railroad, getting dirty in his big, heavy boots, hat, blue jeans or overalls, sometimes burning holes in his clothes, and using a bandanna as a handkerchief. If all our clocks stopped, we could tell time by the sounds of the whistles from the shops and the passing of the trains.

One of the benefits of having a parent who earned our bread and butter on the railroad was free train passes. I remember family trips to Lincoln, Nebraska; Denver, Colorado; Cheyenne, Wyoming; and Vancouver, British Columbia. Many times when I was in high school, my mother and I and sometimes one or both of my brothers got on Amtrak early on a Saturday morning and rode into Chicago's Union Station. Each time we marveled anew at the vaulted skylight above the old station's Great Hall, walked to the big department stores on State Street, the likes of which we did not have in Burlington, ate lunch at a cafeteria or the Italian Village, and came home in the late afternoon, with cheap, unusual clothing we'd bought in the bargain basements at Carson, Pirie and Scott or Marshall

Fields. (Here's one of the more memorable outfits I bought myself there: a short-sleeved, tan sweater trimmed with big blue buttons and sequined blue rickrack; blue-and-white-checked and cuffed bell-bottom pants; blue, platform oxfords.) John, a railroad aficionado even then, helped a conductor friend of my parents' collect and punch tickets. After my brother's work was done, we ate supper in the rocking dining car. About 8:00 p.m., the Zephyr crossed the Mississippi and eased into the depot.

In 1981, I left home for a teaching position in Omaha, Nebraska. A couple of times a year, I rode the train from Omaha to Burlington and back. The depots along the route offered incontrovertible evidence that passenger rail travel in America was continuing to decline. When I caught the train in Omaha, I didn't go into the once palatial, two-storied Burlington Depot. Many years ago, the focal point of this 1898 Greek Revival building had been a double-spiral staircase copied from one of Francis I's Renaissance chateaus. Each newel post had been topped with the bronze head of a Rocky Mountain sheep, a thoroughly western touch. The second floor had offered a restaurant, a lunch counter, a women's waiting room, a men's smoking room, a newsstand, and a ticket office. Twenty-eight pink granite columns, designed to break up the crowds, had supported the red-glazed tile roof of the portico. The pedimental frieze above the main entrance had been adorned with an ornamental clock and globe; classically draped figures, five on each side of the clock representing manufacturing, agriculture, industry, commerce, steam, electricity, enterprise, science, art, and literature attested to our nation's colossal ambitions and optimism at the close of the nineteenth century. Across the tracks is the smaller and once equally sumptuous Union Pacific station. When this building was completed in 1931, it was the United States' first Art Deco train station. Now it houses an excellent museum of railroading and Omaha history.

When Amtrak took over passenger service in Omaha in 1971, it closed the Burlington depot and moved operations into three trailers east of the grand building. That is where I bought my tickets and waited on one of the blue plastic chairs for the arrival of the eastbound California Zephyr.

In 1984, Amtrak built an Amshak, a utilitarian building, just a room, really, with even less character than the trailers, and moved its operations there. In recent decades, the gutted and pigeon-filled Burlington station has hosted farmers' markets, haunted houses, and raves. In 2005, On Track Development Company announced its plans to fill the building with condominiums, restaurants, shops, a spa, a gymnasium, a pool, and a grand staircase similar to that which graced the depot in its first three decades.

Between Omaha and Burlington, Amtrak stopped at depots in Creston, Osceola, Ottumwa, and Mount Pleasant, Iowa. Each depot was small and old and still in use, though in 2001, BNSF requested the demolition of the 1907 Osceola depot, a request that some Osceolans fought. The depot in Burlington was unique in that it was built in 1944 in the then trendy architectural style "art moderne." The cube-shaped building, the open floor plan, the flat roof, and the horizontal orientation was said to have expressed enthusiasm over technological advancements, high-speed transportation, new construction techniques, and other innovations. But when I arrived at the Burlington depot on my trips home during the 1980s and early 1990s, I could not detect enthusiasm for anything but neglect and decay. The huge windows were streaked and cloudy. Cascade-green paint flaked off the window and door frames. Stuffing spilled from the torn green plastic on the built-in sofas. Grier's, the restaurant where we'd eaten sandwiches while waiting for trains when I was a child and we took the train back and forth between Lincoln and Burlington, had been closed since the 1960s. The once grand hotels across the street from the depot had become shabby flophouses. The large, policed crowds of a century ago or the crowds that packed the depot during the Second World War had dwindled into a smattering of people catching the eastbound in the morning or the westbound in the evening.

When the West Burlington locomotive shops were closed and only a small-parts repair shop remained, when the Burlington was no longer made in Burlington but only passed through, many of the people in my

hometown and those of us who had once lived there and still love it felt that we had been jilted. A significant piece of our communal history and self-identification had been taken from us as had our largest employer for most of the past century and a half. We were angry and heartbroken. Before we could move on, we had to grieve, perhaps even retaliate.

On March 4, 2004, the city of Burlington filed a lawsuit in Des Moines County District Court, claiming that the BNSF had breached the 146-year-old contract between it and the city. The contract, formalized in 1858, established that the city would lease its "public trust" land on the riverfront to the B&MR at no cost. The only stipulation was that in exchange for the riverfront property, the railroad would "place their freight and passenger depots, machine shops, work shops, repair shops, and other necessary fixtures upon the accretions . . . or upon ground within said city" and that "the principal shops for the construction and repair of machinery, running stock, etc. [would] always [be] maintained in said city." The CB&Q challenged the contract in 1875, when the growing railroad sought to build its shops elsewhere. In the end, the railroad honored the contract, setting a precedent that it was bound by legal agreements between its predecessor, the B&MR, and the city of Burlington. The city rewarded the railroad's compliance with land for the new shops.

What the city was seeking through the 2004 lawsuit was a restoration of jobs and an annual payroll of $10 million or about 150 years' worth of back rent for the twenty-two acres of riverfront property. Scott Power, the attorney for the city, said that the lawsuit hinged on the fact that when the railroad eliminated jobs in Burlington, it made Topeka its principal shop, a clear violation of the 1858 contract. The city asked for a $1.34 million settlement and for the railroad to pay all legal costs. The strategy and the hope was that the lawsuit and compensation for the riverfront property would be so costly that BNSF would return jobs to West Burlington rather than pay the settlement and remain in Topeka.

On April 1, 2004, BNSF filed to move the suit to federal court in Davenport, Iowa, an appropriate request since the plaintiff and the defendant

are based in different states (BNSF is a Delaware corporation). The railroad filed a counterclaim alleging that the city had breached a 1985 agreement that stated that the railroad could use riverfront property indefinitely, as long as it was for railroad purposes. Furthermore, the railroad asserted that the 1985 articles of agreement superseded any previous contract, since the railroad "continues to use the granted real estate for 'railroad purposes' as provided in such agreement." BNSF maintained that "the West Burlington shops had not been the principal machine shops of the railroad for many years prior to 2003," though it failed to say where the principal shop had been located, nor would it reimburse the city for this earlier breach of contract. BNSF also filed to move the suit from U.S. District Court in Davenport to the Surface Transportation Board in Washington DC, an entity more likely to rule in the railroad's behalf, a request that was denied.

The suit went to a bench trial in April of 2006. August 24, 2006, federal judge Charles R. Wolle dismissed the city's claim as "without merit," since the city council-approved articles of agreement, an 1985 contract that supersedes all earlier contracts, states that the railroad could use the riverfront property as long as it was for railroad purposes but says nothing about maintaining its principal shops there. Wolle also dismissed BNSF's counterclaim for litigation expenses and attorney fees. Now Burlington is left with a legal bill topping three hundred thousand dollars (in 2006, the city budgeted sixty thousand dollars for legal expenses) and an empty shop complex. An appeal is unlikely, since city officials hope to secure the railroad's assistance in finding a use for the shops. But before a new tenant can take over the shops, should anyone want such an old and ungainly building in a city with too many empty factories and school or shop buildings, BNSF must clean up what the Iowa Department of Natural Resources calls a "grease lake" at the facility, a problem that the railroad has known about for decades.

Even if the lawsuit had been decided in Burlington's favor, I doubt that BNSF would have returned a single job to West Burlington. And if it had,

what of those in Topeka who depend on the railroad for their bread and butter? After reading several articles in the *Topeka Capitol-Journal* about that city's locomotive shops, established there in 1878, and about that city's railroading past, I couldn't with a clear conscience hope and pray that West Burlington would win the jobs at Topeka's expense. And, too, if the Burlington had won the lawsuit, BNSF might have retaliated by cutting the few jobs that did remain there. In the final document that it filed with the court in June 2006, BNSF claimed that it "could very well decide to relocate its railroad operations to a different location rather than pay the astronomical sums sought by the city for its continued occupation of the property." The Santa Fe station, about fifteen miles south in Fort Madison, Iowa, is a likely place for the railroad to go.

Nonetheless, I hope that the many thousands of people who earned their bread and butter directly or indirectly from the West Burlington locomotive shops feel valued and vindicated because of the lawsuit that the city filed on their behalf. I hope that the people of Burlington commit to restoring the depot and converting it into a museum that celebrates Burlington's railroading history, that examines the moral and economic forces that took the railroad from us, and that provides a place for communal grieving and healing, as the national Vietnam Veterans Memorial does for those touched by that war. I hope that in the course of this lawsuit, someone can figure out how to write an equation that balances efficiency and profit and loss margins against loyalty, community pride, and the economic well-being of a people and a place—ethical issues that affect far more than just the residents of a once thriving, now declining river town in southeastern Iowa. And perhaps someone can tell us how to prepare ourselves for the astonishing speed and frequency with which seemingly stable circumstances can change so abruptly and completely.

I no longer have family in Burlington. But when John and his family and my children and I meet there for a weekend, the first thing we do is head for the Mississippi. We walk along the wide river that we miss so, follow the tracks to the depot, and inspect the condition of the building

and locomotive number 3003, a steam engine on display at the riverfront park. We don't leave until we've watched a train cross the 1892 bridge and glide past or hiss to a stop at the depot.

On the July 4 weekend of 2003, Meredith and I drove to Burlington to meet Kim and my nephews, Matthew and Jonathan. After inspecting the depot, we walked to the nearby auditorium. A fountain of water sprayed into a cement pool; nearby, a little boy ran through the jets of water shooting from long, grated rectangles in the pavement. Meredith, Matthew, and Jonathan couldn't resist. Soon they were running through the water, too.

When the little boy started whimpering and rubbing his eyes, his grandmother got up from the bench where she had been sitting, walked to her car, pulled out a stack of small white towels, and set them on the bench next to her. "Help yourselves," she said to us.

Soon Betty and I were talking about the beauty shop she owned and for which she'd just done the laundry, how wise the city had been to build this park near the river, and who each of us was or had been related to in Burlington. Betty said that each of her siblings had left town long ago and were all doing better than she was, financially speaking. Then she ticked off the names of the businesses and industries that had laid off or moved out in the past few years, including General Electric, BNSF, Exide Technologies' battery factory, two grocery stores, and Montgomery Ward. A loss of eighteen hundred jobs in the county since 1996. Some of those who had lost their jobs had been her customers, as had many of their spouses. The backhoe plant, Case New Holland Global (formerly J. I. Case Company), was then planning to leave town when its lease was up at the end of 2004 or reduce its workers' pay and benefits if it stayed. Even Sheaffer Pen Company, a major employer in Fort Madison for almost a century, was planning to close early in 2006, its production transferred to factories in Europe and Asia, its administrative functions transferred to Connecticut and North Carolina. No one then suspected that General Electric would cut three hundred jobs—half its work force—in 2007.

"You can feel it in the traffic," Betty said. "There aren't as many people left and quite a few of the ones who are still here, don't have money to spend or any place to go. After work on a Friday when you're trying to get to the bank or the grocery store, you don't have to wait as long at a stoplight. When a train passes through, the lines of cars backed up at the crossing aren't as long as they used to be. Nowadays, you just get to places faster than you used to."

Four

Surrender

On a bright Saturday morning when both of my children were away—Meredith at an out-of-town debate tournament, Ian and his girlfriend at her family's celebration of her birthday, and each of my friends had other plans—I drove to Schramm Park State Recreational Area on the Platte River in southeastern Nebraska. A hike is my solution to whatever ails me and on that day, I wanted to hike on the oak-clad limestone bluffs overlooking the sand-bar-filled river channel in order to forget, at least for a while, that children outgrow their parents. During the thirty or so miles of interstate travel between Lincoln and the park, I was lost in thoughts of how life has and will continue to change now that my children no longer want or need as much of my time and energy as they did as

recently as last summer. For the past several years, I'd observed friends and acquaintances moving through this passage. One friend worked almost every waking hour when her only child left home. Another friend filled her evenings and weekends with good friends and good causes. Another began dating with gusto, eventually marrying. Another just grew old, preferring to preserve rather than fill absences. I suppose that I will do what I've always done when I seek solace: I will hike over prairies and woodlands, along rivers and streams, bird-watching, star-gazing, insect-watching, and botanizing.

When I turned onto two-lined Highway 31, I left my melancholy musings behind and turned my attention to the hilly farms and the brown, hawk-filled woodlands that I passed as I descended into the valley where the park is located. I was glad to be out on this crisp, sunny morning in mid-November.

Several pickup trucks were parked in the lot at the Ak-sar-ben ("Nebraska" spelled backwards) Aquarium. When I saw the bloody pelt and stony eyes of a whitetail deer in a truck bed, I remembered that November 13 was the first day of the 2004 deer-hunting season. Hunters came to the official check station at the aquarium to register their kill. Though hunting was forbidden at this state park, hunters with loaded guns might be roaming the adjacent land. Before heading for the trails, I stopped in the lodge to inquire if I would be safe hiking there. A line of hunters, most of whom were dressed in either camouflage or tan dickey overalls and hunters' orange vests and hats, snaked out of the registration room and into the lobby. When I saw that the man who entered the building behind me had dried blood on his belly and left thigh, I didn't need any words of advice: I would forego my hike. Before going home, I'd look over the displays of Nebraska's freshwater fish, turtles, and frogs in aquariums and terrariums lining the walls or stuffed and mounted overhead—a poor substitute for the brisk and solacing hike that I craved. If this day was to be well spent, I'd have to surrender my expectations and take pleasure in what was before me.

On the opposite side of the lobby from where the hunters waited was a cluster of about a dozen people. A woman with short, thin white hair stood behind a long, folding table. To her left, a clothesline was strung between two chairs; white mesh bags were clipped to the line with plastic clothespins. Some of the bags hung flaccidly but others were lumpy and moving. Whatever these people were doing, it seemed more interesting than watching hibernating turtles or game fish drifting and turning in aquarium water. I joined the small crowd.

The woman behind the table held a tiny gray and white bird in her left hand and a pair of red-handled pliers in her right hand. She took a lead-gray strip of metal from one of the wires stretched across a long, scuffed white board laying on the table and copied the numbers on the strip into a ledger. A man in a Minnesota Vikings cap who addressed the woman as Martha, asked her about the best mix for his bird feeders. She answered gruffly that a mix of cracked corn, white millet, and black-oil seeds would take care of anything. The bird seemed resigned as Martha wrapped the strip of metal around its leg and tightened it with her pliers. "Here, Wayne," she said to a fair, stocky boy of about eight. Wayne reminded me of Ian at that age. Until his early teens, Ian was always willing to do anything outdoors with me—hike, camp, fish, visit nature centers. He would have willingly gone to a bird-banding demonstration, looked over the fish in the aquariums and then, undeterred by flying bullets or arrows, headed for the bluffs above the river. While Meredith had never been as enthusiastic about nature, she had hiked with me until she, too, entered her early teens. But now she prefers spending a Saturday afternoon at a movie, bookstore, or coffee house.

Wayne held the bird just as Martha had, back to palm, first and second fingers across the bird's breast, and stepped out onto the patio. Through the glass, I saw a flutter of ascending wings.

Martha walked to the clothesline, unclipped a bag, pulled the zipper, and lifted out a little brown bird. "Tree sparrow," she announced. "Tree sparrows nest in the boreal forests and are only here in the winter." She turned the bird over so we could see the dark spot on its breast. "I've

banded about six hundred tree sparrows. I banded one in my backyard that I got back six years later in the same spot." She turned to the blond woman sitting at the end of the table writing in a notebook. "Identifying features: line on eye, central breast spot, rufous cap, two wing bars." Martha held the sparrow upright, its breast facing the blond woman, its head secure between her first and second fingers, and spread its right wing. The blond woman snatched glances at the bird as she wrote in her notebook. Martha cinched the band and handed the bird to Wayne, who went to the patio and released it. I took a pen and notebook out of my purse and wrote: "Cavalier. Martha handles the birds with such ease that it seems nonchalant. Cavalier."

Stitched to the arm of Martha's worn, dark blue coat was a round arm patch that read "Nebraska Ornithologist's Union." A red-and-white-striped Cat-in-the-Hat scarf hung from her neck. Martha unpinned another mesh bag on the clothesline. "Nebraska is an overlap zone for many eastern and western species: juncos, towhees, robins. The reason we have fewer eastern species of robins in this part of the state is light pollution." The bird in the bag pulled and fluttered. "It spreads from Council Bluffs all the way to Grand Island. In the panhandle and Halsey National Forest, you'll see both eastern and western species, but not so much around here. Light pollution affects the goldfinches, too. Not as many goldfinches in eastern Nebraska as there used to be. They swing west to avoid it. Fort Kearney is a magnet for goldfinch migration." Martha unzipped the bag and drew out another little gray and white bird, an abundant regular at the bird feeder in my neighbor's front yard.

"Black-capped chickadee. You'll see these anywhere that the trees are big enough. It's a resident bird. That means that it's here year-round." The woman at the end of the table flipped through a field guide. I wrote in my notebook: "Tiny, delicate beak. Enormous head. Why is it called a black-capped chickadee rather than a white-streaked chickadee?" Martha fanned the bird's dark wing feathers so we could see the white edging. She clamped the band onto the chickadee's leg and handed the bird to Wayne. Wayne waited at the door until a group of three deer hunters

passed through. Then he stepped out and gently tossed the bird into the air. Wayne was fortunate to be learning at such a young age how to surrender that which he once held.

Martha told stories about exotic birds, such as the Eurasian collared-doves that she banded at a feeder in Brady in southwest Nebraska several years ago or a curve-billed thrasher, a desert species never before banded in Nebraska until Martha did so. I understand the impulse to be the first to see or name the exotic. But there was nothing exotic about the birds that Martha was banding at the state aquarium. Why would someone spend a perfectly good Saturday morning banding common, everyday birds? And why were the rest of us spending a perfectly good Saturday morning watching her?

Martha drew another gray and white bird from a bag. "White-breasted nuthatch. It already has a band." She peered at the band through a magnifying glass. "Number 90421," she said as she wrote the number in the ledger. "If you find a bird with a band, always report it to the National Biological Service's Bird Banding Laboratory in Laurel, Maryland. Tell them where and when you found the bird and whether it's dead or alive." She held the little bird with its back down and legs up as she talked. Despite this awkward position, the bird was calm. "This is important because the information gathered from banded birds helps ornithologists study everything from life span to dispersal to migration to travel speed, reproductive success, population growth, effect of pollutants, habitat loss . . . I've got their telephone number right here." She pointed to a stack of handouts at the end of the table. "The band will also tell you where to call." I wrote in my notebook: "Do bird banders start watching for bands instead of birds?"

Martha looked around. "Where's Wayne?" Wayne's grandmother pointed to the window behind Martha. Wayne and a woman in a brown shirt and pants with patches like Martha's sewn onto her sleeves were extricating birds from what looked like a large badminton net, putting them in mesh bags, and clipping them to a clothesline. "Would you release this?" Martha asked as she placed the nuthatch in Wayne's grandmother's

hands. The line of hunters had shrunk and no longer spilled into the lobby. Curiously, only one of the many hunters entering or exiting the building had stopped to watch as a bird burst forth from between Wayne's or his grandmother's clasped hands or to see what we were doing.

Martha unclipped another bag and reached in. "Slate-colored junco," she announced as she took a band from the white board and copied the numbers into her ledger. When she turned to face us, she had a tiny gray curl of a feather stuck to the end of her nose. "Slate-colored junco is a subspecies of dark-eyed junco. See the white outer feathers?" She fanned the tail feathers and we moved in for a closer look. "Thoreau called these snowbirds because they arrive about the time of the first snow. Usually, we've had a snow by now." She turned and squinted at the sky through the big window behind her. As Martha moved, the gray feather attached to her nose waved. Maybe this bird-woman was so possessed that she was gradually becoming the object of her devotion, one feather at a time. Soon there would be a beak where lips had been; her eyes would move to the sides of her head; her fingers would multiply and elongate into primary (wingtip) feathers. "This bird's summer or breeding range is in the coniferous forests of Canada and Alaska," Martha said. The feather attached to her nose fluttered. The junco opened and shut its mouth. "It comes down here in the winter. A lot of people think that birds migrate to escape the cold. Not true. Birds migrate for food." Martha passed the bird to Bird-feeder Man to release; then, she flicked the junco feather off her nose.

Wayne and the apprentice entered the building, each carrying lumpy mesh bags. "We've got a goldfinch, a red-bellied woodpecker, some sparrows, and a titmouse," the apprentice said as she clipped the bags to the clothesline. Red-bellied woodpeckers are common where I live. The decaying silver maple in my backyard is home or at least a popular buffet spot for the woodpeckers in my neighborhood. Sometimes, when the windows are open, I hear a drumming or a series of melodious barks. I go outside, stand beneath the silver maple, and watch the woodpeckers hanging from the gray, shaggy bark with their sharp toes, their stiff,

dark tail feathers lending support as they drill holes and swallow insects. And once, about four blocks from my house, I found a dead, red-bellied woodpecker. I rolled the bird over on its back with a stick and studied its black-and-white bars, the red head, the blush of pink on its gray belly, and the band on one of its legs. Then, I didn't know that I should have recorded the information on the band and reported it.

I hoped that Martha would choose to band the goldfinch next. Though I've seen goldfinches jostling each other at bird feeders, undulating across fields, or rising from clumps of thistles or sunflowers in a sputtering explosion of gold, I've never seen one up close.

"American goldfinch," Martha said as she pulled a sparrowish bird from the bag. "Ornithologists call them AMGO. A-M-G-O. That's the first two letters of *American* and the first two letters of *goldfinch*." Rather than displaying the brilliant lemon-yellow feathers, black forehead and wings of the male in breeding plumage, this goldfinch was olive-gray-brown. In fact, it was barely gold-tinged. When I first realized that not all goldfinches could meet my lemon-yellow expectations, I began seeing them everywhere—not just against the white backdrop of snow where their plumage is easy to see but in bright sunlight as well.

"They slide within their range," Martha said, "usually past the snow line, so they're not true migrants. Their numbers are down because of West Nile fever. Nuthatch numbers are down, too. But we've seen fewer cases of the disease this year than the past few, so maybe we've turned a corner. West Nile is worse in states like Nebraska with heavy irrigation." I wrote in my notebook: "Well-watered corn or goldfinches? No contest."

"AMGO are yellow in the summer but drab in the winter. This bird hasn't completed its juvenile molt." Martha splayed one of the bird's black wings. "You can tell a lot about the sex and age of a goldfinch from the pattern of white on the tail feathers. Females and younger males don't have as much white. See?" I looked closely at the white splotches. This is less compared to what? Martha banded the goldfinch and handed it to Bird-feeder Man to release.

Martha explained that people band birds in order to provide data for scientists. But I suspect that there's more to it than that. Catching birds out of the sky. Being the only human to have held that bird. Seeing a bird up close, splaying the wing feathers, looking it in the eye rather than observing it through binoculars or from a detail-blurring distance from a car or living-room window. Banding allows one to attach one's band to the bird's leg, a band that it will carry for life, symbolizing a one-sided, till-death-do-us-part marriage. Banding allows one to possess, even if only for a few moments, a handful of wildness and then to surrender it. Is it hard to release a bird that you've held in the palm of your hand?

"Eastern tufted titmouse," Martha said, as she lifted a chattering, complaining bird from a bag. The handsome little bird had a sharp, bold dark-gray crest, a white face, and a black, hourglass-shaped patch between its eyes. When it looked at me with its big black eyes, I fell fast in love with it, from its gray crest to its rusty flanks. This bird was spry, feisty, anxious, combative, the first bird of the morning to protest its treatment. Does it ever lower its crest, I wondered. "It's in the same family as the chickadee. Lives here year-round," Martha said. "Because of a reliable food supply at winter bird feeders, this bird has extended its range westward into eastern Nebraska. It's not migratory. It stays all winter and flocks with chickadees, cardinals, and juncos."

I asked Martha how she knew as much as she did about birds. She turned and looked directly at me just as the proud little titmouse had. "I've taught ornithology for thirty-five years and I have a photographic memory. Would you like to release this bird?"

I nodded. "Here's the birder's grip, she said. The bird scolded and bickered as I placed my first and second fingers around the back of its neck and over its white breast. This bird was as light as a handful of dust or shadow or breath. "The bones are hollow, so be careful," Martha warned. The birded jabbed at my fingers. "The beak is powerful. It's short and sharp. Don't let it break your grip."

"Yes, powerful," I said, fearing that the pecking would cause me to release the titmouse in the building. I covered the bird's breast with my

left hand; it grabbed some of the loose skin on the back of my hand and pulled. Wayne opened the door for me. As I walked across the patio, I felt the bird's heart fluttering against my fingertips. When I was a child, my mother often told me that a bird was more likely to come back if you held it with an open rather than a closed palm. Then, I thought that she was referring to the wild, injured, or orphaned birds that our family took in, tended to until they were mended or grown, and then released. But as I was leaving home, a process that took about a decade, with three departures and two returns, and when I had children of my own, I realized that the bird in the open palm was also a symbol of my mother's idea of how to parent. Let them go when they want; let them return when they want. Don't grasp. Now, I know that she was talking about birds and children. To allow a creature to perch on one's open palm requires surrender, deep and constant, renewed moment by moment. The bird or the child senses the surrender and knows that it's free to depart and return when it pleases. And it is to the surrender of an open palm that a child or a bird is more likely to return.

I uncurled my fingers. The titmouse released its hold and lifted its pointed head. For perhaps a half minute or so, it perched calmly on my open palm. I thought of its hollow bones, its pulsing heart, its tiny brain, its strident protests. Would it retain a memory of my amateur grip, my loose skin, my open hand as it flitted into the wooded hills above the Platte? Certainly I would retain a memory of the joy of a wild, winged creature resting in my open palm.

"There's the sun," I coaxed. I lifted my hand and a burst of wing beats carried the bird into the cloudless sky.

Five

Thirty Shades of White

Thirty Shades of White

I've read that Eskimos can see and name thirty distinct shades of white. I suppose that the purpose of this statistic is to convince those of us living in technological, urban places at the turn of the millennium that our ability to differentiate stimuli is crude compared to that of those who live in more natural environments. I believed that until one afternoon last week when I was resting my eyes, blurred from several hours spent reading student papers. As I lay on the couch with my eyes closed, I heard and named the objects whose movements had created the approaching, cresting, and retreating waves of air molecules that entered my ears and vibrated my eardrums. Rhythmic taps, the fourth and final punk in each

series carrying an exclamation point: Glen across the street, hanging Christmas lights. Tinkles littering the air: wind chimes on the house immediately north of mine. A crescendoing roar, a rough idle, an abrupt cessation: the old Grand Am that the seventeen-year-old girl who lives in the house immediately south of mine inherited from her mother. Sharp, high-pitched, overlapping, *r*-filled peals: the five schnauzers that live with her. A closely set double clatter, the second looser than the first: my cat Cletis jumping onto and off my back gate. *Shoooo-click*: the door of the van belonging to the woman who cleans the house with the wind chimes. An up-high scratching: house sparrows who nest beneath my eaves. The metallic clank of the gate latch, the creak of the moving gate, the clank of the gate latch: Ian walking through. A gravelly, dragging rumble: the unmuffled engine of the rusty Ford Escort that belongs to my neighbors two doors down. The clank of the gate latch, the creak and cement-scrape of the gate opening as far as it will go: Meredith riding through on her bicycle. A clean, fast *rurrrr*: my seventeen-year-old neighbor's mother backing down her driveway in her new Grand Am.

When I listen to my neighborhood, I hear something as complicated and nuanced as the Arctic terrain, mottled, graded, sprinkled, brindled with thirty or more shades of white.

Good Graffiti

The bike and pedestrian path through Antelope Park dips beneath A Street and emerges near the zoo. It's a dangerous place. Because the path not only descends but curves sharply, you can't see if a small herd of sleek people on whippet-thin racing bikes are rounding the curve at the same time you are, though from the opposite direction. "Coming through," I shout, before I begin my descent. A fraction of a second later, the tunnel walls respond, "Coming through." It's not a clear, separate echo, but a reflected sound that collides too quickly with the original.

Sometimes Antelope Creek, which runs alongside of the path at the bottom of the tunnel, is but a trickle. That would be a good time to cross the almost dry creek bed and paint graffiti on the opposite and more visible wall. And good graffiti is what I need. I have read "Bonecrusher 6.5.1"; "Trust Jesus"; "Loco babies are in my heart, but I wish in my arms";

"Go Big Red"; "Think for Yourself" (the letters encircle a peace sign); and dozens of pairs of names, each pair linked by a plus sign, so many times that I don't see them anymore. But one day as I approached the tunnel, I heard hollered refrains from Handel's Messiah. "Haaaaall-a-lu-jah! Haaaaall-a-lu-jah! Hallelujah! Hallelujah! Hal-lay-ah-lu-oo-jah." Walking in the creek bed were three boys of about nine or ten years of age. The tunnel walls rang with their shouted scrawls.

Deboned

When I was nine or so, my Great-uncle Buster, who lived far away in Oklahoma, came to Iowa, as he did every August, to visit family. On this particular occasion, Buster wanted each of us to take a turn speaking into the microphone connected to his tape recorder. When it was my turn, I told about what had happened that day when Jamie and I were playing in Great-aunt Pertsie's backyard and one of the chickens or perhaps the rooster became agitated and chased us. We ran for our lives, all the way to the house. I don't remember any more of the story than that. But what I remember in stunning clarity is that when Buster played the tape back to us, I, in the presence of great-aunts, great-uncles, second cousins, brothers, parents, and grandparents, was so embarrassed that I hid my face. It wasn't my inability to find the word I thought that I wanted to describe the chicken's behavior that had embarrassed me ("The chicken was . . . the chicken was . . . flustrated," I had said), but it was the sound of my own voice. Or more accurately, I had been embarrassed by the sound of a voice that resembled mine.

In *Noise, Water, Meat*, historian of sound Douglas Kahn writes that one hears one's own voice "conducted from the throat and mouth through bone to the inner regions of the ear." And so, as the voice is produced in various regions of the body, it is propelled through the body, and "its resonance is sensed intracranially." In other words, the speaker hears the vibrations of her voice carried through the air and her bones, and so she hears her body in her voice. But others hear only the airborne vibrations. A deboned voice, Kahn calls it. The voice speaking from within Great-uncle Buster's tape recorder was legless, rootless, exempt from gravity's

pull. It was so high, hollow, and uncertain that I could not trust the words it was speaking or whom it presumed to be. The voice speaking from the machine more closely resembled cubes of white meat packed in a tin can than a backyard chicken cooked whole—skin, flesh, and bones—and served on a platter.

Even now, when I hear my deboned voice, I want to hide my face.

Night Sounds

Sometimes I'm awakened at night by sounds I can't explain. Pops. Cracks. Thumps. Whimpers. Knocks. Yowls. Fragments from dream talks. ("I want to go in the circle" or "Because you are responsible . . .") With two children, two cats, a dog, and very close neighbors, these sounds could be external. Yet they feel self-made, as if my dreams are too loud to be contained inside my head. This morning, for instance, I was in the midst of a nightmare about losing my memory while trying to exit a shopping mall when I heard one short, cup-shaped blast—a car horn or trumpet. It did not seem like the sound came from a car outside, though the schnauzer owners have on several occasions honked their horns late at night or early in the morning. It sounded like whatever made the blast was in my kitchen.

There is another night sound whose origin, whether from within or without, I cannot determine. Occasionally, when I am gliding over the threshold between wakefulness and sleep, a disembodied voice jolts me awake. It is the silvery, melodious voice of a woman who is forever twenty-seven, slim, agile, busy in the world, her face unlined by once-and-for-always decisions. This voice, once the voice of my mother, once my own voice, comes from above, repeating my name like a mantra until the syllables unhinge. I am all ears, waiting to hear what this voice is calling me to.

Winnowed Out

As I walk north past Randolph Elementary, I pass through a medley of barking dogs; soccer in the street; hissing, spitting lawn sprinklers; the whoosh-whoosh of the motor traffic on Randolph Street; and a man on a ladder scraping paint. As I near the white bungalow in the middle of the

block, a muted sound, that of a piano, grows louder, clearer. When a hammer hits a steel piano wire, the wire vibrates, causing the surrounding air to compress and expand, the condensations and rarefactions weakening, as they travel through the living room, out the front door, across the porch and yard to where I stand on the sidewalk. I wish that I could take a seat in the living room or on the porch of the white bungalow so I could hear these vibrations with less competition from others. Or if I must remain on the sidewalk, I wish that I could spin knobs, squelching the sounds of the street and amplifying the sound of the piano—something akin to the way my eyes focus on a nodding lady's-tresses orchid among the prairie grasses or a single face in the crowd.

Usually, I cannot name what the pianist is playing. I just know that it is played passionately and proficiently. What matters as much is that this is not reproduced, machine-driven music like the country hits from Froggy 98.1 that blare from every third garage on a warm Saturday; the earth-and chest-penetrating thump and rattle of a bass-heavy car stereo, a moving act of aggression; the bland background music that accompanies stories of love or crime on blue TV screens and that issues from almost every living room on almost any evening during open-window season. The piano music is ephemeral, airborne art, quietly there, dissipating quickly. It is easily ignored by those who haven't the ears to hear it.

Once I arrived at the white bungalow just in time to hear the spiraling notes at the beginning of Chopin's Valse in D-flat Major. When I was in high school, I practiced this waltz that I love so much, but never achieved the lilting, dizzying, three-quarter time that the composer intended and that the pianist in the white bungalow has achieved. I stood on the sidewalk and listened to the waltz in its entirety while the barking dogs, the soccer players, the hissing sprinklers, the steady traffic on Randolph Street, and the paint-scraping man waited with caught breaths.

The Sound of a Thousand Ant Tongues Lapping

When Doug, the fix-it guy, removed the forty-five-year-old plastic wrap-around from my bathtub-shower stall, he exposed a colony of black ants

living in the damp wood on a crossbeam above where the soap holder once had been. "This is why they don't put windows in showers anymore," he said. Doug was to replace the damp wood of the window frame and install a new wrap-around. But with his discovery of the ant metropolis, the job would take an extra day since first he had to kill the ants and replace the rotting wood in the wall void.

Doug left and returned with a spray can of Ortho Ant-Stop and shut the bathroom door. *Puzhzhzh*. *Puzhzhzhzh*. His boots clumped in the bathtub. *Puzhzhzhzhzhzh*. After he left for the day and after the insecticide cloud had settled, I inspected. The floor of my bathtub was strewn with crumple-legged ant corpses. Some ants were in their death throes, trying to drag themselves forward, falling, and dragging. Some were still in the wall, climbing over damp wood and dead bodies. I was edgy. Though these ants had been hidden from my sight, surely they had not been silent: they had probably made gnawing sounds as they chewed out the space for their nest, courtship calls, cries of aggression, celebratory songs, shrieks of pain, or sighs of contentment as they crowded together for warmth on a sub-zero night. How could I have been deaf to the sounds of many hundreds of ants as I scrubbed the bathtub or dried myself off after a shower? What dullness had kept me from pressing my ear to the wall?

Experts say that some ant sounds are audible. University of Kentucky entomologist Mike Potter says that if one knocks on the wall where ants are nesting, one will hear them respond with a rustling sound that resembles crinkling cellophane. In *Journey to the Ants*, Bert Holldobbler and Edward O. Wilson say that in the presence of an enemy, some wood-burrowing ants rap their heads on hard surfaces. The vibrations thrum through the substrate to nest mates who "hear" the warning through their feet. Human ears can hear the faint rapping, too. Likewise, an ant can make high-pitched rasps by rubbing a scraper on its waist against ridges on its abdomen—stridulations like those made by crickets, grasshoppers, and locusts. If one grasps an agitated ant with a pair of forceps and holds it close to her ear, she should be able to discern faint squeaks. Yet other ant sounds are heard only by experts with the right amplification equipment.

Holldobbler, Flavio Roces, and Jurgen Tautz found that when some leaf-cutter ants find a desirable leaf, they communicate the nutritive value of the meal to other ants through vibrations that pass from their stridulatory organs, through their buzzing jaws, and onto the leaf surface. The higher the quality of the leaf, the more intense the vibrations transmitted, and the more emphatically the leaf trembles and speaks.

An ant is about one-millionth of the size of an adult human. I suppose that many of their smaller sounds are still undiscovered by entomologists. For instance, Holldobbler and Wilson say that worker ants lick the queen ant's body so that they can smell like her, which provides them with a split-second method for identifying those who belong to the colony and those who do not. What is the sound of one thousand ant tongues lapping? How can I bear knowing that so much is near at hand, yet beyond my ken?

The Music of the Spheres

Pythagoras linked music to the motion of the spheres. He supposed that just as the movement of earthly objects through the air—say, a sparrow or an eagle, a hurled spear or frying pan—produce a sound according to their size, shape, and speed, so too do the ten celestial spheres (i.e., the five planets, the sun, the moon, the fixed stars, the earth, and the counterearth, the latter a body he supposed to be under the earth that moves parallel to it and is invisible to humans). Spheres that are closer to the fire at the center of the universe orbit more slowly and produce lower tones; spheres farther from the fire orbit faster and produce higher tones. Pythagoras reasoned that because the celestial bodies are huge and many and their revolutions so rapid, they generate an immense sound. But this was not cacophony. In his summary of the Pythagorean position, Aristotle wrote that the speeds of the heavenly bodies "as measured by their distances, are in the same ratio as musical concordances . . . [and so] the sound given forth by the circular movement of the stars is harmony." A delightful ninefold harmony, to be exact. Though we humans are born and die with this loud and constant music in our ears, we never hear it. Perhaps, as Aristotle supposed, this "noise exists in the very nature of

things, so as not to be distinguished from the opposite silence." Or perhaps we don't hear it because the sound is too exquisite and rarefied for our ears. Nonetheless, on two different occasions, I have caught "aural glimpses" of features of the music of the spheres.

Once Ian, my parents, and I were having a pleasant lunch in a restaurant. Suddenly, our eating and talking was interrupted by a thud-shake and then, silence. Every fork and conversation in the restaurant was momentarily suspended. The young manager stepped into the middle of the dining room to tell us that a faulty air-conditioner or generator had suddenly shut down and that he'd already called a repairman. Until that jarring moment, we diners had been unaware of its roar or that our conversations had been shouted instead of spoken. What awaits us should the engine driving the universe's harmonious hum ever stop?

The first time that I was aware of hearing the music of the spheres was on my first date with Andy. One Wednesday evening, after he cooked dinner for me, Andy took me to a charismatic Catholic worship service. The fifty or so worshipers sang songs that I did not know and raised their hands above their heads. I watched, uncertain how to respond. Then, I worshipped in an anomalous Methodist church where the pastor delivered provocative sermons filled with the earthy promises and exhortations of liberation theology. Before that, I had worshipped with some off-brand Baptists, who found many opportunities for charitable service within blocks of their church. Yet despite this theological liveliness and backyard benevolence, in both churches, we plodded through eighteenth-and nineteenth-century hymns that kept our eyes and hands tied to the hymnals.

The words and melodies of the songs sung by the charismatic Catholics were simple and repetitive, freeing them to move, lift their hands, shut their eyes, and improvise. They sang for joy as they queued up for bread and wine. After everyone had returned to their folding chairs, they sang with even more gusto, I, too, raised my hands and shut my eyes as I sang: "Come Holy Spirit, hear us calling. Come Holy Spirit, hear us calling." Andy clasped my raised left hand; the woman on my

right clasped my right hand. Everyone in the room was linked, hand to hand, singing and swaying. Then, God arrived, though not with the soft sigh to which I am accustomed. Instead, I heard a tinkling like gold coins falling and accumulating. The guitarist stopped playing. Here and there people abandoned the words and melody that they had been singing and ventured forth, their voices scattering, scattering, as if blown. Then we spontaneously moved toward a golden harmony, revolving around a fiery, unworded center.

Caged

When Ian was three and four, we spent a lot of time in parks. On rare occasions, we went to Panzer Park next to busy, four-lane North Twenty-seventh Street. This park had outdated playground equipment, but it was always full of kids and it provided a break from our haunts. While Ian played, I usually sat on a bench and read.

On one occasion, I felt too distracted by the noises around me to give myself over to the text. Besides what I craved more than a good story was silence or more accurately, quiet. But with growling traffic, clattering freight trains, a street crew tearing up pavement, a little girl pleading for fairness, a creaky merry-go-round, and my son periodically shouting "Watch this, Mom!" silence seemed impossible. I closed my book and shut my eyes. Again and again I tried to make my retreat. How could I find silence without silencing? Should I rise above or drop below the sounds? Should I go around them or through them? Was there even such a thing as silence? In 1951, the composer John Cage went into an anechoic or sound-free chamber used in acoustical research at Harvard University to experience silence. He said that he had "literally expected to hear nothing." But instead he heard the high whistle of his nervous system and the low throb of his circulating blood. "Try as we might to make silence, we cannot," he concluded. In Cage's daring 1952 composition 4'33", the performer makes no intentional sounds during the four and a half minutes that she or he sits at the piano. But this silent frame teems with unintentional sounds—the performer turning the pages of the score, the members of the audience shifting in their seats, rain hitting the roof, the whistle and

throb of each person's nervous and circulatory system, air forced through vents, irate members of the audience leaving the concert hall. Even if I could have silenced the people and the machines on that day in Panzer Park, I still would have heard unintentional sounds: the wind riffling oak leaves, the gentle *poooo* of each of the dozens of unfurling, straplike ray flowers on hundreds of dandelions, microbes devouring a dead squirrel, radio signals from deep space, electrical impulses flowing at lightning speed through a long chain of neurons from my inner ear to my brain, the roar of air molecules in motion, and the music of the spheres and the spores. What Cage's experiment teaches me is that there is no objective dichotomy between sound and silence. One may choose to hear sound, which is always there, or one may divert her attention away from it. "Silence is not acoustic," said Cage. "It is a change of mind."

So in Panzer Park on a summer day in 1988 or 1989, I surrendered to the noise-saturated air. I became porous, a sieve. Slams, rings, flutters, barks, plops, tseeps, thwonks, pulses, *pooooo*s, crackles, whines, sloshes, whirs, tinklings, rasps, and roars went in one ear and out the other. There, in the oncoming rush of noise against noise, I became a still, an indiscriminating, ear.

Synesthesia

Midway on the long drive between Lincoln and Burlington, Meredith drops a tape of the violin pieces that she has been working on the past few months into the tape player. She sits quietly during Vivaldi's Concerto in G Minor. But when she hears the opening notes of Bach's Concerto for Two Violins, she rests her left hand on her left thigh, curves her hand into playing position, and lets her fingers fly. When she hears the slow, stately opening notes of Corelli's La Folia variations, she asks for my arm. I know the routine. I place my right hand on her left shoulder. She positions her left hand on my upper forearm, just below my elbow. Her left fingers depress the skin on the inner side of my arm as if it were a fingerboard. She pushes and pulls an imaginary bow with her right hand.

Meredith's movements seem instinctive, but they are not. She has spent all but the first four years of her life taking two or more lessons per week,

practicing daily, listening to recordings of her pieces, attending orchestra rehearsals, group lessons, summer music camps, both near and far, and performances. The movement in her left hand—how it shifts and slides; how it trembles with vibrato; how her fingers skitter on thirty-second note runs—is highly trained and automatic. When she is practicing by herself or when we play duets, with me playing my flute, I am dull to the wonder of her proficiency. But with a slight shift in context—Meredith picking up a violin at a yard sale and playing Handel; Meredith playing with a bluegrass band at a church festival when the old fiddler handed her his violin; Meredith using my arm as a fingerboard, since the roof of our car is too low to accommodate full bow strokes on her real violin—I see and see again the eloquent precision of her movements.

As we continue east on U.S. Highway 34, Meredith plays and I, for the most part, keep my eyes on the road. When she reaches the La Folia variation with the delicate pairs of slurred sixteenth notes, I feel the quick flutter of swallows diving and rising too close to my face; I see picots, the decorative loops on the edge of lace. I am delighted by the depth and texture of this music, by the blending of my senses. I hear and feel and see the music. I am slurred and fluttering swallow wings, tatted from the tip of a violin bow.

After the final, held note of the variations, Meredith stops the tape. She opens the glove compartment and rests her copy of a nameless, composerless étude on the glove compartment door and against the dashboard. This is an irritating exercise with its seemingly illogical key and meter changes and unsettling number of accidentals. Though I've helped her with the rhythms in this piece, I can't remember how it sounds. Nor do I want to. Meredith's left fingers move on my arm; her right hand bows. I can discern the rhythm through the duration and the release of pressure, an uneven pulse, but I cannot name the notes she is playing or hear the correlating sounds. That I received the La Folia variations through any sense other than hearing was an illusion.

As Meredith presses the rhythm and melody of the étude onto my skin, her face concentrated, I am struck by the intimacy of this exchange. It is

as if our neural workings are exposed. I imagine that the impulse to move her left fingers originates in the front portion of her brain beneath her dragonfly hair clip. This impulse descends through the neural pathways in her spine to those muscles in her arms and fingers responsible for executing the movement that produces the sensation of a double stop on my arm. The silent music that I receive through the sensory corpuscles in my skin travels through my nerves, enters my spine at the cervical cord, ascends to the medulla, and synapses in the thalamus. From there, it ascends to my cerebral cortex where I make meaning of these tactile sensations. Or attempt to make meaning, for I can neither decode nor interpret them. Rather, I am utterly passive, a mere receiver, the paper telegraph tape on which the dots and dashes are being embossed. Yet this message that Meredith is pressing into my arm demands a response: I want to create a circuit. I want to be Helen Keller receiving the world through the palm of my hand and then "talking" back to the world: my fingers skittering against its palm. I want the stippling on my skin to present a bright picture: a rose, a star, a heart, a snake. I want to translate the movement on my arm into sound or something like sound and tell Meredith what I have heard. "You lost control of the high A-flat," I might say. Or "You played those staccato eighth notes so cleanly, so evenly today." Or "I could listen to you play this forever."

If I learn to receive silent music through my skin, perhaps I can mingle or cross-reference my other senses. Then as I drive along Highway 34 on an early May morning, one sense will trigger a response in another. Then I'll see the funnel-shaped fragrance of wild plum blossoms wafting through my open windows. I'll feel the stinging iridescence of grackles on a lawn. I'll hear the turquoise-grayness of my car engine working. I'll taste the milky, sweetness of the mackerel sky.

Six

Pilgrimage

One June while I was driving Meredith to church camp near Tonganoxie, Kansas, a little town between Lawrence and Kansas City, Kansas, I was diverted from the direct route by road construction. Somehow I got lost north of Leavenworth. In the process of finding my way again, I noticed a road sign directing me to Amelia Earhart's birthplace in Atchison. I was surprised to learn that she had been born and raised on the outskirts of my home territory. Meredith and I were already late for camp, in fact had missed lunch and would have to hurry if she was to ride the bus with the other campers for an afternoon swim at the Tonganoxie public pool. There was no time that day to tour Earhart's point of origin in the world, even though the appearance of a sign directing us there seemed to suggest that we should make the time.

Shortly after I got lost in Kansas, I was preparing a lecture about the art of biography that I would deliver to a group of graduate students later that summer. By way of example, I decided to pick a famous person, one that everyone in my diverse audience would recognize, and speak of how various biographers had presented that famous person's life. Who better than Amelia Earhart? Along with Joan of Arc, Mother Theresa, and Princess Diana, she is one of the most widely recognized women in the Western world. In preparation for my lecture, I hauled home half a shelf full of Earhart biographies from the branch library near my house and read all or parts of each. I had not expected to find this celebrity so engaging, so dazzling, so complex. Nor had I expected to find such a distance between the life lived and the legend. Why hadn't Earhart been one of my childhood idols? I wondered. Then, my heroes were real writers (Louisa May Alcott, the Brontes), fictional writers (Jo March from *Little Women*), and an assortment of passionate people in various fields (Annie Sullivan, Marie Curie, Jane Addams, Joy Addamson, and Albert Schweitzer). But I suspect that if I had known about Earhart, she would have shot to the top of my list of heroes.

After my foray into written accounts of Earhart's life, I felt compelled to return to Atchison. Of course I wanted to see the place where this remarkable woman had entered the world and had had her most formative experiences. But, too, I felt that she had something to say to me. I would make a pilgrimage to Earhart's point of origins.

Atchison, Kansas, population ten thousand, is located on a bend in the Missouri River about fifty miles north of Kansas City, Missouri. I felt an immediate affinity for the place. Like my hometown on the Mississippi, it is a hilly, wooded, river town, once a vital rail center. The liveliness that I saw there on a warm Saturday in June wasn't typical of other similar-sized towns on the eastern Great Plains. Perhaps some of this activity was due to the seasonal tourism centered around Earhart's childhood in this place.

Earhart's maternal grandfather, Alfred G. Otis, had been an imposing presence in Atchison, indeed, in the state of Kansas. He was the founder

of the Atchison Gas Company and of the Atchison and Nebraska Railroad, president of the Atchison Savings Bank, and U.S. District Court judge. In 1861, the year in which Kansas became a state, Judge Otis built a white, two-story, wood frame, Gothic Revival house with gingerbread trim along the front porch, atop the bluff for his Philadelphia bride, Amelia Harres. In Atchison as in my hometown, it was the rich and the poor who lived near the river—the wealthy on the bluffs, the poor in the bottoms. While most other houses on Quality Hill are larger and more ornate than the Otis house, its placement some four hundred feet above the Missouri River and above the residences of most other people, spoke of status, wealth, prestige, and influence.

Judge and Mrs. Otis lived in this house from 1861 until 1912, the year when both died. During the school year, Amelia and her younger sister Muriel lived with their grandparents; during the summers they lived with their parents, Amy and Edwin Earhart, fifty-five miles away in Kansas City, Kansas. For the first thirteen years of her life, this house above the Missouri was Amelia Earhart's principle residence, and she lived there longer than she lived any other place in her forty years. Just as the houses I inhabited as a child continue to provide the settings for most of my dreams, perhaps Earhart dreamed the Otis house into existence night after night in Philadelphia, Boston, Toronto, Los Angeles, London, Rye, New York, Honolulu, Mexico City, and Lae, New Guinea.

After the death of the Otises, the Earharts moved so frequently that during a four-year period Amelia attended six different schools in Des Moines, St. Paul, and Chicago before graduating from Chicago's Hyde Park High School in 1916. Because of Edwin's periodic bouts of alcoholism and his lackluster ability to support his family, the Earharts sometimes lived near poverty. But it was the early, stable, privileged years that had been so formative in the development of Amelia's character.

In the 1890s, the decade when Earhart was born, many on the Great Plains suffered from the severe, prolonged, drought; low prices for farm commodities; unemployment in the cities and towns; and a deflating currency. People who had borrowed cheap inflated dollars from Otis's

bank in the 1880s had to repay him with more valuable, deflated dollars in the 1890s. Many abandoned the Great Plains for the greener pastures of the Midwest. Included in that exodus were my father's father's parents, who left south-central Nebraska for southeastern Iowa.

Earhart's life contrasted sharply with that of the children of the farmers and laborers to whom her father loaned money. She was born into a world of servants; personal libraries; subscriptions to newspapers from Chicago and New York; a piano; pleasure trips to St. Louis, Minnesota, and New Jersey; a grandfather who was famous locally and nationally; a mother who was recognized as the first woman to reach the top of Pike's Peak; a father who was so bright that he entered college at fourteen and graduated at eighteen; and grandparents who paid their granddaughters' tuition to Atchison's College Preparatory School. Earhart was reared in a world of far more possibilities than most females of the time, indeed, than most children of any time.

As Meredith and I drove the three hours between Lincoln and Atchison, I told her some of the facts and anecdotes about Earhart's life that would have fascinated me as a child. For instance, when Earhart was nineteen, she dropped out of a girls' finishing school near Philadelphia so she could work as a volunteer nurse's aide for the Canadian Red Cross at Spadina Military Convalescent Hospital in Toronto. This experience was transformative: it was the source of her lifelong pacifism; it inspired her to begin preparations for a career as a physician by enrolling in premed courses at Columbia and Harvard; it created a yearning in her to pilot airplanes as had some of the soldiers she'd tended at Spadina. Earhart never became a doctor, but for the rest of her life, she held fast to her pacifism and her fascination with flying. When her parents moved to Los Angeles in 1920, she followed them, working as a file clerk and an operator for the telephone company, a dump truck driver for a sand and gravel company, an assistant in a photographic darkroom, and a secretary in various places, including her father's law office. She used her earnings to pay Anita Snook's one-dollar-per-minute fee for flight lessons and to buy her first plane, a small, open cockpit Kinner Airster, the "Canary." In

1921, Earhart made her first solo flight. In 1922, she set her first record: the women's altitude record of fourteen thousand feet. In 1923, she became the sixteenth woman in the world to receive a license from the Federation Aeronautique Internationale. And she had only begun.

The biographical detail that I found most tantalizing and endearing, indeed, the detail that hooked me on Earhart, was a scrapbook she kept entitled "Activities of Women." This wasn't a typical scrapbook, a picture diary of the momentous events of one's life, but a collection of possibilities. As Earhart moved from one job to another (she claims to have held twenty-eight jobs by the time she was twenty-eight), she filled her scrapbook with clippings, not about female flappers but about female automobile mechanics and lawyers; not about female movie stars but about female movie directors; not about the likes of F. Scott Fitzgerald's bored, shallow Daisy Buchanan but about bankers, congresswomen, athletes, and settlement-house workers, the latter a prestigious, influential profession that attracted the best and brightest women of the age. And, too, she clipped articles about the activities of such women's groups as the recently formed League of Women Voters.

In the fall of 1926 Earhart somehow found her calling and became worthy of a spot in her own scrapbook when she started working and eventually living at Boston's Denison House. The settlement-house movement, begun in Chicago by Jane Addams and Ellen Gates Starr, brought education, recreation, and welfare services to the urban poor. Like Hull House, Denison was created and staffed by smart, strong-willed, progressive women. Earhart had clipped and pasted articles about such women in her scrapbook long before she started working in a settlement house.

Earhart found her job duties at Denison gratifying. There she taught citizenship classes to immigrants and home English classes to Chinese mothers; she organized a Chinese girls' club and a Syrian mothers' club; and she drove children to medical appointments in her sporty but battered yellow convertible Kissel Kar. In 1928 she became one of the directors of Denison. Had Earhart remained there, her contribution might have been as significant as that of such settlement-house workers as Frances Perkins,

whose work resulted in minimum-wage legislation and the Social Security Act of 1935, or of Julia Lathrop, whose work resulted in a separate court system for juveniles, or of Jane Addams, who in addition to founding Hull House was instrumental in passing the first state child-labor law. But shortly after her appointment as director of Denison House, Earhart received another calling.

Meredith and I began our tour of the birthplace museum in the first and second parlors. After just moments within, I sensed the texture of life in these rooms, in this house, on top of this bluff, in this lush corner of Kansas. The two parlors were oppressively pattern-filled: floral wallpaper with floral borders, patterned ceilings, Karastan patterned carpets, lace curtains, and doily-covered furniture. I imagined Earhart passing long Sunday afternoons stitching an embroidery sampler under the supervision of her Victorian grandmother in these busy rooms. I imagined Earhart looking up from her small, tedious needlework through the front parlor windows toward the clearing at the crest of the wooded bluff, beyond to the river and the western edge of Missouri. Surely, the parlors seemed small, stiff, confining, and on summer days, unbearably hot to Earhart, who would rather have been exploring the caves in the bluff, playing baseball, riding a horse, or shooting rats in the barn with her .22 rifle. If it was a snowy day, I imagined her preferring to sled down the steep slopes of Quality Hill. Or at least she'd rather be in the kitchen, a large gracious room with white walls, bare wooden floors, and none of the Victorian fussiness of the other rooms. This contrast between what was expected of a girl and what she'd rather be doing provided the conflict and tension in the best books that I read as a child: *The Diary of Anne Frank*, *Jane Eyre*, *Pollyanna*, *Anne of Green Gables*, and *To Kill a Mockingbird*.

Like the finest birthplace museums, the one in Atchison presents both the legend or myth and the historical person behind it. The glass display case in the second parlor contains such items from Earhart's life beyond Atchison as an issue of *Cosmopolitan* featuring one of the columns she wrote for it and the leather helmet that once held her bobbed hair close

to her scalp. But what I found most revealing in this display was a light blue, two-piece bathing suit with white piping. Next to the suit is an original black-and-white photograph of four-year-old Amelia wearing the suit as she stands on the beach next to a row boat at Cape May, New Jersey. This photograph, which I've never seen reprinted in any of the biographies I've read about Earhart, speaks of privilege: a little girl from the center of North America traveling to the East Coast for a holiday; the extravagance of owning a set of clothes worn only for swimming; a photograph not of a group of posed, stern-looking family members but of a leisurely, summer moment.

Earhart's life was the type that I fantasized about as a child. It was tidy, orderly, disciplined, and both affluent and impoverished, depending on which part of the family she was living with. She seemed to have everything: good looks, an athletic, "tomboyish" body, keen intelligence, the ability to draw people to her, the courage and self-confidence to be defiant. As I moved through the parlors and into the conservatory, I wondered what Earhart, both the privileged, gifted child and the woman that she became, had to say to my daughter and me.

Many of the relics and replicas in the birthplace museum inform each other. Outside the conservatory window is a half-scale model of Earhart's version of the roller coaster that she had seen at the St. Louis World's Fair of 1904. Since her mother wouldn't let her ride the roller coaster at the fair, when Earhart returned home, she made her own by leaning two wooden tracks against the shed roof. I imagined her climbing into a crate with roller skates attached to the bottom and hurtling to a crash landing. One biographer says that Earhart had exclaimed with delight that the experience was just like flying. After she lessened the slope of the track, her friends rode her roller coaster, too. Just feet away and suspended from the ceiling within the conservatory is a model of Earhart's orange and silver Lockheed Electra in which she and Fred Noonan disappeared on their round-the-world flight July 2, 1937, just a few weeks before Earhart's fortieth birthday. "When I go, I'd like best to go in my plane. Quickly," she is quoted as saying in *Soaring Wings*, the biography that her husband wrote about her and published in 1939.

In the butler's pantry, a small, simple room next to the kitchen, Amelia and Muriel ate lunch before running out to play. This room reminds me of the kitchen in my paternal grandmother's kitchen—a painted wooden table; tall windows; a bare sink hanging on the wall from which we drank hard well water. In the butler's pantry, I remembered how it felt to run inside for water or food on a warm day and then tear back outside for more play. On the east wall in the butler's pantry hangs an interactive map about Earhart's last flight and disappearance. Suspended from the ceiling is a model of her favorite plane, her Fokker-red Lockheed Vega, trimmed in black and gold. In this plane, Earhart set a record as the first person to cross the Atlantic twice, and she beat Charles Lindbergh's time. Unfortunately, most people know more about how Earhart may have spent the last days of her life or are more interested in speculations as to whether she, at some impossible age, is still a spy in hiding on some South Pacific atoll or sequestered in some New Jersey suburb, than they are about her heroic 1932, solo flight from Newfoundland to Ireland in this unpressurized red Vega. On that flight, Earhart was at once the pilot, the navigator, and the mechanic.

Nor do most people know the circumstances of Earhart's first flight. In 1928 while working at Denison House during the week and flying on weekends, she was chosen by the American-British pilot and patron Amy Phipps Guest to be the first woman to cross the Atlantic in an airplane. Earhart was chosen not because of her flying abilities—indeed, she was forbidden to do any of the flying—but because of her uncanny resemblance to Lindbergh. One of the members of the committee who had selected Earhart for the flight was George Palmer ("G. P.") Putnam, whose publishing company had profited handsomely from the sales of Lindbergh's account of his 1927 transatlantic flight and who would become her manager and husband. Certainly, Putnam was struck by the similarities between the two pilots. Both had short, tousled, sandy hair, steady gray eyes, high foreheads, freckles, quick smiles, and "boyish" manners. When dressed in flight gear—knee-high, laced-up boots, jodhpurs, knee-length leather jackets, white shirts, neck ties, and snugly fitting leather

caps—they looked eerily alike. And they acted alike. Both were daring risktakers, independent, modest, and self-controlled. Other than gender, the most conspicuous difference is that Lindberg shunned publicity and celebrity, while Earhart embraced them.

With pilot Wilmer Stutz, who was paid twenty thousand dollars, and mechanic Lou Gorden, who was paid five thousand dollars, Earhart, who wasn't paid a penny for her duties as captain and logbook-keeper of the *Friendship*, crossed the Atlantic and landed in Wales on June 18, 1928. So committed was she to her work at Denison that she arranged for the flight to coincide with her two-week summer vacation, fully intending to resume her duties at the settlement house once she returned home. She had not expected this flight to make her so famous and instantly recognized that she could no longer visit her clients in the tenements. Perhaps she was grief-stricken or regret-filled by the loss of her long-sought vocation.

In the judge's parlor hangs a painting of Earhart and Putnam and a replica of their marriage certificate dated February 7, 1931. Legend has it that Putnam proposed six times before Earhart accepted. On the evening before the wedding, she wrote him a letter: "You must know again my reluctance to marry, my feeling that I shatter thereby chances in work which means much to me. I feel the move just now as foolish as anything I could do. . . . I may have to keep some place where I can go be myself now and then, for I cannot guarantee to endure at all times the confinement of even an attractive cage." In the same letter, Earhart said that she would not hold Putnam or herself "to any medieval code of faithfulness" and asked that "you will let me go in a year if we find no happiness together." Putnam accepted these terms and the two were married the next day: a far better romantic tale for girls to internalize and try to reenact than the Cinderella stories that I absorbed as a child from movies and television. I suspect that because Earhart was Putnam's business venture as well as his beloved, she was in a better position than most women to make demands and insist that they be honored. Earhart's childlessness, whether due to choice or something biological, allowed her more time, energy, and freedom for transoceanic flights and long, exhausting lecture and

promotional tours than would a life filled with the demands of pregnancies and child-rearing.

Curiously, excerpts from the so-called marriage-demands letter hangs not in the judge's parlor with the wedding portrait and marriage license but in the butler's pantry with the model of Earhart's Vega and the map of her last flight. Does the curator's placement of this letter there suggest that it was Earhart's way of ensuring that she remain airborne or that through these demands she had doomed her marriage?

Another facet of the Earhart myth that the birthplace museum attempts to correct is that Earhart was the only woman pilot of that time or that if there were others, she was the best. The display in the judge's parlor devoted to Ruth Nichols and the other female pilots challenges that assumption. Nichols had been Earhart's friend, one of the pilots considered for the *Friendship* flight. In 1929, Nichols, Earhart, and Louise Thaden cofounded the Ninety-Nines, the International Organization of Women Pilots, the group that, in 1984, acquired the birthplace museum and began restoring it. Nichols was, according to biographer Doris L. Rich, Earhart's "most formidable rival." In fact in 1931, Nichols broke Elinor Smith's altitude record and Earhart's speed record. Yet, Nichols was not a publicity seeker; nor had she a savvy promoter for a husband. "If I had a promoter like Putnam," said another record-setting pilot, Bobbi Trout, "I could have done the things Amelia did." Perhaps this was true of the other female pilots of the age: Jackie Cochran, Thea Rasche, Helen Richey, Pancho Barnes, Louise Thaden, Blanche Noyes, and Phoebe Omlie, to name but a few, as well as Elinor Smith.

In this room, Earhart's presence gathers and swirls about me. Here, she speaks to me of balance: tenacity and hard work on the one hand; sheer good luck on the other. She would not have been chosen for the first transatlantic flight if she hadn't been a pilot, the result of perseverance both at the airfield and at her various jobs, which paid for her flight lessons and her plane. But she was chosen over all other female pilots because she was in the right place at the right time, just happened to resemble Lindbergh, and one of the men doing the choosing just happened to be her future

husband and manager—all factors beyond her control. Without this good fortune, Earhart would have been just another female pilot. If she experienced success and fame, it probably would have come through her contributions as a social worker. I, too, have benefited from a felicitous interplay between hard work and good fortune. When I started writing, there were no classes in creative nonfiction at any of the colleges and universities that I had access to. And so, by reading and imitating those essayists whose work I admired, I taught myself. But equally important, good luck led me from here to there, to people and opportunities that could teach me what I needed to know about my craft. Thereafter, I only needed time, persistence and hard work in order to fulfill my lifelong desire to be a writer whose work is read by others.

At the end of the wide hallway atop the stairs is what at first glance appears to be an arched window, but is actually a double door. I imagined young Earhart stepping out this door onto the porch roof for a view of the bluff and the Missouri, then a wilder river. Perhaps after returning home from school, she sat on the porch roof and gazed into the depths of the sky or slept there on warm, star-filled nights. From there, she could see the other houses on North Terrace with their spacious front porches, little barns, garages, sheds, and the alley behind. The castlelike appearance of some of these bluff-top houses, including that of the Challises two doors down, where Earhart's cousins and playmates, Toot and Katch, lived, may have been the settings that Earhart imagined when she read adventures by Walter Scott, Victor Hugo, and Alexander Dumas. At the top of the bluff across the street from the Otis house is the little park that Earhart's grandfather created. The wooded bluff and the river offered a stage upon which Earhart acted out the stories that she read in *Harper's Weekly* or the *Youth's Companion*, *The Tales of Peter Rabbit* or *Black Beauty*, and what Susan Butler says was Earhart's favorite poem, Swinburne's *Atalanta in Calydon*, an epic poem with a rare protagonist, a female hunter-warrior. I imagined Earhart dreaming of possibilities as she watched the river flow past Atchison on to Kansas City where it turned and angled across the state of Missouri, flowed into the Mississippi, and flowed on past St.

Louis, Memphis, and New Orleans. I imagined Earhart stirred by the sight of flocks of Canada geese, each flock shaped like the nose of an airplane, as they migrated across the continent, or the seemingly effortless way in which hawks and crows glided and drifted above the bluffs. I imagined Earhart seeing possibilities in the sky.

The south half of the upstairs is one large bedroom, but when Alfred and Amelia Otis lived there, a wall divided the space into two rooms. The master bedroom was on the east, facing the river. Earhart's mother's childhood bedroom was on the west end. It was there that Amy Otis Earhart spent the final months of her first, full-term pregnancy.

On July 24, 1897, the last day of Amy's pregnancy, Atchison sweltered in a heat wave. A storm brought a cool front; by late evening, the storm had passed. At 11:30 that night, in the calm, cool clarity, nine-pound Amelia Mary Earhart was born. I imagined the heat, the smell of the rain and the birth, the relief and pleasure of beholding a healthy, just-born infant. Amy remained "confined" at her parents' house for several months following the birth, probably sitting propped up in bed, eating meals off trays that the cook, Mary Brashray, brought her while baby Amelia slept or fussed in a nearby cradle. After the baby was baptized on October 10, 1897, at Trinity Episcopal Church, Amy and Amelia returned to their home in Kansas City, Kansas, where Edwin Earhart was a rather unsuccessful lawyer for several railroads. When Amelia was three, she was sent to Atchison to live with Amelia Otis who was grieving the deaths of her mother, son, and daughter-in-law. Little Amelia was to keep her grandma company.

In the corner of what had been Alfred and Amelia Otis's bedroom is a set of luggage that Earhart designed, a reminder that after she became one of the most recognized people in the world, the Princess Diana of the Depression years, Earhart spent less time flying than she did designing and modeling her own line of clothing and luggage, delivering her lectures, encouraging women to fly—in her role as assistant to the general traffic manager for Transcontinental Air Transport—writing syndicated books about her adventures and light, breezy columns, such as "What Miss

Earhart Thinks When She is Flying" or "Your Next Garage May House an Autogiro" for *Cosmopolitan*. And she endorsed products including Lucky Strike cigarettes, Kodak film, Time Saver stationery, Franklin and Hudson automobiles, Beech-Nut chewing gum, Pratt and Whitney Wasp engines, mail-order kitchen gadgets, and Chrysler cars. A significant part of the life not captured by the myth is that Earhart was a commodity. "The icons of the air age were big business," Gore Vidal wrote of Earhart and Lindbergh, both of whom he'd known as a child. When I consider how much time and energy and creativity this work must have taken, I realize that perhaps Earhart hadn't found the balance between holding safe what mattered most and limiting or fending off what didn't.

From the birthplace museum, Meredith and I drove through downtown Atchison, past the granite Pony Express memorial and past the white limestone church where Earhart had been baptized and had attended services. This was a different downtown than Earhart had known. In 1958, Atchison had been inundated by two flash floods. As a result, many of the older buildings were replaced and a pedestrian mall built. I crossed White Clay Creek where we found the depot that housed the Atchison County Historical Museum. Built in 1880 of limestone and ashlar, this was once a busy station for the Atchison, Topeka and Santa Fe; the Chicago, Burlington and Quincy; the Missouri Pacific; and the Chicago, Rock Island, and Pacific Railroads. Now the restored depot is the home of the Atchison County Historical Museum. A video machine in the middle of the room played Judy Garland singing "On the Atchison, Topeka, and Santa Fe" from the 1946 musical *The Harvey Girls* again and again and again:

> *See that old smoke rising round the bend.*
> *I reckon that she knows she's gonna meet a friend.*
> *Folks around these parts get the time of day*
> *From the Atchison, Topeka and Santa Fe.*

In the nearby exhibit "Amelia Earhart: The Atchison Years" I found the gray dress, and white cap and apron that she wore as a nurse's aide, her

worn, brown leather flight jacket, a sequined dress, the narrow dancing shoes (size 6AA) that she'd worn as a girl, and an embroidery sampler on which Earhart had cross-stitched her initials when she was eight.

Most moving is the amount of detail this display presents about Earhart's last visit to Atchison. In Earhart's childhood bedroom, I hadn't recognized the significance of this final visit and so had paid more attention to the photograph of her and Orville Wright, and some of the period toys on display similar to those that the Earhart girls had played with, than to the memorabilia from her final visit. Nor did any of the Earhart biographies I read, written by people living in London, England, Washington DC, New York City, and other faraway places, recognize the significance of Earhart's last visit home. Only one biographer, Doris L. Rich, gave the event any coverage, and that was less than a page. But what I found in the Atchison County Historical Society is a story that is alive and fully fleshed out. It is there that Earhart dwells. It is the shrine or reliquary at the end of my pilgrimage.

Earhart's homecoming was of extraordinary significance to the people of Atchison and it was much anticipated. After reporting that Earhart had broken all aviation records as "[t]he first flier to zoom across the ocean from Honolulu to California in a solo flight," the January 14, 1935, *Atchison Daily Globe* closed with an invitation and a promise: "Amelia, please make arrangements to come back to the old home town soon, and we'll put on a banquet as well as be a banquet." When Earhart came home six months later, the *Globe* proclaimed the event to be "the first time Atchison has had an opportunity to honor the famous aviatrix who was born and reared here." Perhaps the long-awaited homecoming bore extraordinary significance for Earhart, too.

Earhart arrived in Atchison for her last visit on Thursday evening, June 6, 1935. When *Globe* reporter Nellie Webb interviewed her Friday morning at the Challis home, she found Earhart wearing "a pale green flower negligee (almost feminine)." Earhart hinted that she had other record-setting flights in mind, though they wouldn't be in her old Vega, which she was turning "into greener pastures." Less than eight months

later, Earhart flew from Honolulu to Oakland in a newer Vega. On her thirty-ninth birthday, she received the Electra, the plane in which she would attempt her around-the-world flight.

On June 7, Earhart rode through downtown Atchison on a floral, airplane-shaped float that the Atchison firefighters made for her. She wore the navy-blue suit that she had designed for the occasion, the replica of which hangs in her childhood bedroom. The long jacket has a wide, white, V-shaped collar that extends beyond the shoulders and past her waistline. The suit seems too warm for a June parade on the eastern edge of the Great Plains. Twenty-five thousand people, almost double the population of Atchison at that time, lined the streets through which the mile-long parade passed, in hopes of seeing Earhart. Perhaps they even noted that she shared the float with Kansas governor and 1936 Republican presidential candidate Alf Landon. At some point, one of the firefighters gave Earhart the pair of wooden wings affixed to the float and now hanging in her childhood bedroom, and she signed it. The printed capital *A* is disproportionately tall and fat; the crossbar on the *t* at the end of "Earhart" looks like the trajectory of a plane taking off into the air.

That evening at Soldiers' and Sailors' Memorial Hall, dedicated to those who had served in World War I, Earhart addressed the forty-seventh annual meeting of the Kansas State Editorial Convention. I do not know if Earhart—who had written accounts of her flights for newspapers and magazines, had been aviation editor for *Cosmopolitan*, and had received extensive press coverage—spoke to the editors of journalistic methods and ethics, including her strong feelings about being misquoted. Nor do I know if she reminded her audience that she, too, had served in World War I. But I do know from the life-sized photograph on display that she wore a floor length dress made of a dark, glossy fabric with small white splotches. In this dress her legs look even longer, her hips even more boyish than usual. I heard a recording of her speaking into a microphone, a chest-high silver stem with two, shoulder high arms, each supporting a silver ring. As she clasped the inside corners of her white, waist length jacket, she thanked the audience of thirty-five hundred for treating her

informally. "I should have been hurt had you treated me any other way," she said in that aristocratic voice of hers that seems to come from above her head as if airborne, a voice that recalls Katherine Hepburn's, though the accent, inflections, and texture are not Hepburn's. Earhart continues: "As Governor Landon said, it's been rather a meeting of ghosts; I can't be sure whether I am that ghost or if it is one of a child who was born in a house on North Second Street and who coasted down that hill I was remembering on the way down here. It has been a pleasant homecoming for us both. Good night." Outside the hall, a crowd waited for a glimpse of the tall, blond celebrity who had once been one of them. That night, Earhart slept not at her grandparents' house, now owned and occupied by other people, but two doors down at the Challis home.

Had the 1935 stay in Atchison been just another job to pay the bills? That year, Earhart delivered 135 lectures at $250 to $300 per performance, the chief form of income for her and her husband. She drove or flew herself to most destinations. The Atchison appearance followed a ten-day publicity blitz that Putnam had arranged. May 29, Earhart delivered a lecture in Indianapolis. May 30, she was the first woman to referee the Indy 500. May 31, she delivered a lecture in Muncie. June 1, Purdue University announced her acceptance of a visiting faculty position. On June 3 at Propertown, New Jersey, she made her first parachute jump. On June 7, she appeared in Atchison. Or had she been eager for the homecoming and hometown reception given to the local "girl," now a beautiful celebrity "aviatrix"? Or had she been so awash with memories of the house on North Second, fretted and soothed by the remembered view from her bedroom window of the snow-dusted trees on the bluff and the frozen river below, the whistles and clatters of trains in the night, the scent of heliotrope in her grandmother's garden, the way the morning light fell onto the floor of the window-filled dining room, the creak of certain floorboards beneath her feet, the taste of the water, the must and fragrance of the closets, the darkness of the cellar, and the cool smoothness of the banister beneath her long fingers, that she had to get as close as she could to the source? Did she have a hunch that she would never see, hear, touch, taste, or smell home again?

On the Saturday afternoon of that last visit, Earhart visited Uncle Theo, her mother's mentally retarded brother, and his caretaker, Mary Bashray, who had been the Otis family cook when Earhart was a child. Later that afternoon, Balie Waggener, one of Earhart's childhood playmates, a fellow student at the college preparatory school in Atchison, who lived in a griffin-topped castle near the bluff top, drove Earhart and Putnam to the Kansas City airport. From there, they flew to St. Louis where Earhart had left her plane. As they drove the bridge spanning the Missouri, Earhart may have shivered slightly as she glanced over her shoulder for one last look at home. Perhaps she felt a twinge of regret or had a premonition. Or perhaps it was just a chill in the air.

With the honored guest gone and the cleanup already underway, the people of Atchison began their return to ordinary life. But life wasn't exactly as it had been. Everyday objects and people were no longer ordinary, simply because they had been in her presence. For a while, people spoke of "the time before" and "the time after" her visit. They rehearsed stories about their experience that they would tell their children and grandchildren and great-grandchildren. Most eventually returned to ordinary life. But for some, being in the presence of one who had grown up among them and was smart, strong-willed, and lucky enough to live such a daring, unconventional life, the return to ordinary life, was slow, bumpy, or incomplete.

On her final visit to Atchison, had Earhart seen her growing-up place as a place that offered neither a present nor a future but only a past, since all she found there on her final visit were a few old friends and many memories? Perhaps she had intended to return once every decade or so as an act of service or benevolence to this community and that would be enough. For Earhart, it was leaving home, leaving the earth that had given her her edge and she intended to keep herself sharp, angular, and hungry. Staying or returning would have made her soft, round, and sated. Or had Earhart seen her growing-up place as a source of nurturance—a nest or womb, a launch pad or springboard, the place where some right balance was struck between not enough and too much? Perhaps after this

homecoming just thirteen months prior to her death, Earhart planned to return to Atchison with frequency, yearly, perhaps, in search of the geographical, historical, social, and cultural influences that made her who she was. She and Putnam might eventually have bought a house on the bluff in the old neighborhood or built one on some secluded piece of land in Atchison County, where they could make seasonal retreats. Perhaps after Earhart retired from public life, their house in or near Atchison would be their principal residence. They'd return to the Putnam family estate in Rye, New York, simply for a reprieve from the summer heat or for holiday gatherings.

Like any good pilgrimage, my trip to Atchison had an immediate and a delayed effect. I wrote a draft of this essay shortly upon my return; I've revised it substantially once a year for the past five. At the time of the first draft, I was forty-four, Meredith was ten, and Ian was sixteen. Then, I had focused on my and Earhart's shared geographical influences. During the next couple of revisions, my focus shifted to Earhart's callings—how long it took her to receive them, the winding path she followed to meaningful work, how she was transformed by her work. Then, I was intrigued by the balance between luck and will that I saw in Earhart's life, my own, that of my children and people I knew. But now, Meredith is fifteen and preparing for college; Ian is twenty-one and living on his own. I will soon be fifty and preparing to live a life less centered around home and children, a life with more time for writing and teaching or perhaps to prepare for a new life as an herbalist, a locksmith, a mandolin player, or an environmental activist. Though I've never been in a long-lasting, equitable, balanced relationship with a man, I listen for what Earhart might have to teach me about that. And, too, I'm struck by what Earhart can't tell me. She can't advise me about how to support and nurture my children as they leave home and become their own, separate people. Nor can Earhart, who died a few weeks after her fortieth birthday tell me about the challenges of physical aging both in her appearance and in her ability to endure long flights and to gracefully jump into and out of the cockpit.

If Earhart had lived to be my age, would she still have been flying or would other things have mattered more? By the time she was my age, she would have seen World War II take an estimated thirty-eight million lives and level entire cities, towns, and villages. She would have seen U.S. Air Force pilots drop a uranium bomb on Hiroshima and a plutonium bomb on Nagasaki, killing one hundred thousand to two hundred thousand at once and many more in the months and years to come due to the effects of radiation. Perhaps Earhart would have dedicated increasing amounts of her time to her pacifism. In the 1950s she might have protested the waste of human and physical resources on maintaining the Cold War. If she had persisted into the '60s and '70s, she might have been a leader in feminism's Great Awakening or the movement against the Vietnam War and the industrial-military complex in whose grip our nation remains to this day. Perhaps she would have promoted the exploration of space, regretting that she had been born too early to be an astronaut. Perhaps Earhart, who could write a good letter, would have devoted herself to writing collections of essays. Would they have been autobiographical? Political? Cultural critiques? What, if anything, might Earhart have to say to me when I'm sixty or seventy or eighty?

Five years after my pilgrimage to Atchison, Earhart is still with me. Next to my computer where I write is a postcard with a picture of the birthplace museum and that second-story porch where Earhart gazed upon the river, the bluffs, the sky. It is the place that grounded her and gave her wings. Pinned to a nearby curtain is a large, square pin bearing a photo of Earhart and Orville Wright, flight pioneers. These relics speak to me of a balance that Earhart may not have achieved herself but that I want for myself and my children: a balance between dreaming and working, between restriction and freedom, between home and beyond.

Seven

In the Corn

An Evocation

I am walking in the cornfield behind my parents' house in north-central Ohio. I'm always surprised to find that the furrows between the rows permit easy passage, since from a distance, they seem closely set. Since the first hard frost has drained the green from the leaves, stalks, and husks, everything seems blond and gray. When I pull back the loose husks, the gold kernels are the brightest thing in the field. Meredith, Kim, and my nephew Matthew fill their pockets with ears of corn to feed to the squirrels and bird-feeder birds.

The yellow-gold kernels, the stiff, blond husks, the red-brown silk spilling from the end of the red-brown cobs, evoke memories in me.

I remember the hand-cranked corn sheller in Great-aunt Pertsie and Great-uncle Harvey's barn. Jamie and I took turns cranking the sheller while the other fed ears into the hopper. Then we fed the kernels and cobs to the hogs. I remember the beauty of black cattle eating golden ears from a wire mesh corncrib near a red barn. I remember sitting on the back step pulling the ribbed green leaves and creamy floss from ears of sweet corn and the sweet, milky fragrance of newly exposed kernels. I remember that when Jamie and I were little, we'd eat sweet corn as if we were typewriters—right to left; at the end of the row, we made a bell sound and like the return lever moving the platen back to the right, we began eating again, right to left. Ding-scrape. We didn't stop "typing" until the cob was clean and the spaces between our teeth filled with hulls. I remember hand-shelling the corn that my friend Stephanie and I stole from the edges of a field near our junior high school, so we could "corn" houses on Halloween. I remember riding with my college friend Paula in her dad's combine as it ate its way through a central Illinois cornfield, snapping, shucking, and shelling many rows of corn at once, leaving crushed leaves and stalks in its wake. I remember orange pyramids, heaps of sunlight, each at least as tall and as wide as my house, rising near the train tracks and panpipe-like grain elevators and train tracks in every little town along two-lane highways in southern Nebraska. For most of my life, corn was the constant, the background, the seemingly unremarkable always-there. I have known corn and cornfields for so long that I don't have a first memory of either.

From the middle of this Ohio cornfield, I see nothing but pale stalks and gray sky. As the wind rustles thousands upon thousands of brittle corn leaves, I imagine the crackle of the corn-fritter batter that my mother is frying for supper and the dark Karo Corn Syrup in which we will dip the fritters. That night, I dream of cornstalks as thick and tall as trees.

A Marvelous Strange Plant

From a distance, a just-emerged cornfield consists of faint green lines scoring a black background. But up close, you see one newly unfurled first leaf after another. A just-emerged cornfield is a tender, delicate thing.

Growth in the bamboolike stalk occurs in the internode, the section between each of the eight to twenty jointlike nodes on each stalk. One wavy, sword-shaped leaf sprouts from each node on alternate sides of the stalk. Under good growing conditions, the sliding of the internode from its sheath occurs so rapidly that you can hear the stretching and popping of many thousands of elongating cornstalks. Turn-of-the-millennium hybrid cornstalks are belly-, even shoulder-high by the Fourth of July. By maturity, the average corn plant of the Great American Corn Belt has twenty or so leaves.

When you fly over corn lands in an airplane, you see dark green squares in the Midwest and dark green, irrigated circles on the Great Plains. From the highway, you see shimmering leaves and the uniform placement of the ears on the stalk. From within the cornfield, you see that the tassel is a spray or starburst of feathery wands crowning the stalk. You see that the plant's curious blossom is comprised of a long thread extending from each kernel and spilling out the end of the husk. Like the mangrove tree's aerial roots, exposed prop or brace roots encircle a stalk that grows increasingly heavy with leaves and ears. Corn is not a beautiful plant, but it is as familiar to me as my toes. And like my toes, the more closely I look at corn, the odder it seems.

On a wheat plant, the male and female flowering parts are borne within the same floral structure. But corn stamen and pistils not only don't share the same floral structure but one is at the top of the stalk and the other midway down. The sixteenth-century Flemish herbalist Rembert Dodoens wrote that corn bears no resemblance to any other grains "for it bringeth forth his seeds cleare contrarie from the place whereas the floures grow, which is against the nature and kinds of all other plants, which bringeth forth their fruit there, whereas they have borne their floure." Corn is, Dodoens said, "a marvelous strange plant."

The corn plant's method of fertilization surely ranks as one of the strangest in the plant world. An unfertilized ear of corn consists of numerous pairs of female flowers, each attached to the cob by a very short branch. The sticky, threadlike style or silk extending from a female flower catches pollen drifting from the tassel or male flower of the same plant or,

more likely, from another plant in the field. When caught, the sperm or pollen grain divides. One sperm nucleus forms a six-to-eight-inch tube within the silk for its twin to slide down to the egg at the base of the silk. This twin fuses with the egg inside the ovary to create the embryo, the kernel's germ, the site of the valuable corn oil. The other twin creates the endosperm, the starchy part of the kernel upon which the developing embryo feeds. The egg has become a kernel of corn. The kernel is not a seed; rather, it is a fruit containing a seed. If you split open a kernel, you will see the flame-shaped germ or center seedlike section near the tip where the kernel attaches to the cob. If ancient peoples had had access to microscopes, surely they would have mythologized this story of twin creators and womb-bearing kernels.

Ten to fourteen days after fertilization, the kernel is fluid-filled like a blister. The kernel ripens in five stages, apparent from the location of the "milk line": the "milk" stage, when the starch in the kernel is white and liquid; the "soft dough" stage, when the starch is like paste; the "hard dough" stage, when the starch solidifies; "glazed," when the hull or pedicarp, the hard outer covering that is water-resistant and undesirable to insects, becomes set; and "ripe" or fully matured, when the milk line is near the base of the kernel and the outer end of the kernel is dented. Tightly wrapped around each ear are husks, specialized bundles of leaves that sprout from the nodes to protect the naked ears from pests and the weather. From start to finish, corn growing in the center of North America requires 90 to 150 days, depending on the weather and the type of hybrid seed planted. Shortly after the kernel ripens, the rest of the plant dies.

The kernel is the beginning and the end.

How Metaphors Cluster and Extend into Myth

A stalk of wheat grows two-to five-feet tall; the leaves are long, slender, and alternate; the narrow wheat head holds the kernels at the top of the main center stem. Grass.

The corn tassel is a shock of hair; the mature corn plant looks down on you. The bladelike alternate leaves are outstretched arms; the down-

pointing ears at the middle of the stalk are extended hands, penises, bent elbows. The kernels are rows of teeth or embryo-cradling wombs. The silk is a clump of pubic hair. When magnified 1,210 times, the male pollen grain looks like a breast, a plump hemisphere with a nipple and areola. The language used by corn breeders further imputes human qualities to corn: male plants are "fathers"; females are "mothers." To remove the tassel is to "castrate" or "emasculate." To crossbreed two types of corn is to "marry them." Corn copulates, consummates, makes milk and progeny.

Where It Came From

For the American Indians, maize was a gift of the gods. In some origin stories, it arrived from the heavens ready for planting and abundance. In the Pawnee corn origin story, Evening Star, the mother of all things, blessed people with corn from her garden in the western sky where it was always ripening. Many tribes tell stories of a great flood that destroyed all living creatures except for those people and animals that the gods protected by placing them underground. When the waters receded, Mother Corn led the people out of the earth and to the place that would become their earthly home. There she provided seed for them to plant either by turning herself into an ear of corn or by cutting open her breast so that corn could spring forth from her body.

Whether maize (*Zea mays*), the Indian name for corn that botanists prefer, sprang from a divine body or had a more mundane origin, it no longer exists in a wild state and its ancestry can't be directly traced to a wild plant as can that of other grains. However, most experts believe that about seven to ten millennia ago, the pollen of teosinte (*Zea mexicana*), a wild, perennial grass, fertilized maize or that maize fertilized teosinte. In sketches I have seen of teosinte, it looks wild and weedy. The plant is bushy, with each branch ending in a tassel. One to one hundred "ears" grow along the branches of each plant rather than on the stalk as with cultivated corn. Each ear consists of six to twelve orange or brown kernels stacked one on top of the other. Each kernel is enclosed in a hard, indigestible shell, each of which is wrapped in its own husk or pod. Despite the numerous husks,

the wheatlike grains were easily procured: the kernels grew so loosely that they fell off the cob and planted themselves. The people living in central and southern Mexico from about 8,000 to 5,000 B.C. did not plant this maize-teosinte cross, but they did tend, gather, and eat it.

What bridged the gap between teosinte and corn wasn't a gradual, Darwinian evolution but a sudden transformation. According to botanist Hugh H. Iltis's catastrophic sexual transmutation theory, about five thousand years ago, a catastrophe, an abnormal environmental condition, triggered a hormonal shift in perennial teosinte that caused it to undergo a rapid sex change. Through radical contraction and condensation, the central spike of the male tassel, which had appeared at the end of a lateral teosinte branch, became a female ear of corn attached to the central stem or stalk. A radically shortened, condensed branch became the shank at the base of the ear; the teosinte leaves became the husks on the ear. In one grand, macroevolutionary leap, the spike became the ear. Humans liked what they saw and continued to select these attributes.

The earliest known remains of cultivated corn are the seven-thousand-year-old, fossilized corncobs that archeologist Richard MacNeish found in a cave in Mexico's Tehaucan Valley. The plant that produced such ears may have been a tall stalk with a one-inch-long ear containing fifty to sixty tiny kernels and a tassel growing out the top of that ear. On this plant, which was an intermediate between wild teosinte and maize, the reproductive parts were close together, making it more similar to a tulip, tomato, or wheat plant than to modern corn. What is most curious about these ears is that if one of them dropped to the ground and the seeds germinated, they would have died from overcrowding. Unless humans gathered and planted the seeds, corn would have become extinct in just a few generations. Corn was and continues to be dependent on people.

How Metaphor Clarifies and Obscures

Cut a ripe corncob in half and the cob encircled by kernels is the ray-encircled sun, our center of the solar system, a fitting symbol. Corn is the most important crop grown in the United States, the quintessential American food, our national grain and vegetable.

About three-quarters of the dried corn kernel is starch; the remainder is protein, oil, sugar, fiber, and ash. Seventy-five percent of the starch locked in corn kernels becomes cattle and poultry feed, which in turn becomes meat, milk, eggs, cheese. The remaining cornstarch is used to produce syrup, textiles, leather, adhesives, detergents, beer, paint, ink, candy, tortillas, toothpaste, crayons, batteries, mouthwash, baking powder, salad dressings, yarn, soda pop, paper, soap, gravy, peanut butter, shoe polish, plastics, embalming fluids, pharmaceuticals, ethanol, and so on. We could go decades without eating anything that looks like a corn kernel, but we probably couldn't go more than a few minutes without relying on something made from cornstarch. It is our staff of life.

Corn Belt

Several "corn belts" or zones of intense corn cultivation have developed in the recent history of this continent. The first true corn belt, writes historian Nicholas P. Hardeman in *Shucks, Shocks, and Hominy Blocks: Corn As a Way of Life in Pioneer America*, was the Atlantic Coastal Plain from New England to Georgia. Initially, the presence of forests and Indians limited this belt to an area near the tidewater strip. But gradually it expanded westward to the foothills of the Appalachian Mountains. This first corn belt existed throughout the colonial period and well into the nineteenth century.

In the mid-1700s people emigrated from the seaboard states to the western side of the Appalachian Mountains, where they cleared the land and planted corn. Until the middle of the nineteenth century, the premier corn belt was located in what is now Tennessee, Kentucky, Virginia, and West Virginia, what in more recent times was known as the "tobacco belt." In 1840 these states along with North Carolina and Ohio were the nation's leading corn producers.

Following the Louisiana Purchase of 1803, which added the vast expanse between the Mississippi River and the Rocky Mountains to the United States, two new corn belts unfurled westward. From Georgia the southern belt sprawled along the Gulf Plains into Louisiana. Though during a typical year the total number of acres of corn in the pre–Civil

War Deep South surpassed the total number of acres of cotton by about three to one, and though the value of the corn crop was more than twice that of the cotton crop, this area was known as the "cotton belt," the place where cotton was king.

The corn belt that extended from Ohio to beyond the Mississippi, an area once lush with big bluestem, the dominant grass of the tallgrass prairie, became known as the Great American Corn Belt. This belt was and is comprised of those states in the central part of North America with deep, well-drained soils, an average rainfall of eight to ten inches from mid-May through mid-October, daytime temperatures of about eighty-six degrees Fahrenheit and overnight temperatures of about fifty degrees Fahrenheit during corn flowering time. This includes Iowa, Illinois, Indiana, and Ohio and parts of Nebraska, Kansas, and Missouri. With the creation of new short-season, quick-maturing hybrids in the 1940s, the Great American Corn Belt expanded to include South Dakota, Minnesota, Wisconsin, and Michigan. In the early 1990s, the United States accounted for about 40 percent of world corn production. Six states—Nebraska, Iowa, Minnesota, Illinois, Indiana, and Ohio—accounted for 82 percent of the U.S. corn yield, with Iowa alone accounting for 22 percent of that total. No place in the world grows as much corn as Iowa. It is the center; it is the sun of the corn-growing solar system.

Every war fought in the United States or what would become the United States from the beginning of the French and Indian War in 1756 through the Civil War, as well as most Indian treaties, concerned control of corn lands. The events that led to the United States acquiring the prime, corn-growing lands around my growing-up place in southeastern Iowa was played out in a similar fashion all across the corn-growing regions of the country. In 1800, the Sauk and Fox (Mesquaki), two allied Algonquian nations, claimed most of Illinois, all of Iowa, and northern Missouri. In 1800 Saukenuk, the principal Sauk settlement near what is now Rock Island, Illinois, had a population of three to six thousand people and was set upon eight hundred acres on the point of land between the Rock and Mississippi Rivers. Along a 240–mile stretch between what is now Prairie

du Chien, Wisconsin, and Hamilton, Illinois, across the Mississippi from Keokuk, were several smaller Sauk and Fox villages. In his autobiography, Black Hawk (1767–1838), a Sauk leader and, after his death, the patron saint, of sorts, of my hometown, said: "The rapids of the Rock River furnished us with excellent fish, and the land, being good, never failed to produce good crops of corn, beans, pumpkin, and squash. We always had plenty—our children never cried with hunger, our people were never in want. Here our village stood for more than one hundred years."

Corn figured prominently in the lives of the dwellers of Saukenuk. According to Black Hawk, when the Sauk returned to the village from the winter hunt, they readied the fields for corn planting and repaired the fences around them. As soon as the women finished planting, they prepared a feast in which the men selected the women they wanted to marry. When the corn was about knee high, the young men left to hunt deer and bison. Black Hawk reports that when the corn was ripe, "another great ceremony [took] place, with feasting and returning thanks to the Great Spirit for giving us corn." Afterward, the Sauk sold the surplus corn to the traders.

But change was coming. In 1804 William Henry Harrison, the first governor of the Northwest Territory, enacted a treaty with members of the Sauk and Fox tribes. These tribal representatives were not empowered to make treaties; nor did they realize that the treaty they signed extinguished their rights to some twenty-three thousand square miles of land on the east side of the Mississippi. Black Hawk repudiated the treaty, and for a while it wasn't enforced.

But compliance was demanded after the War of 1812 in which the Sauk and Fox had sided with the British. More than fifty million acres in northern Illinois and southern Wisconsin were taken from the two tribes and they were forced into Iowa Territory, thus clearing the future state of Illinois of Indian claims. Waves of emigrants from the Kentucky-Tennessee-Virginia corn belt, including my mother's mother's people, entered Illinois Territory through the southern tip, settling the future

state of Illinois from bottom to top. The Sauk, who denied that they had ever ceded their land, continued to reside part of the year in Saukenuk.

When land sales began in and around Saukenuk in 1829, Indian-immigrant tensions mounted. Under the Corn Treaty of 1831, the Sauk and Mesquakie were forbidden to return to their Rock River home, were assigned lands along the Iowa River, the home of the Iowa Indians, and were given an oral promise that the U.S. government would reimburse them for the corn and other crops left behind at Saukenuk—a promise only partially fulfilled. That year, Black Hawk and some of his followers returned to Saukenuk. Black Hawk was sixty-four years old, an old man who wanted to be buried among his ancestors at his birthplace. When Governor Reynolds heard of the Indians' return, he ordered the Illinois Militia to remove them. At the presence of so many soldiers, Black Hawk and his followers fled. From an island in the Mississippi, they watched the militia burn their village. The next day, Black Hawk surrendered all claims to Saukenuk. Shortly thereafter, "the whites," as Black Hawk called them, moved in.

But Black Hawk did not give up: he fought battle after battle. In the Black Hawk War of 1832, most of his followers died or deserted; he was imprisoned and later put on display in U.S. cities. In 1832, the U.S. government appointed Keokuk (1780–1848) chief of the allied tribes. Through a dozen treaties that Keokuk helped enact between 1832 and 1845, the Sauk and Fox were dispossessed of their lands, first in Iowa, then in Kansas. Finally, they were sent to Oklahoma. The way had been cleared for waves of land-hungry newcomers to break the Iowa prairie and plant corn.

In 1854 members of the Fox nation pooled their resources and sent a committee to Iowa to purchase land. Many Fox and a few Sauk left Kansas and settled on their 3,200–acre purchase in Tama County on the Iowa River. The Mesquakie Indian Settlement was not a reservation but the legally purchased property of a corporation. Theirs alone. Safe.

I have spent my entire life thus far in Nebraska, Iowa, and Illinois, all part of the Great American Corn Belt. Corn is so near and constant that I often don't see the vast and many cornfields that separate towns and cities,

the walls of tall, green corn on either side of the highway in August, the streets that end in corn rows. I easily forget what an unnatural creation a cornfield is: many thousands of rows of a plant that can't reproduce itself in fields chemically purged of quack grass, foxtail, thistles, sunflowers, prairie grasses—everything but corn. It was corn that made Iowa the state with the most intensely altered landscape and consequently, the least amount of relatively "undisturbed" land; in other words, land in a relatively natural state. Corn is the force behind mass movements of people, including my own family. And the way corn is produced determines the way, at least in part, in which we live.

How Metaphors Reflect and Create

In his 1901 *Corn Plants: Their Uses and Ways of Life*, Frederick L. Sargent sees the corn plant as both a "self-building food factory . . . governed by advanced business methods" and "a wise and enterprising manager in charge of its affairs."

But almost a century later, "How Corn Grows," an article on Iowa State University's maize Web site, reveals a telling shift in how some corn growers and corn breeders perceive corn. Here the cornfield is a manufacturing community; each corn plant is a factory; the manager is not the corn plant but the farmer. Water and mineral nutrients from the soil and carbon dioxide and oxygen from the atmosphere are the raw materials that the internal machinery of the corn plant transforms into starch, oil, carbohydrates, proteins, and mineral nutrients. The entire operation is powered by sunlight. The differences between hybrids result in different internal machinery in the individual factories. Corn farmers manipulate the environment with such managerial practices as tillage, fertilization of the soil, irrigation, weed, and insect control.

Managing

Domestication of maize may have begun when people noticed that the plants that sprouted from the kernels they'd dropped in the soil near their dwellings produced more grain than their counterparts in the wild. So they

cleared the area of other vegetation and sowed seeds. In this controlled, human-made environment, people preserved desirable mutations, which would have been selected against in the wild.

People also noticed that wherever two races of corn grew close to each other, the wind-borne pollen of several plants fell on the silks of many other plants. This natural cross-pollination produced chance-born hybrids. By exerting control over the fertilization process, people could influence the type of offspring. Planting maize and teosinte was one effective cross. Because maize and perennial teosinte have the same number of chromosomes, they easily interbred. But because the chromosomes were not perfectly paired or aligned, new genes were exchanged through the various crossings. "The ultimate result," wrote corn geneticist Paul C. Mangelsdorf, "was a gene pool so extensive and so rich in variation that almost any kind of corn could evolve from it through natural and artificial selection." Different people bred maize for different effects. Purity of color. Variety of color. Pattern of color. Ear length or plumpness. Number and position of ears per stalk. Kernel size. Flouriness of endosperm. Tightness of kernel. Softness of hull. Depth of grain. Husk coverage. Height of stalk. Time of maturity. Disease resistance. Reduction in the number of nutrient-stealing tillers.

Corn breeding continued among the new occupiers of the corn lands. In *Corn and Its Early Fathers*, Henry A. Wallace and William L. Brown recount the story of Robert Reid, the creator of one of the most popular Great American Corn Belt dents. When Reid moved from his farm in Ohio to a farm near Pekin, Illinois, in 1847, he brought with him Gordon Hopkin's Red, a southern gourdseed. This late-maturing white corn, with many rows of soft, starch-filled kernels, did so poorly in Illinois, that Reid replanted the mounds with Little Yellow Flint, an Illinois corn with a slender ear and hard, starch-filled kernels. From this cross, Reid and his son James selected for an early corn with cylindrical ears bearing many (eighteen to twenty-four) rows of kernels. In 1893, after almost a half century of selecting, James Reid took the corn to the Chicago World's

Fair. Reid's Yellow Dent won a grand prize and was quickly adopted by farmers throughout the Corn Belt. Such corn-breeding experiments had been occurring in North and Central America for thousands of years.

People continued tinkering with corn. Charles Darwin experimented with self-and cross-pollination in corn and other plants. He found that when diverse heredities or unrelated strains were united or crossed, their progeny were more vigorous. In 1877 at Michigan State College, William Beal greatly increased yields by doubling the crossings. First Beal created pure strains through self-pollination by putting paper bags over both the ears and the tassels. Then he sprinkled the pollen collected from the tassel onto the ears of that same plant. Next he crossed the inbred strains by sprinkling the pollen of one strain of corn onto the silks of another. Finally he crossed the offspring again. Beal found that such crosses are more productive than their parents, though not enough to justify the laborious process of bagging ears and tassels and hand-pollinating.

Three decades later, George Shull, a geneticist at the Carnegie Institution Station for Experimental Evolution, isolated purebred lines of corn through artificial self-pollination. The resulting ears were more uniform though less vigorous and productive. But when Shull crossed two selected purebred strains, the offspring were uniform and more vigorous and productive than their parents. Shull determined that because inbreeding reduced vigor and that crossing restored it, only seed obtained through the crossing of pure strains should be used for crop production. Shull's method of corn breeding based upon the exploitation of heterosis or hybrid vigor was, according to Mangelsdorf, "a creative achievement of the first order." Presently, about 80 percent of the hybrid seed corn planted in the United States is the result of a single cross. But in Shull's day people were skeptical because of the costliness of obtaining hybrids by crossing inbreds.

In 1918 Donald F. Jones, of the University of Connecticut Agricultural Station, produced a double-cross hybrid by crossing four inbred parents. The resulting vigor provided a practical method of producing hybrid seed

for farmers. "The double cross is actually an ingenious device for making a small amount of scarce single-crossed seed go a long way," Mangelsdorf wrote. "A few bushels of single-crossed seed can be converted in one generation to several thousand bushels of double-crossed seed." In 1921 the Connecticut Agricultural Station released the first commercial double-cross hybrid corn to retain full propagative vigor: the Burr-Leaming double cross. Until the 1960s, double crosses were the most widely-planted hybrid type.

In 1923 Henry A. Wallace, Iowa farmer, agricultural economist, and later FDR's secretary of agriculture and vice president, used one of the Leaming inbreds to create Copper Cross, a single cross, the first hybrid corn to be commercially grown in Iowa. In 1926, Wallace formed the Hybrid Corn Company in Des Moines, the forerunner of the Pioneer Hi-Bred Corn Company. Farmers were slow to accept hybrid seeds. In 1934 only 0.4 percent of U.S. corn acreages were planted in hybrids. But during the drought years of the Depression, farmers noticed hybrid corn far outproduced open-pollinated corn. By 1944, 90 percent of all Corn Belt acreage had been converted to hybrids. By 1956, the entire Great American Corn Belt had converted.

The change from open-pollinated to high-yield hybrid seed corn is a blessing and a curse. Because of hybrid seeds and changed agricultural practices, U.S. corn yields have increased from 30 bushels per acre in 1930 to 130 bushels per acre in 1990. Because hybrid ears stand at a straight and uniform height on the stalk and mature at the same time, they are easier to harvest mechanically than nonhybrid corns. But large-scale mechanization means larger farms, which means fewer family farms, which in turn means the decline of rural communities. Larger farms mean bigger machines, more fuel, more pesticides, more fertilizers, more paid farm workers, more investments from big corporations, which means more centralization, more industrialization, and more corporate domination. While hybrid corn isn't the sole reason for the loss of labor-intensive, relatively self-sufficient family farms and once vibrant, rural communities, it is a substantial contributing factor.

In addition, hybridization has drastically reduced the varieties of races of corn in the world. Wallace observed that when Reid's Yellow Dent "swept the Corn Belt from 1890 to 1920, it destroyed thousands of forgotten corns. When hybrid corn swept the Corn Belt from 1930 to 1960, it destroyed most of what remained." By the 1960s, corn diversity in the United States had reached a record low. Trading the health and vigor of genetic diversity for the convenience of monoculture has created vulnerability. For instance, in 1970 a new mutant strain of southern corn-leaf blight wiped out about 15 percent of the commercial hybrid corn crop in the United States. The epidemic was the result of the genetic homogeneity of single crosses and the widespread planting of hybrids containing Texas male-sterile cytoplasm, used to eliminate the need to de-tassel. Major Goodman, professor of Crop Science, Statistics, Genetics, and Botany at North Carolina State University, writes that most of the corn germplasm in use today in the United States is derived from mixtures of only two major races. The continual reworking of this limited genetic base could diminish breeding progress. Goodman says that the simplest means of increasing the genetic diversity in corn is "to introduce unrelated sources of germplasm, most of which are found in the tropics and subtropics." But he cautions that "to do this intelligently is a formidable task."

Once corn was its own geneticist. Gradually over the past several millennia, humans took over. In the end, the search for larger, more abundant, more uniform ears of corn has resulted in much more of much less.

Seeing the Corn through the Prairie

I am walking through the Neil Smith National Wildlife Refuge just east of Des Moines near Prairie City. On this June day, the coneflowers and milkweed are blooming, but the prairie grasses are short, green, and unremarkable. If rainfall is adequate, in September this grass will be purple, bronze, and gold, the plumed, turkey-footed and tasseled seedheads towering above me like mature cornstalks.

This is not virgin prairie. Rather it is former corn, soybean, and hog farms planted with native grasses and forbs grown from seeds collected

locally—a challenge since only .1 percent of the prairie that once covered Iowa remains. These seeds, local ecotypes, are superior to prairie seeds from Illinois, Nebraska, or even other parts of Iowa because they are adapted to the local climate, soil type, diseases, and pests, and they preserve the local gene pool. Volunteers collected the seeds from within a one-hundred-mile radius of the refuge on tiny postage-stamp prairie relicts along the edges of cornfields, train tracks, or in unkempt cemeteries. Now at more than five thousand acres, the Neal Smith National Wildlife Refuge is the largest reconstructed prairie ecosystem in the United States.

Even though I've lived all of my life in places that were once part of the grasslands that covered the center of North America, I didn't experience tallgrass prairie until September 1989. But when I stood before the open, shaggy, grass-covered earth at Nine-Mile Prairie near Lincoln, Nebraska, shortly after my thirty-third birthday, I didn't see prairie alone. I saw the prairie in terms of the features, structure, and significance of the cornfield.

Now, I still see the prairie through the corn. But, too, I see the corn through the prairie. I see that the cornfield is nothing but corn. But the prairie is comprised of big and little bluestem, Indian grass, switch grass, grama grasses, prairie dropseed, leadplant, sages, milkweeds, wild roses, indigos, orchids, and a baffling array of composites—asters, sunflowers, black-eyed Susans, coneflowers, goldenrods. Corn roots are laterally spreading and shallow and die at the end of the growing season. Prairie grasses are so deeply and widely rooted that there is as much if not more prairie beneath the earth's surface than above, and the roots persist for years, decades, despite subzero temperatures, prolonged droughts, and periodic fires. Even in August when corn leaves form a shady canopy, the cornfield contains more space than plants. Yet tallgrass prairie is so crowded with bunch and sod-forming grasses that walking through pathless tallgrass is like walking through water. In strong winds, cornstalks break but prairie grasses bend. In a breeze, corn flutters its leaves and tassels, but the entire prairie moves as if, as Willa Cather observed, "the whole country seemed, somehow, to be running." There is as much sky

over a cornfield as there is over a prairie, but the defining lower edge has a different cut: uniformly ragged in the case of the cornfield; roughly torn in the case of the prairie.

While a cornstalk is humanlike, I do not transfer this quality to the cornfield, which is but a geometrical arrangement of plants. Prairie grasses and forbs are plants; yet, because of the way in which the grasses move like pelt and the way the boundaries of plant communities shift in response to the slightest change in moisture levels or soil conditions, prairie is mammalian. Cornfields are common, uniform, and abundant; tallgrass prairie is rare and diverse. Yet if all human life were to vanish tomorrow, cornfields, too, would perish. But prairie, whether hand-planted or a never-broken relict of the original prairie, would not only persist but reclaim the land. Corn, once a benevolent deity or the gift of a benevolent deity, has been made over in the image of those who most depend on it, its genetic material and living conditions as controlled as those of hothouse orchids, cultivated irises, test-tube human babies, or race horses. Prairie is self-maintaining, adaptive, wild, abiding.

After I leave the preserve, I begin the drive home to Lincoln—three hours by interstate, but four hours by the two-lane highways that I prefer. In the unmown ditches along the road, I glimpse a few native plants—sunflowers, goldenrods, tufts of little bluestem, and sumacs. Along the edges of one cornfield after another, I glimpse signs advertising Pioneer or Golden Harvest or NK hybrids. When I look down the corn rows, one identical vanishing point after another whips past.

Eight

Enclosures

During Meredith's spring break, she and I visited Nielson Violin Shop, located on the sixth floor of an old building in downtown Omaha. Meredith's violin teacher said that she had outgrown her present violin and needed a more responsive instrument. We wanted to see what was available and for what price.

Meredith knows that because of my claustrophobia, I won't ride elevators. Good sport that she is, she always takes the stairs with me. We ran, then walked, and finally trudged up the six flights, our footsteps echoing, and entered the tiny shop. Mr. Nielsen selected three violins for us to sample; then he led us across the hall, through a room, and into another room with several chairs, a music stand, and only one exit. As

Mr. Nielson laid the violins on a shelf, I surveyed the room. Windows that didn't open. Windows too far from the earth to allow escape if they did open. A door with an old lock and knob. Did anyone know where the key was? And since it was after five o'clock, an office building that was emptying of people. Who would hear us screaming and pounding if we found ourselves locked in this room?

Mr. Nielsen left and returned carrying three more violins, which he set on the shelf and then shut the door behind him. My brain was hot and my hands cold. I didn't care that Meredith was tuning a ten-thousand-dollar violin and practically swooning at the rich sounds that she and the instrument were making. Death was imminent. I opened the door on the practice room. Some relief. As Meredith zipped through a scale, I cracked the outer door. More relief. I sat down and listened to her play. Or rather, I half listened. As long as we were in these rooms and the doors were still on their hinges, danger lurked. I know that my fear of enclosures isn't reasonable. But that is the nature of a phobia: an intense fear of a situation that doesn't merit such a response. Just who did I think would lock me in this room? Mr. Nielsen, the man to whom Meredith's father and I might be turning over many thousands of dollars? Someone from the law office down the hall? Or did I expect some bizarre chain of events to be our demise? Say, the door lock jammed, trapping Meredith and me. Mr. Nielsen, distracted by other matters, forgot us and left for the day. In the night, he was stricken by appendicitis and rushed to the hospital for surgery. When he finally returned to his shop the following week, he smelled our rotting corpses before he saw them. This precise scenario was coaxed into being by the writer in me, who pushes for vivid fullness. Rarely does the claustrophobe in me flesh out my nightmares.

Many of my worst dreams are of being imprisoned for something I didn't do. In other words, it's a double enclosure, entrapment, and imprisonment, that I fear the most. How curious that for almost three years, I visited a man on Nebraska's death row once a month, a privilege and a duty that I shared with two other people from my church. Perhaps it was a desire on

my part to confront my deep, old fear of enclosures with no viable escape route as much as my commitment to social justice that prompted my visits. But when my friend was moved from the Nebraska State Penitentiary in Lincoln to a super-maximum security unit in the Tecumseh State Correctional Institute (not because of any new offense on his part—indeed, he is a model prisoner—but because the old prison was too crowded), my fear escalated to the point that I had to end our visits.

The old penitentiary had been frightening enough. After passing the drug and weapon check and climbing a flight of stairs, I entered a cage, three sides of which were made of Plexiglas and black bars. An unbarred sheet of Plexiglas formed the fourth side of the cage. Behind this glass wall, a guard stood at the control panel. Once I was in the cage, the guard pushed a button and the door slid shut behind me. Then I waited for what was probably a minute or two but seemed like ten for the door that led to the hallway that led to the visiting room to open. For that minute, I was a death row inmate, a princess in a glass coffin, an immune-compromised Bubble Child unable to leave her clear, plastic prison and enter the dazzling, germ-filled world beyond.

My visits at the old penitentiary were exercises in self control. I could tolerate being locked in the visiting room if I was there with my inmate friend, my brother, of sorts, or if I was with other inmates and their visitors, some of whom I was acquainted with. Then my panic was but a soft and distant murmur. But if I thought beyond the moment, my fear nipped and snarled at me. If I was alone in the visiting room or if I allowed my thoughts to race far ahead, I would have climbed the back of one of the chairs and clawed and shrieked at the double windows and the coils of barbed and razor wire beyond. After each visit I felt light and triumphant as I walked out of the building and stood beneath the wide, open sky. It felt scandalous to be so free and uncontained when at that moment, my friend was being led through a series of locked doors into a tiny, locked cell.

Once I visited my friend at the Tecumseh prison. If I had not been accompanied by a friend from church, I might not have survived with my

dignity intact. After enduring the security check, George and I passed through a heavy door that locked behind us and walked a long underground tunnel that extended for miles, it seemed. My senses were on high alert and I was damp with fear. We climbed a small flight of steps and stood before a locked glass and metal door where we rang a buzzer. The visiting room guard did not answer immediately so we rang again. My stomach rolled. If turning around had been an option, I would have taken it, though I knew that I couldn't have left without the visiting-room guard first notifying the security people up front. I focused on George who seemed unruffled by the locked doors, the underground tunnel, and the momentary waits. Finally, the guard buzzed. George and I opened the door and entered a tiny foyer and waited behind another locked door. Again the guard buzzed and we were admitted into the spacious visiting room, a room I couldn't leave without the assistance of a guard. I was glad to see my inmate friend. But, too, I was saddened by what I saw. His face was rounder, his thighs thicker and his once flat belly hung over his belt. Apparently, his move to the new, more punitive and claustrophobic quarters of a maximum security unit had not been easy. We talked, read the Bible, and prayed together, but my engagement wasn't complete. I kept imagining all that could go wrong on the return trip to the front of the prison.

I take this fear of enclosed places outside with me. Most mornings during a two-week writing workshop, Oriana and I walked from the hotel where the faculty stayed to the dormitory cafeteria a few blocks away on campus where we ate breakfast with our students and colleagues. The campus was an oasis of open grassy areas ringed with woodlands, which in turn were ringed by the Baltimore Beltway, six-lane thoroughfares, and a shopping mall. In the mornings and evenings, bird watchers with binoculars lifted to their eyes stood on the sidewalk along the edge of the twittering woods and often the campus herd, about a dozen, well-fed, tame deer, materialized. Urbanites marveled at the presence of these "wild" animals, but I pitied the creatures. If the deer attempted to leave

campus, they would most likely have been hit by vehicles. They might as well have been living behind black bars and Plexiglas.

I preferred walking the sidewalk along the edge of the woods to the cafeteria and classrooms and lecture hall. Oriana preferred the trails threading through the woods. She had lived all her life in heavily forested northeastern places. For her, woodlands were homey and solacing. And she liked that, in the woods, we were hidden enough that our conversations wouldn't be interrupted by dear but advice-hungry students. So some days we walked in the open; some days we hiked through the woods.

On one of our woodland walks, Oriana chose a new route. Instead of leading us to the cafeteria, it led us deeper into the woods. We were enclosed, hemmed in, trapped. I was nauseous and my heart was hammering in my head. I was certain that we'd never find our way out, no one would come to rescue us, and so we would die.

"This is the problem with woods," I snapped at Oriana. "You can't see where you are. We should have stayed on the sidewalk."

"Let's just backtrack and take our usual path," she said calmly. "We'll still have time for breakfast." And we did.

While I love the leaf-filtered light, the lichens and mosses, the songbirds, and the clumps of sweet William phlox in the woods, if I think about where I am when I'm there, as I had that morning when Oriana and I got lost and my attention moved from our conversation to the confining landscape, I am filled with dread. While my fear of this campus wood was far out of proportion to any danger it might have posed on that bright August morning, my fear of forests and woodlands does have a logical basis. Bad things are more likely to happen in closed than in open places. Land crowded with trees, undergrowth, and vines not only keeps me from seeing where I am but it keeps me from seeing who else is there and what dangers await me. People commit crimes in wooded areas or they commit their crimes on city streets or in their backyards and dispose of the evidence in the woods. In fairy tales, the forest and the witches and wolves that live there swallow up or at least threaten to devour the orphans and motherless children who venture into that

enclosed space. If you misjudge how long it will take you to return to your car following a late afternoon hike, unless there's a full moon to light your way, you're trapped.

The most comforting landscape that I know is prairie with an isolated burr oak breaking the horizon and clumps of trees along the waterways. A landscape dominated by grasses and keen-eyed creatures. A landscape that once covered most of the interior of the continent before the prairie was cleared for vast fields of corn, beans, and cattle, before people built cities and towns and planted windbreaks and lined their streets with trees. In grasslands, there is no surprise as to whom or what lies ahead: under a large and open sky, I know what direction I'm facing and what weather is approaching; the darkness is not as dark; the way out is everywhere.

The roots of my fear are ancient and biological. Psychologist Martin Seligman's preparedness theory holds that humans have an inborn predisposition to fear those situations that for most of human history presented a real threat to our survival as a species. In other words, we are biologically prepared to acquire certain fears. That's why the overwhelming majority of our phobias are quite common and fit into one of four categories: fear of insects, snakes, or animals; fear of natural environments (heights, the dark, lightning and thunder, large bodies of water); fear of blood or injury; and fear of dangerous situations (being trapped in a tight space).

The neurochemical firestorm that is the phobic reaction begins in the amygdala, an almond-shaped body of nerve cells in the limbic system, the "life-saving system," the neural structures in the brain that act quickly and instinctively in the presence of danger. According to a study conducted by psychologists at Michigan State University, the amygdala activates more quickly in phobic than nonphobic people in the presence of some fear-relevant stimuli such as, caves, throngs of people, or drops of blood. While the nonphobic person takes time to assess the danger before reacting (a snake with or without rattles?), the phobic person simply reacts, and a harmless green snake evokes the same level of fear as a highly venomous water moccasin.

The persistence of a phobia over years or an entire lifetime may be due to the "vigilance-avoidance" pattern of fear response. When presented with the image of something threatening, say, a photograph of a beautiful rose garden with a spider in a web in the corner, the arachnophobe will initially fixate on the threatening object, the spider, and then fixate on locations in the photograph farther and farther away from the spider, refusing to look at the spider again. Vigilance-avoidance. The Michigan researchers say that this pattern of response interferes with habituation so that one never becomes used to a stimuli. Nor is one able to objectively assess the real threat of the spider in the garden: Is it marked with the black widow's red hourglass on the underside of its abdomen? Is it marked with the brown recluse's violin-shaped spot behind its head? Or is it one of the many timid, nonpoisonous spiders that eat flies, grasshoppers, and beetles and on the rare occasion that it bites a human, leaves a sore, red knot but no sweating, cramps, cardiac arrest, or kidney failure?

Not all experts offer a biological explanation. Freud said that with phobias, the thing feared symbolizes some other fear, usually one that has been repressed. Freud's youngest patient, five-year-old "Little Hans," had such a phobia of horses that he wouldn't leave his house for fear of being bitten by one of the many horses in the streets. Freud theorized that horses symbolized the boy's powerful father, who lavished attention on the boy's mother. Consequently, Little Hans's fear of horses and their large "widdlers," as he called genitals, was really an expression of his oedipal complex and his fear of castration. (Modern psychological theorists would say that a more likely, though less symbolic, explanation for the boy's phobia is the fact that he had once been frightened by the fall of a big, heavy horse.) Freud believed that through psychoanalysis he had discovered the origin and meaning of Little Hans's fear and that through this knowledge had dispelled it.

Otto Rank, a disciple and later a critic of Freud, regarded the distress surrounding one's birth as one of the fundamental sources of any neurosis. In *The Trauma of Birth* (1924), he wrote that "every opportunity which somehow 'reminds' the child—mostly in a symbolic way—of the

birth trauma is used again and again for the abreaction [the catharsis or purging of emotional tensions] of the undisposed-of affect." What could better recreate the sensation of pushing against the not-yet dilated cervix or of being jammed into the birth canal, head first, arms pinned to one's body, than being locked or confined in a small space from which one is powerless to extricate oneself?

While many common phobias seem practical—there are good reasons to fear heights or germs or electrical storms—some seem to be an absurd and outdated waste of time and energy. Why fear all snakes when so few are poisonous and you can live in environments where you will never be surprised by one of the slithering creatures? Why fear the dark when all you have to do is flick a light switch or carry a flashlight to keep it at bay? Yet claustrophobia is thoroughly modern, a more appropriate response now than in our species' distant past, since we encounter many more confining, human-made enclosures than our ape-ish ancestors did. While withdrawing money from an ATM machine, a student in the MFA program in which I taught for seven years, was robbed, locked in the trunk of her Volkswagen Jetta, and driven around Baltimore on a sweltering summer day until her abductor abandoned her and her car. The woman's cell phone saved her life. When the elevator doors finally opened upon a friend of mine who had been trapped there at least half an hour, she was but a damp crumpled heap in the corner of the tiny room. In January 2006, when thirteen Sago, West Virginia, coal miners found the escape routes blocked, they burrowed more deeply into the mine, about two miles beneath the earth's surface in their attempt to escape the deadly levels of carbon monoxide gases that hung in the air following an explosion. Only Randal McCloy, trapped for forty-two hours, was brought out alive. I do not want to imagine the nightmares that any of these people face when they shut their eyes at night or when any door is shut upon them.

Some of the most terrifying enclosures are not made with cement or plastic or metal. When I was eighteen and nineteen and worked as kitchen help in a nursing home, I saw patients who were slumped in wheel chairs or

completely bedridden who could neither speak nor gesture, in fact couldn't move more than an eyelid because of a brainstem stroke or some other brain injury. Because of my fear of being "locked in," I swallow a baby aspirin every other morning. Almost three decades ago in my hometown, there was a woman who was so afraid of the world that she installed an elaborate series of locks and bolts on her doors and windows. When fire broke out in her house, she was unable to break through the layers of "security" and perished in the blaze. As I prepared to marry, I couldn't get the Cole Porter song, "Don't Fence Me In" out of my head. Though I tap-danced to that song in elementary school, though my granny liked to sing and dance to it, and though it was among the piano sheet music that I inherited from Great-aunt Florence (in the lower corner on the front page is a photograph of Bing Crosby and the Andrews Sisters singing this song in the 1944 movie *Hollywood Canteen*), I hadn't thought of it in years. Yet in those last few days before my man and I tied the knot, got hitched, closed the door on our single lives, I found myself singing:

Let me ride through the wide open
Country that I love.
Don't fence me in.

Had I then known about the letter that Amelia Earhart sent to her fiancé on the eve of their marriage, a letter telling him that she would have to have a place apart where she could go "be myself now and then," I might have done the same. When we ended the marriage five years later, I was overwhelmed by conflicting feelings: grief at parting from one I still loved; the rush of freedom and triumph that I'd felt each time I exited the penitentiary after a visit. Perhaps my former husband felt the same.

Each day I pray for a softening of my heart and for the trust and courage that will allow me to leave the confines of my familiar thoughts and routines and to experience what is beyond so that rather than contracting, as so many people do as they age, I can expand my mind, my spirit, my compassion, and my sphere of influence—from prairie horizon to prairie horizon.

Despite the ancient programming associated with phobias, most can be controlled or even eradicated. Cognitive-behavioral therapies, in which phobic individuals learn how to change their thoughts and behaviors by facing their fears, have proven more effective than psychoanalysis with its focus on causes, roots, and origins. "Systematic desensitization," the earliest form of cognitive-behavioral therapy, was developed by South African psychiatrist Joseph Wolpe in the 1950s. Wolpe hypnotized clients so they could remain relaxed in the presence of their feared object or situation. I imagine Wolpe asking his client to imagine sitting in a windowless classroom with the door locked and a telephone in hand and then ratcheting up the level of terror degree by degree until finally the client was crouched in an imaginary storm cellar beneath a locked door and beyond the signal of any cellular telephone tower. Through it all, the client remained calm and relaxed, thus changing her response to the stimuli.

Similarly, "imaginal flooding," a method that developed in the late 1960s, involves thrusting the client into an intensely fear-provoking situation with little preparation and having her remain there until her anxiety lessens. Rather than relaxing, as with systematic desensitization, the phobic person experiences her terror in full flower as she waits in an elevator or an enclosed Magnetic Resonance Imaging unit in order to become accustomed to her fears and anxieties and to let them go. The underlying assumption behind both of these theories is that a phobia will persist, even intensify, if the person repeatedly avoids what terrifies her. Yet by exposing oneself to such situations, the phobic person learns that no real danger is present, and gradually the fear response is extinguished. If I sought this approach of confronting my fear through exposure, I'd begin by reading one of the many biographies of the escapologist Harry Houdini, one with plenty of photographs of Houdini locked in a trunk, a milk can, a federal prison cell, bank vaults and safes, a zinc-lined piano case, bound in a straight jacket while suspended upside down in a water-filled steel cabinet contained within a locked box. The very thought

of reading such a book and gazing upon such photographs makes me queasy. Yet in Houdini's life, I'd find my homeopathic remedy, the like that cures like.

Many experts now believe that the more rapidly one is exposed to the feared object or situation, the more rapidly the phobia will disappear. A study conducted by Swedish psychologist Lars Goran Ost, one of the pioneers of one-day phobia treatments, found that 80 to 95 percent of patients were freed from their phobias after just one session of cognitive-behavioral therapy. And the symptoms don't come back. Completely gone. Not a single twinge of anxiety to breathe through. Not the slightest nudge of fear to tamp down. In other words, with just a one-day investment, I could calmly resume my monthly visits with my friend in prison. I could calmly ride the tiny, old, ornate elevator in the Nebraska State Capitol building to the fourteenth-floor observation deck, where I could survey the city and countryside. I could calmly take a long, undrugged airplane ride to places that I long to see—Russia, Patagonia, China, England. But I have no yearning to take the cure. In fact, if I underwent one of the one-day programs, I'd probably be among the intractable minority who leave the clinic with their fears intact, perhaps even more potent for the attention paid to them. At the end of the day, I'd still risk exposure rather than locking the door on a public restroom. I'd still walk many flights of stairs rather than entomb myself in an elevator.

I'm reluctant to release my fears in part because they are so primal and unreasoned: a sure link between me and my Pleistocene ancestors. But even more, I am reluctant to release my claustrophobia because the rich and defining complex of metaphors that it elicits asserts itself again and again in my writing, provoking me to write about people who are or were entrapped; to sing praises, again and again, of the openness of the grasslands; to explore the ways in which I knowingly or unknowingly confine myself and how I escape—or might escape—those confines. Singer-songwriter Tom Waits said, "If I exorcise my demons/well my angels may leave, too." Take away my fear and perhaps some of the creativity goes, too.

Paradoxically, while I fear enclosures, I crave interiority. This calls for discernment. Is the place within one that will comfort, nurture, and inspire or one that will confine, restrain, and thwart? The difference between the two may not always be readily apparent. The center of the country may be, as cultural geographer James R. Shortridge says, "a place of idealism and democratic temperament" or a place that is "bland, materialistic, and conservative." In other words, the Midwest may be a vital and connected heartland or an isolated backwater. Church may be a place of social hierarchies, of a mean and narrow conservatism, of crippling laws with no other purpose than to control people, or it can be a place where worldly hierarchies are overturned, where one's spirit is empowered to become expansive, generous, all-encompassing, where laws are subordinate to love and mercy. Home may be a place of solace, support, and growth, the place where essays are written, the place where you love and are loved, the place you long to return to when you're away. Or it may be a place of cruelty, fear, and arrested development, the place from which you long to escape and never return.

And, too, the boundaries between freedom and restraint can shift or break down. Until World War I, the Midwest was a place of egalitarian, reform-minded movements and leaders, but following that war, it became increasingly conservative, increasingly committed to preserving the status quo. In the Nebraska city where I now live and the Iowa city where I grew up, I see both strains, the progressive and the conservative. Within the far-flung Church that professes to follow Jesus' Way are those that never question the Powers That Be as well as those who are willing to martyr themselves for speaking truth to power. With the addition or subtraction of one person, with a rise or fall in income, with a realignment of the forces within one, the home that once nurtured or oppressed can become its opposite.

Before I enter an interior place, I try to determine the nature of that place. Will the walls close in on me once I'm within? Will my world and my spirit contract, becoming smaller, more parochial and self-absorbed? Or will this be a place of rest and revitalization; a place where I am most

myself, unburdened with the expectations of others; a place of wild growth, where the wormlike caterpillar metamorphoses into a flying flower, a butterfly; a place that holds the bull's eye, the kernel, the hub, the pith, the tabernacle, the point where the forces converge, the place closest to the vigorous, beating heart? Once within, I remain vigilant. I keep the escape routes open.

Nine

A Bit of Land

Most of my life, I've lived in houses on lots owned by other people. But when I was forty-three, I undertook a thirty-year commitment to purchase a small house and the 50-by-136-foot lot on which it sits near the center of a city of one-quarter of a million people on the western edge of the Midwest, the eastern edge of the Great Plains. At the time, I was primarily interested in converting my monthly rent payments into a sound investment. At the time, I did not foresee the pleasure I would take in house and land ownership. More specifically, I did not foresee the pleasure I'd take in owning a backyard.

In my front yard, I do what's expected of me: though the tree of my heart is the cottonwood, I planted two purple autumn ashes from the

city's list of approved street trees; though I break out in itchy welts when I touch junipers, I trim the shrubs that hide my front foundations; though I seldom see the south side of my house, I planted rose and lilac bushes and poured white marble chips around them; though I find mowing grass to be an enormous waste of time, I keep my nonnative grasses clipped. But in my diverse and working backyard, I do what I want. The border between my informal compost heap and the brush pile is hazy and shifting, permitting opossums, mice, raccoons, and other night creatures to move back and forth between food and cover. I hang wet laundry on the clothesline almost every day. I grow more tomatoes than I can use. I study the paper wasps that nest beneath the eaves of the garage, the grasshoppers that keep my backyard a-twitching almost every August, the painted lady butterflies that sip nectar from the hollyhocks and Canada thistles before I routed out those weeds. I do not mow the margins of my backyard so that I have something more interesting to look at than lawn grasses: Virginia creeper, Solomon's seal, mullein, stinging nettles, curly dock, pokeweed, henbit, hoary cress, violets, and western salsify. When I come upon a grass spider's funnel-shaped web, I mow around it, each web and the supporting blades of grass, an island, my backyard, an archipelago. Any creature that has gone to this much effort to spin such an elaborate, ingenious home is safe with me. I dream of ripping up the zoysia-crabgrass-bluegrass-spurge blend that provides a patchy cover in my backyard and planting buffalo grass, which is wonderfully drought-resistant and seldom, if ever, needs mowing since it rarely grows more than a couple of inches tall. If I planted this shortgrass prairie grass in the front, I might be accused of having an ugly, curly, gray-green, seedy yard. But in the back, I can be outrageous, growing grasses native to Nebraska and sun-drying my family's underwear. Short of raising chickens, letting the Canada thistles take over, or running a scrap metal business, I can do what I want in my backyard.

When I first bought this 6,800-square-foot lot, it wasn't large enough. I schemed ways to convince the owners of the property directly south of mine, where three people and five yappy schnauzers live, to sell me their

property. Then I'd knock down their house, deck, and garage and in that clear space, plant a small grove of peach trees, a prairie wildflower garden, strawberry and rhubarb patches, a vegetable garden four times as large as my present one and build a summer kitchen. In a far corner, I'd set aside a place where Ian could trap rabbits, build a sweat lodge, keep his tent set up most of the year, and park his car, Old Red, once she dies for good.

But five years into my mortgage, I'm overwhelmed by how much I don't know about my 6,800-square-foot parcel of earth. I haven't, for instance, discovered the name of the small shrub with the rough, deeply veined, elliptical leaves and the smooth, peanut-butter-colored stems that grows along the back fence. I don't yet know what accounts for the different soil textures and compositions (crumbly, loamy in the front middle where I grow vegetables; too heavy with clay to grow much of anything along the south fence). I don't understand how table scraps, dog poop, leaves, tea bags, grass, jack-o-lanterns, and bacteria make compost, the brown gold that I work into my garden, or how the black soil becomes the okra's ivory-petaled, maroon-throated, hibiscuslike blooms. I don't yet know the nesting site of the red-bellied woodpeckers that chip and dig for wood-boring insects in my silver maple or where the female grass spiders lay their eggs at summer's end. I don't yet know the configuration of stars and planets that appear over my backyard on a clear night in January or July. I don't yet know the names of even one percent of one percent of what entomologist Edward O. Douglas calls the "creatures that measure the world in millimeters" that also live at my address. Why would I want anything more?

Fences

On the west side, my garden is bordered by a slab of cement, my poor woman's patio; on the north side, it is bordered by the sidewalk that leads to the garage. These are the only straight edges in or near my garden. Until two summers ago, my garden was set off with pieces of fencing that I dragged home from other people's curbside trash. On the north and east sides, I set off the area with a chest-high fence with two-by-four-inch rectangles. On the south side, I unfurled a navel-high coil of rusty fence

with two-and-one-half-inch squares. I enclosed the west side with overlapping pieces of knee-high green fence with eight-by-eight-inch squares. I staked these pieces to PVC pipe and hitched the pieces together with the long twist ties that had once bound the stalks of organic broccoli that I bought at the natural foods cooperative. Each twist-tie wire was encased in a wide, shiny blue or red ribbon that bore the assurance that what grew within my fence was "organic."

But this patchwork fence didn't do its job. My cat, Cletis, slept on the sun-baked soil and the newly unfurled snow pea leaves. Blue jays, cardinals, and grackles landed in the garden to pull worms or eat seeds and bugs. Somehow my beagle, Belle, entered the garden and dug two, wide holes, taking out at least a dozen beet and a few okra plants. When I came out the back door yelling, she tried to exit the garden through an eight-by-eight-inch square, wedging her thick torso half in and half out of that space. In her haste, she pulled the entire chunk of fence from the ground and carried it with her like a stiff tutu.

My garden is as patched together as my fence. Within the fence are beets, okra, onions, snow peas, green beans, bush cucumbers, and some years, eggplant. Initially, I plant in rows, but once the plants emerge, I sow between the rows. Where the seeds fail to sprout either because the blue jays have eaten them or because of some defect in the seed, I replant there, too. I have beets among the onions, okra among the peas and beans, and cucumber plants plugging the corners. I encourage the lamb's-quarters, since I harvest the goose-footed leaves to use in place of spinach. I pull crabgrass, purslane, dandelions, and morning glories. I'd like to permit a few of the latter to climb the fence so that I can enjoy their purple faces in the morning, but one vine produces enough seed capsules, each filled with enough tiny black seeds, to choke out my entire garden, and so I've drawn a hard line.

East of my garden, like suburbs or satellites, are eight tomato plants, six pepper plants, and a hill of zucchini, each plant protected by a tomato cage. By August the tomatoes have outgrown their supports, sometimes even dragging them out of the ground and taking them with them in their reach for the sun or as they topple to the earth from the weight of their

own abundance. Along the outside of the fence, I plant pumpkins, more for the bright, golden blare of their blossoms than for their fruits.

A couple of summers ago, Ian and his friend Franz brought a roll of fence home from the hardware store. I liked this fence the moment I saw it. It was five feet tall and comprised of heavy, interlocking diamonds. A good fence was Ian's way of thanking me for driving down to Kansas City and bailing him out of jail a few weeks earlier. Ian and Franz got right to work pulling up my old fence.

When I came out of the house a few hours later, I noticed that the small weed trees that had offered a slight buffer between my yard and the five schnauzers who bark in unison if I merely entertain the thought of stepping into my backyard, were gone. Rising from holes in the corners and along the edges of my garden were eight fence posts with thick wires. The posts aren't smooth (I can see where the branchlets once had been) or straight, but they are sturdy. The fence is lashed to the fence posts with thick wires. The gate is simply a place where three thick wires bind the fence to the post. To enter my garden, I unwind the top two wires, fold the fence back as if I'm dog-earing a page in a book, and step through. Birds still drop down and pick at the soil, but cats and dogs can't enter my garden, nor can most people, since the fence appears gateless.

When my garden is done producing for the year, I just leave it. In the winter, I like seeing the dry, tan stalks rising above the wind-slung snow or shaking in the wind and knowing that they once bore the vegetables that now fill the plastic bags stacked like bright bricks in my freezer. When Ian and Franz put up this fence, I didn't know where Ian would be during the coming winter—in jail, at home finishing school, or someplace else. But I took comfort in knowing that what he made—my garden fence, each of the four sides matching, walls of diamonds bound to sturdy pieces of former trees—would persist.

Nominal

I keep telling myself that someday I'm going to dismantle the green and white metal shed that crouches behind my garage and haul it to the dump. This shed occupies the least desirable part of the yard for a garden (it's

shady and rocky there) but the most desirable place to set a chair and writing table. This shed keeps me from becoming well-acquainted with the silver maple, Meredith's good-climbing tree, that grows behind the shed and the lush tangle of Virginia creeper that drapes the privacy fence, rambles over the ground, and in the fall, hides bunches of dark blue berries among its scarlet foliage.

There are other good reasons for dismantling the shed. The double doors don't open all the way, so I have to wedge things in and out of the shed sideways. The doors are attached at the top, but not at the bottom, so to keep them from rattling in the wind, I lean bricks against them. Where the shed walls touch the earth, they are dark and nibbled with rust and will soon wear away leaving torn-looking holes. Night creatures and the feral cats that my quiet neighbors on the north feed and water and let sleep in their garage come and go as they please through the hole in the back wall. Between the shed and the garage are items that I'd store in the shed if it was bigger: two sets of homemade bookshelves, partially full cans of paint, bricks, pallets, cement blocks, old boards, the tomato baskets and pieces of fence that once set off my garden. When I was preparing to buy this house and lot from my ex-husband during the fall of 1999, the appraiser described the shed as being of "nominal value." Yet as long as the roof doesn't leak and the plywood floor remains firm, it's worth a little something to me as a storage area, or more properly, as a holding area, a way station in the process of sorting out what is worth keeping from what is not.

Trash belongs in the garbage can by the garage; everything else that I no longer want belongs in the People's City Mission drop box. But some items—an answering machine that answers but doesn't record; a beautifully patterned umbrella that won't stay open; a leaning tower of Easter baskets; a bag of aluminum pots and pans; an enormous, pink cat-litter box with a snap on roof; a broken-handled axe; two boxes of literary quarterlies; a jogging stroller with three flat tires; a Pocahontas tent; a mini-trampoline missing several springs; bags of perfectly good clothes, most of which were yard sale purchases that didn't look as good once I

got home with them; and the broken pieces of a family heirloom—don't fit cleanly in either category. Most of these items will eventually end up in the Mission drop box or in the trash. But it takes me a while to figure out what belongs where. While an item is being stored in the shed, circumstances sometimes arise that make me see it differently. Then I retrieve a Hawaiian shirt and rework it into a Halloween costume; I cover the kitchen floor with a ripped shower curtain when I paint the walls. After a couple of years in the holding shed, I realized how badly I wanted and needed Great-aunt Florence's lyre-legged sewing table. I gathered up the dull, broken pieces and took them to a man who restores wood furniture in his garage. Several hundred dollars later, it is the finest piece of furniture I own.

In the absence of the shed, I might sit beneath my generous silver maple tree as Virginia creeper tendrils haul their lovely vines up the legs of my writing table and chair and wonder about the whereabouts of all those things that I parted with too soon.

Privacy

When I enter my backyard to weed the garden, hang clothes, study the sky, watch bugs, or write essays, I want privacy. Apparently, my neighbors do, too. When the schnauzer owners are in their backyard at the same time that I'm in mine, we try to avoid looking at each other. But if we must acknowledge each other's presence, say, if we accidentally make eye contact, we feel obligated to chat a bit—something about the weather or yard work or their daughter's recent graduation from high school or Angel and Strudel's next litter of puppies or how the cavernous church across the street with its vast parking lots, its seven Sunday morning services, and string of rental houses doesn't pay a penny, not a single penny, in property taxes. When both the schnauzer owners and I are in our backyards, I'm aware of how insubstantial the chain-link fence is that separates our yards.

If my quiet neighbors to the north are in their backyard when I'm in mine, I don't know it unless I hear their voices or their putterings. My garage and their tall, wooden privacy fence prevent us from seeing into

each other's backyards. Last spring, a rotten limb on my silver maple came down in the windstorm, taking a half dozen fence slats with it. The next morning as my children and I were surveying the damage, we poked our heads through the opening into our neighbor's secret garden. Their bit of land was free of lawn grass, matted with creeping myrtle and wonderfully overgrown with knee-high Virginia creeper. Two mature hackberry trees and a young silver maple shaded the yard. From those branches of my silver maple that extend over the fence into their yard, my neighbors had hung a smorgasbord of bird feeders—squirrel-proof tube, cling-a-wing, and chickadee. The picnic table was ablaze with potted geraniums and flats of pansies.

I yearn for such privacy and seclusion. I consider putting up a barrier (a cement wall embedded with geodes? a row of old front doors held in place by a row of frames?), planting a close-set row of fast-growing poplars or constructing an arbor and planting grape vines beneath it along the line where the schnauzer-lovers' lot meets mine. In this walled-in, open-air room, I'd satisfy my longings: I'd keep a milk goat, shine my flashlight into the brush on moonless nights in search of spider eyes, stack and balance rocks, pray, with my hands raised for the winds or the rains to start or cease, learn to walk through the dry leaves and winter-killed weeds without making a sound.

Crows

If I sleep with my windows open in the summer, the crows in the church parking lot across the street awaken me at 5:30 in the morning with their doglike barks. I open the blinds and watch them strut and hop in their pursuit of food. And they find plenty, which leaves me wondering if the Missouri Synod Lutherans trail pieces of doughnuts or make a point to flatten squirrels as they exit the parking lot. By mid-morning the crows are sated and silent. But during Bible School in July, when Bible-verse obstacle courses in the parking lot interfere with the crows' breakfast, they withdraw earlier than usual. "Wicked times!" they caw from the trees. "Wicked times!"

One summer during Bible School, I took pity on the crows. I took a pinecone, filled the spaces between the scales with peanut butter, rolled it in bird seed, and tied it to a branch in a small, dead mulberry tree near the back fence. I invited the crows to help themselves. Later that morning I heard what I thought was a hungry, bleating calf. Perched on the bare branches were two crows, an adult with glossy black feathers and a juvenile whose feathers hadn't yet acquired a shine. The mulberry had never been so full. The adult crow stabbed the pinecone with its black bill. The juvenile bleated unceasingly, its pink mouth gaping, its wings spread and trembling. The adult ignored the young crow, which was, after all, big enough to find its own food. But occasionally the juvenile grabbed the adult's beak and its bleating quickened into an audible, convulsive swallowing.

When the adult flew away, the juvenile fell silent. For the first time it picked and tasted until a crow flew over head, cawing loudly. Then the young crow sprung off the branch and rose to join it in the air. Once again, the mulberry tree was dead and bare.

Each late summer, I collect a new bouquet of shed crow feathers and arrange them in a clay vase on my dresser. One night for reasons I can't explain, I planted a dozen or so of the feathers under the dead mulberry and patted the soil firmly around the quill of each feather.

Buried Things

When Meredith and I moved the boxes and shelves out of the laundry room so that we could wash and paint the basement floor, we saw the south wall bulging hard against the two I-beams. On the east wall, two rows of cement blocks jutted in like a bad underbite. Meredith ran from the laundry room for fear that the house was about to fall down.

From the outside, I had seen that the north and south walls bowed outward as if I'd packed my house with waterbeds and upright pianos. But my house's rather S-shaped foundation looked even more unstable from the inside. Because the ground is level in this part of the city, rainwater doesn't move away from the house quickly enough. Fifty years of water

trickling down the buried basement walls caused them to move and slabs of layers of paint the size of my face to fall off.

For thirty-five hundred dollars, an Omaha contractor offered to bury hooks and beams that would pull my walls outward. For seven thousand dollars, another Omaha contractor offered to rebuild the south wall—the only thing his company would permit him to do with a wall that had moved so far. "Don't let anyone talk you into buying hooks and beams," he advised. For two thousand dollars, a Lincoln contractor offered to remove the paneling and install I-beams on the north and south walls and to correct the poor installation of the exiting I-beams in the laundry room. I mulled over the options. Because I couldn't afford a new wall, couldn't imagine how a couple of buried hooks could move an entire wall, and had evidence right before my eyes that I-beams couldn't stop these walls—I rejected each proposal. Instead, I buried my basement more deeply.

Ian and I dug half moons around the basement windows, a sacrifice since this took out a few purple hyacinths and most of the witchy-smelling basil that grew beneath my east bedroom window. Meredith and I sunk the window wells that I'd bought on sale at Menard's and secured their position with packed dirt. We banked the leftover soil that once pressed against the windows and the topsoil that a man from our church gave us against our moving, bulging basement walls. If these slopes hurry the rain and snow water away from rather than into my basement, perhaps the cement blocks will, for the remainder of my time here, resist the earth's effort to reclaim the void beneath us.

My first garden in this backyard was a small strip along the south fence where I planted tomatoes, peppers, okra, and loofah squash. I couldn't understand why the plants were so spindly and yielded so little until I told one of my quiet neighbors on the north that I was going to plant a couple of trees in my front yard that weekend. "Stay away from the south property line," he said. "Your water pipes run along there." Of course. The tomato roots couldn't plunge because of the pipes, and the temperature of

the water pipes varied enough to confuse the plants as to whether it was time to grow or die. The next year I broke ground for my garden in the front middle of my backyard. As my pitchfork popped roots and loosened the packed earth, I tossed aside the pieces of glass, metal, rusty nails, a spark plug, bottle caps, a blue marble, tin cans, and other buried things that would have impeded the thrust of roots toward the earth's core. Perhaps a former tenant had burned or buried trash there. Now, when the onions don't come up or the beets are stunted, I blame it on buried things: a silver dollar that fell from William Jennings Bryan's pocket as he walked across this bit of land, then part of his farm; projectile points crafted by hunters who once brought down big herbivores in what is now my backyard; the fossilized bones or teeth of mammoth and mastodon who had fallen and were buried by time on this bit of land.

One morning I awakened to find a dead raccoon hanging on my farthest clothesline pole. When the dogs discovered the raccoon, Belle bugled and the schnauzers yipped frantically. Before I hung laundry on the lines near the house, I stopped to admire the raccoon's stout body; its delicate, foxlike facial features; its long, grizzled, black-tipped fur; its beautifully banded tail. Ian explained that he and Franz had brought this car-killed creature home with them so that Ian could remove the skin, stretch, mount it, and hang it on the wall in his bedroom. You better act fast, I said.

The next morning, the raccoon was beginning to stink. By evening, it was in full flower. Get it out of here, I said. Ian and Franz dug a hole beneath the silver maple, buried the raccoon and marked the grave with firewood left over from their recent camping trip. By summer's end, the Virginia creeper had claimed the grave and the markers.

A couple of decades from now, after the firewood and the raccoon's flesh have become soil, I might be digging in that part of the backyard. The bones that I turn up will stir memories in me of the long ago: a raccoon hanging on the clothesline pole; the daily load of laundry that I hung on the clotheslines when my children were at home; Ian and Franz making fence posts; Meredith climbing the silver maple; my neurotic cat, Lily,

finding daytime refuge in the holding shed that used to sit beneath the silver maple; me planting plugs of buffalo grass; my homemade efforts to stop the earth and water from crumbling my foundations; my children and me embedding marbles, bones, buckles, shells, keys, teeth, old coins, arrowheads, and plenty of cracked-open geodes into the cement wall that separates our yard and that of our good neighbors to the south; me at forty-three surveying my own, newly purchased backyard, the bit of land whose wonders I have yet to exhaust.

Ten

The Fence

About ten miles west of the Mississippi River, in southeastern Iowa, are 19,127 fenced-off acres. You will not find this vast expanse named and drawn on most maps.

Yet almost any local can tell you that within the chain-link fence is the Iowa Army Ammunition Plant (IAAP), whose sprawling acres run up against, from east to west, Burlington (pop. 26,048), West Burlington (pop. 3,100), Middletown (pop. 531), where the plant headquarters are located, and Danville (pop. 903). A smaller number of locals can tell you the history of the IAAP. Even though I grew up in Burlington and returned there to live a couple of times during my twenties, it wasn't until almost twenty years after I last left home that I began piecing together the

history and the meaning of "the plant," as we called those 19,127 acres. For instance, only recently have I learned that this fixture, this geographical constant, this western border of my growing-up place was not always there. At the end of the Depression, Des Moines County campaigned hard to win the plant and the government jobs it promised. So that the U.S. Army would have enough land for its factory and compound, the county condemned churches, cemeteries, orchards, and 189 farms in the area. In 1941, what was then called the Iowa Ordnance Plant (IOP) opened to manufacture the artillery shells and bombs that would defeat the Germans and the Japanese.

In the first few years of operation, forty workers died in explosions and fires. Nonetheless, about seventy-five people per day applied for jobs. When recruiters in green army buses with megaphones attached to the tops visited towns in Iowa, Illinois, and Missouri to recruit workers, they returned to Middletown loaded with prospective employees, many of whom would live in tents or trailers until the government built Flint Hills Manor, tiny cinder block houses and apartment complexes. By 1945 the plant employed at least ten, perhaps twelve or thirteen, thousand people (different sources offer different totals) and produced about twenty boxcar loads of ammunition per day. When World War II ended, the plant closed.

But in 1947 the plant entered a new phase: the newly created Atomic Energy Commission (AEC) chose the plant as one of its two nuclear bomb production sites and contracted the Silas Mason Company of Lexington, Kentucky, to run the production line. From 1949, the year when the Russians tested their first atomic bomb, to 1951, when Ethel and Julius Rosenberg were tried and sentenced to death for passing atomic secrets to the Soviets, the plant was the only facility in the United States manufacturing the explosive components for nuclear weapons. Parts were brought in from the atomic design lab at Los Alamos, New Mexico, and assembled on Production Line One. In 1951 the Department of Defense contracted the Silas Mason Company to oversee the manufacture of conventional munitions at the plant as well. All production lines other than Line One as well as the grounds were and are under the army's authority.

In 1956, the year of my birth and the year after my father returned from duty with the army in Korea, the plant began assembling warheads for guided missiles, which included fissionable components made of plutonium and uranium-235. Production of bombs and other munitions for the war in Vietnam drove employment at the plant from 2,000 in the early 1960s to 7,610 in 1968. Then, the plant was one of Iowa's five largest employers. In June 1973, following my junior year of high school, the AEC announced that it was phasing out its operations at the plant. That same year, the AEC, which had staunchly denied ever making nuclear bombs at the Middletown facility, for the first time admitted that most of the United States' nuclear weapons had been assembled there—just a few miles from the house where my family and I grew beans and tomatoes in the backyard, ate catfish from the Skunk and Mississippi Rivers, drank milk from local cows, hung wet laundry on the clothesline, and on warm evenings, sat on the front porch. In July 1975, the government moved its atomic weapons production to the Pantex facility near Amarillo, Texas. Now the Mason and Hanger Corporation (formerly the Silas Mason Company), employs hundreds rather than thousands of people at the IAAP in the production of detonators, mortars, tank ammunitions, and warheads for high-precision missiles.

You don't have to ask anyone to know that the compound within the chain-link fence is off-limits. Posted at regular intervals along the fence are signs that say, "U.S. ARMY / RESTRICTED AREA / Warning" and several lines of small type that I've never gotten close enough to read. You cannot enter the area within the fence unless you go to one of the checkpoints where red lights flash and a guard, probably armed, stands waiting. I never noticed if the strands of barbed wire atop the fence have always been there or if a less easily scaled fence was a response to 9/11.

How does something firmly lodged in the periphery move to the center of one's awareness? Does the shift of focus occur accidentally or does it occur intentionally because you, wearied of one preoccupation, surveyed the landscape for a fresh, new center of your attention? Or does the new

thing or idea move toward the center in response to other movement? The masseuse soothes away the soreness in the muscles of your sacrum but in response to this new balance, the pain moves to the front of your left thigh. Perhaps a more apt metaphor is that of a runaway chain reaction. One neutron cleaves an atom of uranium, which releases two or three more neutrons, which in turn fission other atoms of uranium, and so on, until finally a blue flash and a blast of energy so great that you cannot ignore it is released. Then you must decide whether to flee, to live with the ruins, or to rebuild.

First we learned that the land and the water were poisoned. In 1980, several years after the AEC left Des Moines County, a site study by the Environmental Protection Agency (EPA) revealed that hazardous wastes had not been properly disposed of at the plant. Eight years later a federal study referred to the plant as a "horror story" in terms of waste disposal: toxic waste dumps and lagoons; a sedimentation area where explosives settled out and flowed into the creeks; soil contaminated with acetone, benzene, barium, lead, mercury, and other chemicals and the explosives TNT, DNT, and RDX. In 1989 the IAAP was named to the federal Superfund list of worst toxic waste sites. The EPA predicts that the army's cleanup of the plant's 170 contaminated sites will be completed in 2010 and at a cost of about $100 million. The cleanup of the mile wide and five-or six-mile-long plume of groundwater contaminated with RDX, an explosive used in the manufacture of conventional weapons and known to cause cancer and seizures, will be completed in 2040.

Next we discovered that the workers had been poisoned. In December 17, 1997, fifty-nine-year-old Robert Anderson wrote a letter to Iowa senator Tom Harkin. The letter was just an exercise, Anderson's response to a take-home essay exam for a course called Man and the Environment, at Southeastern Iowa Community College in West Burlington, but it served to tear down the fence, to rip the veil, to fission the first atom in the chain reaction, to move what had been peripheral for most of us to the center.

As an employee of the plant's physical security department, Anderson had signed for raw materials shipped to the plant from Rocky Flats Arsenal in Colorado and the gaseous diffusion plant in Oak Ridge, Tennessee. "To do so," Anderson wrote, "I had to physically account for every serial numbered item of a radioactive nature in each shipment." Anderson and the other security guards wore steel-toed shoes and military police uniforms but had not been issued lead-lined suits, masks, film badges, or monitors. After Anderson signed off, workers with protective suits and Geiger counters checked the cargo for radiation. In 1988 Anderson was diagnosed with non-Hodgkin's lymphoma. Three others who worked with him have been diagnosed with the same disease. Because of his exposure to the enriched uranium, plutonium, and other radioactive materials in those shipments, Anderson had a football-sized thyroid gland removed from his neck in 2004. His five-year employment at the plant may have sickened his family, too. His eldest daughter had thyroid cancer; his youngest daughter has an enlarged thyroid gland. In his 1997 letter to Senator Harkin, Anderson warned that the toxins were not confined to the plant compound: "I observed the disposal of retired weapons which were frozen, cracked apart, and burned in open field burning methods. If any radioactive material leaked from the core into the explosives, they were certainly placed into the atmosphere by burning. I know of three dairy herds within five miles of the burning."

After receiving Anderson's bombshell, Harkin's military aide, Pete Tyler, contacted the Department of Energy (DOE) about Anderson's claims—logical, since the newly created DOE had assumed control of nuclear weapons plants after Congress abolished the Atomic Energy Commission in 1974. The DOE told Tyler that the IAAP had never manufactured nuclear weapons. Tyler must have thought that Anderson was crazy. But the following year, while touring the plant, Tyler watched a promotional video about its history. Indeed there had been a nuclear weapons plant in Middletown, Iowa. Yet the DOE had forgotten or was ignoring the existence of a major nuclear-weapons plant—once the *only* nuclear weapons plant in the United States. Consequently, when Congress ordered the DOE to screen

the former employees of nearly four hundred nuclear weapons and power plants for health problems in 1993, the IAAP was not on the list.

Senator Harkin issued a press release announcing that the IAAP had "secretly made nuclear weapons from 1947–1975." The *Des Moines Register* broke the just-surfaced secret: "Plant Kept Lid on Its Nuclear Role." Robert Ray, who was the governor of Iowa when the AEC phased out its operations at the IAAP, said that he had not been aware of the plant's nuclear history. While the federal government wouldn't admit that it had conducted nuclear testing at the IAAP until 2000, the plant's nuclear past was not a secret. A little research would have revealed to Harkin, Ray, and the *Register* that the latter had published an article on June 28, 1972, entitled "AEC to Close Iowa Nuclear Arms Plant," stating that the EPA had been evaluating and restoring the IAAP grounds for almost twenty years, and that in 1991 Harkin himself had toured this utterly forgettable nuclear bomb factory.

Or they could have checked with the people of Des Moines County, some of whom remember that trucks identified as belonging to the AEC rolled by on U.S. Highways 34 and 61. Or that outside the administration building in Middletown sat a replica of the Fat Man nuclear bomb that the United States dropped on the people of Nagasaki, Japan. Or that a billboard near Highway 34 had announced that the IAAP was home to the army and the Atomic Energy Commission. Or that the Middletown 4-H Club was dubbed the Middletown Missiles. Or they could have talked to Middletown mayor Tal Hinesley, who would have told them that the people of Middletown used to brag about how high they were on the Soviet Union's target site list for intercontinental ballistic missiles. Or they could have talked to long-time Middletown resident Howard Streed, who told the *Burlington Hawk Eye*, "We knew they were assembling nuclear weapons. It wasn't a secret, it was just that [workers] didn't talk much about what went on there, and you didn't ask questions."

Workers didn't talk because they'd signed an agreement that they would not reveal anything about their work. We didn't ask questions because we didn't yet know that the land, water, air, workers, and residents were being

poisoned. Documents about the cleanup efforts that the AEC claimed to have made before it left Des Moines County seemed to have disappeared, as had the health and employment files on thousands of workers. In February 2004, Harkin said that he suspected that many of the medical claims filed by former plant workers had been lost or "purged" by the Departments of Labor and Energy.

And the fenced-off 19,127 acres do not appear on most maps.

Buried secrets eventually work their way to the surface.

For decades, the Department of Defense's policy had been "to neither confirm nor deny the presence or absence of nuclear weapons at any general or specific location." Just mentioning that nuclear weapons once existed at a facility, even a long-closed one, was considered a national security threat. Former AEC workers finally gained the right to speak to their health care providers about the chemicals and radiation to which they suspect they were exposed through an amendment that Harkin attached to the National Defense Act of 2001. And none too soon. A study by the State Health Registry of Iowa, covering the years 1969 through 1999, found that residents of Middletown and West Burlington who had not worked at the plant, as well as former plant employees, showed a pattern of developing leukemia, lung, eye, mouth, liver, and other cancers at a rate several times higher than that of other Iowans. At Harkin's prompting, the DOE began searching for records about the AEC's activities at the plant and the health of those who had worked there. In September 1999, the DOE found about one hundred boxes of records marked "Burlington" in a storehouse at Pantex, near Amarillo. Though often vague or incomplete, these records serve to loosen the earth around buried shards of memory and history.

The recovered documents reveal that from 1965 to 1973 workers test-fired the firing and trigger components on 701 nuclear weapons at Test Firing Site 12. These "hydroshots" released about 8,800 pounds of depleted uranium (DU) into the air and soil. The clouds of DU were big enough that officials considered flying airplanes through them to see how they

reacted to the radioactivity. Some Middletown residents remember that after an explosion, a fine, greasy black dust settled on cars, lawn furniture, gardens, sidewalks, skin.

After a test-firing, the hot shards of the DU were collected and shipped to Pantex for disposal. George Fish, one of the people who conducted the hydroshots, told the *Hawk Eye* that he and his coworkers had collected the chunks of DU with their bare hands, until someone in a position of power decided that they needed protection and gave them cotton gloves to wear. An appropriate measure at a plant where no nuclear weapons were made or tested. Fish was successfully treated for bladder cancer in 1988. Now, several of his firing-site coworkers have the same disease.

In December 2000, inspectors from the DOE's Oak Ridge National Laboratory found shards of DU at Test Firing Site 12 in the west-central portion of the compound. Most of the fragments were two to three inches long and about one inch thick and found at least seventy-five to one hundred feet away from the detonation site, suggesting that they were part of the fallout from the blasts. Apparently, cycles of freezing and thawing carried the once-buried shards to the surface.

Buried secrets continued to surface. Also in 2000, cleanup officials found large deposits of the heavy metal barium, which caused them to stop their restoration of that site. According to the Agency for Toxic Substances and Disease Registry, contact with barium through drinking water can damage the liver, kidney, heart, and spleen; the health effects of breathing or touching barium are still unknown. Apparently, the AEC dumped the inexpensive barium on the ground as part of its "cleanup" before moving to Texas. The barium leached into the groundwater and flowed into Spring Creek. In addition, in the late 1940s and early 1950s, workers mixed large amounts of barium nitrate and TNT to produce the explosive baratol. The explosive wastes were disposed of in opening burning, which Ken Howe, IAAP cleanup project manager for the Army Corps of Engineers, says was legal at the time. The baratol that didn't burn was taken to the west burn landfill and left there.

Not all poisonings left such clear evidence. Recently declassified documents support accounts of workers who either witnessed or heard about a "blue flash" during the summer of 1972 or 1973. Apparently, critical mass, the amount of fissionable material required to sustain a chain reaction, had been reached, unintentionally, in one of the "gravel gerties"—round, earth-and gravel-covered concrete rooms where nuclear weapons were assembled or dissembled. What most likely followed was a sudden burst of energy and lethal radiation accompanied by a blue flash—just a few miles from the route I took on my bicycle to driver's education classes at the high school during the summer of 1972 and just a few miles farther from Crapo Park, where my friends and I whiled away many evenings during the summer of 1973.

Some experts doubt that a blue flash occurred. They say the glow may have been caused by radioactive tritium or a chemical fluorescence or phosphorescence. Or perhaps it was Cherenkov radiation, the weak, blue-white glow emitted when charged particles pass through water or other transparent medium faster than light.

Yet some officials are taking the reports of the blue flash seriously. Thirty years after the alleged blue flash, the EPA is looking for such evidence of criticality as fission material embedded in glass or lingering radiation. Iowa governor Tom Vilsak joined Iowa senators Charles Grassley and Tom Harkin in their request for a "fence-to-fence" aerial radiological survey of the compound—which the army resisted but finally undertook in 2002. And the University of Iowa's College of Public Health interviewed eye witnesses who report that the alleged flash killed at least two workers, one the day after, one a year later. Just two workers: a subcritical mass, incapable of starting and sustaining a chain reaction.

Other secrets will work their way to the surface, too.

I now live 320 miles west of the plant. About once a year, my children and I visit my growing-up place. A couple of times a week I read an issue of my hometown newspaper on the Internet. But the week of Christmas 2003, I found myself reading not the letters to the editor or the obituaries or the

"Family Album" but the then 170-some articles that the *Hawk Eye* keeps posted in a standing section on its home page entitled "Hidden Enemies: Unknown Dangers at the IAAP." I had avoided this section before, since I did not want to open myself to such tragedy. But during the week of Christmas 2003, something moved in me—or toward me. As I poured over the accounts of former plant workers for whom breathing is a battle because of emphysema, chronic beryllium disease, and asbestosis, as I read about their lung, leukemia, lymph node, bladder, and liver cancers, and the medical bills that the federal government will not pay, despite legislative promises, I fought the urges to scream, cry, vomit, and tear up anything I could get my hands on. What had been lodged in the periphery had moved to the center. I could not ignore it.

On Christmas Eve I called my family of origin. My parents, my brothers and their families, all of whom now live in Ohio, were at my parents' house that evening. As they passed around the telephone, I offered each of them Christmas greetings, then asked them what they knew about the plant. Vaguely, each knew of some trouble there—people getting sick, polluted well water, something like that. But as we talked, our memories, like the once-buried shards of depleted uranium, worked their way up through the root hairs and leaf litter to the surface, the emergence of one memory loosening the soil and opening the way for another and another.

My mother remembered that every Wednesday she heard booms and felt the earth shake as workers at the plant tested weapons underground. Our German shepherd, Max, would squeeze behind the toilet in the storage closet and wait out the testing. The water in our toilets rocked back and forth and our pendulum clock stopped. My mother remembered hearing about a cluster of birth defects in people and animals in or near Danville and she recalled the story of an employee who had gotten both of her hands blown off in an explosion. As she spoke, I remembered that one day when I was in seventh grade, my friend Corrine, with whom I walked to school every morning, was upset when she arrived at my house. She said that an alarm had sounded on one of the lines at the plant the previous day. Out of fear for his coworkers, Corrine's father had cried.

I don't remember if anyone had been hurt or killed at the plant. What rattled me is that I had never heard of a man crying.

My father, who was born in Burlington in 1932, remembered that during World War II, armed guards were posted in towers at short intervals along the fence surrounding the plant. He remembered that some workers had yellow hands because of the chemicals they worked with. I had read in the *Hawk Eye* that some people called them the "China ladies." The water in Spring Creek used to run red, he said. I told him that was from the RDX or TNT. "Did you fish there, Dad?" "Nah. Nothing grows in Spring Creek." It would be a year and a half before my father would tell me that his father had worked as a custodian at the plant in the early 1950s until his death in 1953. "Why didn't you tell me that before, Dad?" I would ask incredulously. "You never asked," he would answer.

My brother Jamie remembered that, each fall, he hunted and fished within the fence with members of the Long Creek Conservation Club, and we ate the game that he brought home. He remembered that a friend of his rented a portion of the buffer zone from the plant and grew corn there, which he sold. Jamie remembered that in the 1990s the army paid to connect households southeast of the plant to water from Rathbun Lake, one hundred miles away. Others who lived near the plant could pay to connect to this safer water. "The army told us that our well water was contaminated from agricultural chemicals," Jamie said. "But we knew the contamination was from the plant." Tapping into the safer source of water cost at least four hundred dollars, and monthly water bills followed. My parents who, at the time, lived one mile north of the fence in rural West Burlington, chose to continue drinking well water. In June 2001, some wells near the plant still contained twenty times the safe level of the explosive RDX. "We just didn't know," my mother said.

My brother John remembered that when his friend reported to work at the plant, he hung his identification badge on a wire so if there was an explosion, officials would know who had been killed. Eventually, the meaning of this routine action "got to him" and he quit. As John spoke, I remembered that I had been inside the fence. When I was in high school, I

had a friend whose family lived in officer's quarters inside the compound. Usually my friend came to see me, but one evening I drove to Middletown to visit him. Vaguely I remember checking in at the guard station and finding the building where my friend and his family lived.

My sister-in-law Kim remembered that her dad drove a truck at the plant for a few years in the late '60s and early '70s, but other people loaded and unloaded the material. As she spoke, I remembered that my maternal grandfather, an ironworker, had worked at the plant for a brief time, though I don't know when or what he had done. I asked to speak to my mother again.

"What did Paps do at the plant?" I asked her.

"He built it. We were on the way to Texas for his next job when the Japanese bombed Pearl Harbor. So his work at the plant was done by then."

Another memory broke the surface. "When did Paps have bladder cancer?"

"When you were little," she said. Then she told me that her cousin's husband had had bladder cancer and my father had had a precancerous condition in his bladder, also when I was a young child. All three men were successfully treated. I was stunned. My grandfather worked at the plant before it produced nuclear bombs. The only common factor in these three men, none of whom were blood relatives, is that they lived in the vicinity of a nuclear weapons plant. Coincidence? A direct link?

I had to find someone who had worked inside the fence and would speak frankly with me about what he or she had known at the time about the work that was being done there. When I telephoned my mother's friend Bonnie, who lives in West Burlington, and told her what I needed, she told me to be at the Burlington Bowl at 1:00 Tuesday, December 30. A couple on her bowling league once worked on Line One. Mary has cancer. Paul has something wrong with his lungs. While Paul bowls, Mary will talk to you.

The Burlington Bowl looked no different than when my parents bowled in a league there in the early 1960s and Jamie and I played in the playroom.

When I asked Bonnie how I'd find her and Mary, she told me to look for a bowling league comprised of senior citizens. But with the exception of a few mothers who had taken their children bowling during their children's winter break, that described almost everyone at the alley on a Tuesday afternoon. As I strolled past the bowlers and the people watching them, a woman called my name. It was Bonnie. She and two other women sat at a table, sipping coffee and eating chocolate pecan turtles. A sign near the front door identified Mary's husband as the number three ranked men's senior bowler at the Burlington Bowl that week.

After we introduced ourselves, Mary, an eighty-three-year-old woman with short gray hair, intelligent green eyes, and wire-rimmed glasses, asked me to whom I was related. I told her that Richard, the former mail carrier, was my uncle and that I was some relation to the various George Knopps. I was about to mention my parents' names, when Mary said that she knew Richard. Before I'd even opened my notebook, she plunged into the bureaucratic snarl involving her and Paul's medical compensation. "We went through three outfits," she said. "Seattle interviewed us. Then Denver, then Iowa City. They don't tell you much. They want to confuse you, is what they want to do."

The interviewer asked Mary to explain the work she had done. "How could I explain to her what Line One is? I told her that I was an expediter. Well, what's an expediter? Do you know?" Mary laughed. "I hauled stuff around. I worked on all the lines at one time. I was also an inspector." As expediter, Mary used a small fork lift to deliver items to different buildings. Among the items she hauled were tubs of asbestos and beryllium, both carcinogens, the latter, a light, strong metal used to make spark-free tools and nuclear bombs. "I sat and ate lunch on those tubs," she said. "I didn't know I was working with that crap."

Mary started working at the plant sometime in the 1950s—she can't be more precise than that. First she was assigned to the army's Line Seven, where she "worked in black powder." Then she moved to the army's Line Six where she worked with lead azide, a highly explosive and toxic crystalline compound used as a detonator. Eventually, she moved to Line One. Mary liked her job operating the forklift because it took her to different

parts of the plant. When she was laid off in the early 1970s because the government moved nuclear productions to Amarillo, she was hired at another local factory where the Freon and ethyl acetate that she worked with made her sick, and the job required that she stay in one place. After just one year, she quit. "I loved my job at the plant," she says. "Everyone there loved their job."

Paul worked at the plant for thirty-eight years, twenty-eight of those on Line One, where he maintained the air conditioners and refrigerators which regulated the temperature so that the bomb materials wouldn't explode. And he cleaned the filters. "You know what you find when you change your filters at home," Mary said. Now Paul receives $413 per month in retirement, a fixed amount. His lungs are scarred and not all of the tests that he has received in his attempt to qualify for compensation were covered by Medicare.

Under Subtitle B of the federal Energy Employees Occupational Illness Compensation Program Act of 2000 (EEOICPA), Mary, Paul, their Line 1 coworkers, and workers at other DOE facilities can receive a one-time payment of $150,000 plus medical benefits from the federal government in a program initially administered by the DOE. The families of former nuclear workers are eligible for up to $240,000. The remaining 90 percent of the IAAP employees, about thirty-five thousand people, worked for the army manufacturing conventional artillery and ammunitions. Though they, too, worked with explosive and disease-causing chemicals and sometimes filled in on Line 1, until recently, they were ineligible for compensation, since, as the December 24, 2002, *Des Moines Register* reported, "Efforts to get the tight-lipped Army to take responsibility for its workers don't seem to be going anywhere, frustrating even Congressmen." In 2004, over a year after I interviewed Mary, Congress would pass Part E as an amendment to the EEOICPA. This allowed those who worked for the army to be compensated for disabilities and lost wages up to $250,000 for illnesses caused by exposure to toxins on the job.

But the rules made it difficult for former nuclear workers to collect this payment. In the early years of the program, claims by Line One employees

or their survivors were sent to the district office in Seattle, Washington, along with medical documentation, where they were reviewed by a claims examiner. The claims office requested records from the DOE to verify the worker's employment and exposure to toxins. If the examiner determined that the claimant's illness was more likely than not work-related, then the examiner sent a "recommended decision" to the claimant. If the claimant decided to proceed with the process, his or her claim was forwarded to the National Institute for Occupational Safety and Health (NIOSH) where examiners tried to determine the claimant's level of exposure to radiation, beryllium, or silica. "Dose reconstruction," it was called. Then the panel of physicians reviewed the reports and decided whether or not to compensate the claimant.

According to the General Accounting Office, the DOE required about seven years to review the backlog of claims. In response to this sluggish pace, Senators Grassley and Harkin cosponsored legislation that transferred the processing of claims from the DOE to the Department of Labor, the latter an office with more expertise at handling workers' compensation cases. This legislation passed in 2004, despite opposition from the Bush administration. At the time of the transference, fifteen hundred former plant employees had applied for compensation; a mere thirty-one to thirty-three claims (different sources report different numbers) had been granted, each for exposure to beryllium, none for cancer.

The claims-compensation process is slow and confusing. One of Mary's blood tests came back "clear," but she doesn't know what she had been tested for. Officials said that they couldn't compensate her for her breast cancer until they knew what she did, where, and for how long. But until her records were found or declassified, these questions couldn't be answered. In October of 2004, Mary would receive $150,000 in compensation, money she would use to pay bills, to buy Paul a new truck, and to take the researcher at the University of Iowa's College of Public Health, who had been particularly helpful advancing her claim, to dinner. Money she thought she would never see. But the big breakthrough would come one and a half years after I interviewed Mary. In 2005, a study conducted by

the NIOSH revealed little or no radiation screening had been conducted at the plant prior to 1975. Therefore, dose reconstruction was practically impossible—as Mary already knew. Rather than further penalizing former Line One employees for the AEC's shoddy record keeping and negligence regarding radioactive monitoring, the NIOSH recommended that the government abandon the dose reconstruction requirements and grant workers' claims based on at least 250 days of employment on Line One between 1949 and 1974 and the development of one or more of twenty-two radiogenic cancers. "Special Exposure Cohort," this more streamlined approach is called. Health and Human Services secretary Mike Leavitt approved the plan; it was passed in both houses of Congress. On June 19, 2005, in one fell swoop, 364 former Line One workers became eligible for $150,000 in payments and free medical care.

In June of 2005, Paul would receive compensation for beryllium and asbestos poisoning. Though he had three surgeries for work-related skin cancers, he wouldn't be compensated for that disease. "It's so spasmodic," Mary says, when she considers who has and hasn't received compensation and for what reason. As of 2006, 750 of the approximately 4,000 former employees of the AEC have received monetary compensation.

Mary remembered Line One as being four miles long and comprised of five buildings. Bomb parts were kept in the first building, mounts in the second, the castings that were taken into the hole and put in a lathe in the third building, and assembled bombs were stored in the fourth. "What was in the fifth building?" I asked. Mary paused. She turned to Paul, a tall, smiling man in a plaid flannel shirt. "How many buildings were there on Line One?"

"At least fifty," he answered.

"Fifty?" She looked at me. "See? What is Line One? Nobody knew."

To wear the badge that gave them clearance to work on Line One, Mary and Paul signed a security oath, promising that they would not reveal anything about their jobs to anyone.

"So you two didn't talk to each other?" I asked.

"Oh, we talked," Mary said. "But not about our jobs."

They also had to swear that they had never belonged to one of the organizations on a long list believed to have Communist alliances, a list that included the Daughters of the American Revolution. When I asked Mary if the secrecy oath was necessary, she asked me if I knew everything about my job. I told her that I had a pretty good idea of how things worked. "You're not working for the government, are you? At the time, the government was justified because of security. Now I think it's terrible."

When Mary arrived at work, she went to the "change house." Since even a pebble in one's shoe was enough to raise the spark that caused an explosion, workers removed all of their clothes except for their safety shoes. Then they put on cotton underwear and uniforms provided by the plant, since cotton doesn't spark as easily as other fabrics. At the end of the shift, workers showered and changed back into their street clothes. Mary wore two badges, one giving her clearance to various buildings and a film badge to tell if she'd been exposed to radiation. But there was no follow-through, she said. "If anyone told you they knew about the radiation, they were lying." Like most factories, production at the IAAP was compartmentalized and workers only knew their small part of the larger process. Though Mary delivered items to different buildings, she couldn't see what the workers were doing. "We didn't know anything. It's a wonder we knew the time of day."

In such a hazardous place, seemingly innocuous behaviors could kill or maim. Some speculate that a keg of explosive powders exploded, killing three of the four women who sat down upon it during a break, because a nearby cricket had rubbed its legs together, creating just enough friction to ignite the powder. The woman that my mother knew of who had lost both hands in an explosion had jumped up to sit on a table next to a box of lead azide, which then exploded. Once Mary was leaving a storage area just as it blew up. "I was too stunned to be scared. I didn't know what had happened until I got to the change house."

In spite of the dangers, Mary loved her job. She had a friend who worked on Line Five-B, where workers with yellow-orange hands measured powder into bomb boosters in tubes and put the lids on them. This powder,

probably the explosive tetryl, a yellow chemical that stained the workers' hands, neck, and hair, caused skin rashes and asthmalike conditions, is now considered an environmental hazard and no longer manufactured in the United States. Once when Mary was inspecting on that line, her friend said, "I'm going to put your name in a bomb." The friend wrote Mary's name and address on a piece of paper, which she placed in the booster tube. Mary forgot about this until she received letters from thirty-one love-struck marines in Vietnam. One soldier wrote that he and the others had voted Mary the queen of the bomb dump. Mary was flattered but puzzled. "What's a bomb dump?" she asked. A marine wrote back that it's where the various types of ammunition were dumped in a heap. Then the men sorted it. One marine, Dan, wrote to ask Mary if he could call her "Mom." As Mary told me this, her eyes filled up. She and Dan exchanged letters for two years, ultimately meeting when he returned home to Napa Valley, California, and visiting several times after that. Dan married, opened a jewelry store, and then died young of a heart problem.

Mary doesn't blame the plant for her and her coworkers' illnesses and deaths. Nor is she angry. "It's not the plant," she said. "It's the government people or officials or whatever you call them, who are ignoring people who are really sick. All we were doing was helping our country."

A fence can stoke one's desire and curiosity or it can quench them. Prior to the week of Christmas 2003, I never wondered about the compound within the chain-link fence. Physically and intellectually, this blank spot on the map was off-limits to me.

I've seen portions of the east fence. When I was in my twenties, my parents lived on an acreage near Burlington, about a mile or so east of the fence. On the farm immediately west of their property was a dairy farm, perhaps one of the herds that Robert Anderson mentioned in his letter to Senator Harkin as living within five miles of the place where "retired" bombs were "frozen, cracked apart and burned in open field[s]." When I was a child, my parents bought big jars of raw milk from those cows, believing that it was better for us than store-bought milk.

I've seen most of the fence on the north side of the plant, since it runs parallel to U.S. Highway 34. Mary said that Line One in the northeast corner of the compound is almost visible from Highway 34. As I left Burlington on New Year's Eve morning 2003, I caught glimpses through the north fence of the water tower, trucks, woodlands, rows of corn stubble, and the abandoned, run-down, yellow-brown buildings. I looked for but did not see the earth-covered igloos where hydrogen bombs were assembled or stored. I imagined clouds of radiation rising above the compound and being pushed east by the prevailing winds, over the fence, over West Burlington, Burlington, the Mississippi, and into Illinois, the early and the delayed fallout falling equally on the just and the unjust.

Mary says that she is not angry at the plant about her and her coworkers' illnesses and death. But I am. Perhaps when I have lived with this knowledge as long as she has, my anger, sorrow, and despair will be transmuted or spent. But in the meantime, I am offended that people in high places felt that people in a seemingly insignificant corner of Iowa were not worthy of honesty and respect and were, in fact, dispensable. I am angry that so many people were injured, sickened, and betrayed because of the obscene belief that it is bombs rather than truth that makes us free. I am dismayed that I cannot tell the story of my life without including details about the nuclear bomb factory and that I cannot tell the story of the nuclear bomb factory without including details from my and my family members' lives. I am deeply unsettled that my growing-up place was not the safe place I always thought it was. Would my father be suffering from the cancer that is spreading in his spine and collarbone if he had lived in some safer place?

While the health of the IAAP workers may have been more neglected than that of the workers at other nuclear plants, their suffering is not unique. In December 2002, the *Des Moines Register* reported that 37,168 workers (or their survivors) from 340 DOE facilities had applied for compensation under the EEOICPA, and every state in the nation has at least one nuclear facility where former employees can't obtain federal compensation for their suffering and losses. While monetary compensation will not heal

the former IAAP workers or lessen their suffering or that of their loved ones, it is vital that they receive it, since it carries with it an admission, of sorts, of wrong-doing on the part of the federal government. Mary doubts that people have learned anything from the human and environmental tragedies caused by the plant. "I personally don't think our government cares," she says. "Not about human beings."

Thirty-three years after the DOE closed Line One and the army drastically cut the manufacture of conventional weapons, the people of Des Moines County and the surrounding area are still not safe. The groundwater will not be drinkable nor the soil free of toxins for as far into this century as I can see. The General Accounting Office estimates that the removal of unexploded munitions and toxic wastes found thus far on fifteen million acres of closed down U.S. military sites will take 75 to 330 years. In November 2005, a cleanup team from Plexus Scientific Corporation, a Virginia-based government contactor, removed seventy-five tons of asbestos from the nearly thirty buildings on the army's Line Seven, where Mary once worked, and planned to burn the buildings and their contents in an effort to rid the area of hidden explosives. "Thermal decontamination," they call the process. Of course the plant needs to be cleared of unexploded munitions and toxic wastes, if that is even possible, but at least some of the buildings should remain as testimony to what our government did not tell us and what we did not ask. A Cold War museum and a memorial to what many have called the "Cold War Warriors" who worked there is what I propose.

When I consider the statistics about the number of people injured or sickened from their work and the related environmental devastation in my growing-up place, I am incredulous. Sometimes I reject these statistics. Other times I work to connect the dots between what I'm told, what I suspect, and what I know. I didn't discover the most crucial connection until long after I'd completed the research for and the writing of an earlier version of this essay. I had considered that version finished—enough so that I read excerpts from it at two public readings and submitted it to the *Missouri Review*'s 2004 essay contest, for which it received honorable

mention and a cash prize. But over a year later, I discovered the crucial link, the deep story that I needed to tell about the plant. It involves a frightening memory that I've carried with me since I was about six. At that innocent, preliterate time in my life, I saw a barren landscape on television. White words that I couldn't read hung over the bleak scene. An authoritative male voice said something to the effect that the Russians were going to come here and bury us alive. The announcer's words and the image of the cold, gray landscape terrified me.

Forty-some years later, I sought to learn the context of the news brief or public service announcement that I heard as a child. I learned that the announcer's ominous words hearkened back to an incident that had occurred on November 18, 1956. While addressing Western ambassadors at a reception at the Polish Embassy in Moscow, Nikita Khrushchev used an expression that was subsequently translated into English as, "Whether you like it or not, history is on our side. We will bury you!" What the world needed on that day was a translator who could not only produce an equivalent literal meaning of Khrushchev's words but could recognize, draw out, and articulate the larger meaning borne by his metaphorical expression. And what the Soviet premiere meant was that his country didn't need to go to war with the United States, because capitalism would eventually destroy the latter. In other words, we Americans were going to bury ourselves. Perhaps the translator missed Khrushchev's metaphor. Or perhaps the translator thought that the metaphor was so obvious that he didn't need to explain it. Either way, a more faithful, accurate rendering of Khrushchev's words would have told the West, "Whether you like it or not, history is on our side. We will be present at your burial [or funeral]" or "We will outlast you."

Apparently, the failure to comprehend the meaning of the words that Khrushchev had bellowed at the Polish embassy was widespread. During a speech in Yugoslavia almost seven years later, he commented on the mistranslation. "I once said, 'We will bury you,' and I got into trouble with it. Of course we will not bury you with a shovel. Your own working class will bury you."

What haunted me about what I saw and heard on television as a child, what the scriptwriter may have added to Khrushchev's words, what I may have added myself is the idea of "live" burial. I knew that when people died, someone buried them in the ground. When I was a child, my father, grandmother, brother, and I spent many Sunday afternoons in Aspen Grove Cemetery. While the adults visited graves and reminisced, Jamie and I played, running over old graves and walking around the lumpy earth mounded above recent burials. Is this where the Soviets would bury us—the living among the dead? I do not know how long I carried the fear of live burials with me, but it was real, it was oppressive, and it was persistent.

It wasn't until decades after I heard that ominous public service announcement that I grasped what Khrushchev had tried to tell us. The Russians weren't planning to literally bury us in the ground. Rather, they would try to bury us with greater success in economic development, greater success in the space race, greater success in math and science. In response, we would bury ourselves with our own fear and what we allowed it to bring forth.

Some grasped Khrushchev's metaphor. When I was five, John H. Glenn Jr. orbited the earth three times in *Friendship 7*—the United States' reply to a flight made seven months earlier by the Russian cosmonaut Gherman S. Titov who, in a period of twenty-five hours and eleven minutes, orbited the earth seventeen times in *Vostak II*. When I was in third or fourth grade, we were issued bright, new math books. Instead of beginning the school year with a review of addition and subtraction facts, our first lesson involved sets and subsets, something our parents and older siblings had never been taught.

Yet too many others could not move beyond the literal understanding of Khrushchev's words. And now, the people of southeastern Iowa and other parts of the country chosen to host nuclear bomb and ammunition factories are eating the bitter, toxic fruits borne by the inability of our Cold War policymakers to think metaphorically. Or perhaps our leaders were able to think metaphorically but because they saw that they could profit

from our fear, and since profit mattered more to them than anything else, they handed us shovels and showed us where to dig.

Now I wonder if we had understood what was happening within the fence, we would have fought back? Or would we have remained silent, grateful for the good, steady jobs and the economic boon that they brought to our towns? Financial security today; cancer and a poisoned home at some hazy point in the future.

Now I fight back by bringing to light and awareness what was long hidden from me within the fenced-in compound, by crafting what I know into story, and by telling that story to anyone who will listen.

Before I could write and tell my story about the plant, before I could draw the shape and write the name of the vast and forbidden place that is the "plant" on the map of home that I carry within me, I had to see the entire fence. Before I left Des Moines County on New Year's Eve morning of 2003, I sought the boundary on the west side of the compound. Instead of following Highway 34 through Middletown and toward Danville, I followed State Highway 79 past the IAAP headquarters, a small, dull-red brick building that I had never noticed before. A U.S. flag hung limply on a pole in front of it. The replica of the Fat Man was gone. Behind headquarters was the cluster of buildings where I visited a friend over thirty years ago.

The land across from the northwest side of the fence was either under cultivation or the site of rather new houses. If you sought to buy a building site there and knew nothing of the history of the plant, you might be pleased when the realtor tells you that the land across the highway from yours won't, in your lifetime, become the site of a housing development, a Home Depot, or self-storage facilities. Nor will you and your neighbors be troubled by plans to allow hiker, biker, and horse trails through the grasslands and woodlands across the road. This land will remain contaminated and undeveloped for decades to come.

The fence continued on; then it headed south: the west side of the compound. I stopped my car. Next to this northeast corner stood a roomy

house, probably built since the AEC left the area. The area inside the fence looked like any other pasture and woodlands. I got out of my car, stood in the middle of the road, and sniffed the air. As I scanned the trees for red-tailed hawks, I wondered how far I was from the test firing site where the DU was found.

I turned north and drove on Danville Road to Highway 34. On the right side of the road was an old, two-story farmhouse; Black Angus grazed in the adjacent pasture. A memory surfaced. On a couple of occasions when I was a child, I played in that house and yard with the children who once lived there, while our parents socialized. I had been down Highway 79 before; I had passed the northwest corner of the fence around the plant. But until this day, I had never seen it.

On my next trip home, I will drive the perimeter of the plant until I find the fence on the south side. There, I will get out of my car, smell the air, look, listen, and collect the shards of memory that work their way to the surface.

Eleven

Tending

The Applicant

I am filling out an application to become a volunteer worker at a social welfare agency in Lincoln. Meredith is looking on as I write. She wants to volunteer, too.

The form asks questions that I expect: where I work and have worked, where and for how long I went to school, where else I've volunteered, what type of volunteer work I want, availability, character references, and an emergency contact. But, too, the form asks a question that I've never encountered before: "Check your reasons for wanting to volunteer: (a) to serve people in the community; (b) to gain social contacts with others; (c) to develop work skills; (d) other _____."

I check the first reason. What I want to write on the small space following "other" is that by tending to the needs of the hungry, the thirsty, the naked, the sick, the imprisoned, and those who are far from home, what Jesus called "the least of these," I am tending to Jesus. Instead, what I write on the short line is: "Matthew 25:40."

As I am writing, several people enter the waiting room and disappear down the hall. Next to the arrow pointing to the hall is a sign that says: "Computer Literacy Class (Bosnian) 1:00." I turn to the section of the application form that asks me about the type of volunteer work I'd like to do. I imagine myself responding to raised hands and eager faces in a computer lab.

I am distracted from my imaginings when a young woman lugging a wide cardboard box full of groceries enters the waiting room and approaches a lanky, middle-aged man, who is slumping down in and spilling out of a chair. His jeans and boots are worn. Even though it's ninety-some degrees outside, he wears a denim jacket. The woman's hair is short, brown, and deliberately tousled. She stops before the man and shifts the box onto her left knee. I see a bag of potato chips, a bottle of red-purple juice, and several cans and boxes.

"Sorry to have kept you waiting," she says.

"What's all this?" the man says, wrinkling his brow.

"Your emergency food basket." She raises her eyebrows above the red square frames of her glasses, as if her statement is a question.

"I don't want all-a that." He waves it away. His fingers are long and elegant.

The young woman looks nonplused.

"I'm hungry," he says. "I wanna eat now."

"Well . . . there's stuff in here for ham sandwiches."

"Nah," the man says, shaking his head. "I'm walking. I can't carry all-a that. I just want something to eat."

The woman pauses. "I'll tell ya what . . ." She sets the box on the chair next to the man and leaves the room. He looks at the contents of the box—Captain Crunch cereal, Pop Tarts, spaghetti noodles, spaghetti

sauce, white bread, raisins, sugar, catsup, shaving cream, shampoo, and a couple of cans—as if from a great distance.

The woman returns, carrying a clear plastic container from a grocery store bakery filled with M&M-studded cookies. "I'll just give you stuff to make lunch," she says. "Cookies?" She puts them in a yellow plastic grocery bag. "Ham?" She pulls a small tin from the box and drops it in the bag. "Bread. Potato chips. Juice."

The young woman, Meredith, and I are waiting. The man rubs his hands over the top of his head. His fingernails are long. Finally, he picks up the bag and ambles out the door.

I turn in my application. A few minutes later, the woman who coordinates the volunteer workers calls me into her office. She scans my application. "Everything looks in order," she says, "except you didn't check the type of volunteer work you want to do. There's clothing distribution, food distribution, clerical, after-school programs, computer classes, fundraisers, and mentoring."

"Food distribution," I say.

As I am driving home, I see the man in the denim jacket, carrying the yellow bag. In my rear view mirror, I watch him lift the bottle of juice to his lips.

Shawna

Shawna is filling blue Wal-Mart bags with USDA nonperishable food: one can of pork, two cans of green beans, and one can of either grapefruit or apple juice per household. The grapefruit juice is moving slowly today.

"I haven't been here the past two Wednesdays," she shouts to me from her station. "My daughter was in the hospital for two weeks." I've only worked with Shawna one other time, and then we were too busy to get acquainted. I don't know what was wrong with her daughter and don't feel that it's appropriate for me to ask. Certainly it's not appropriate for me to ask Shawna why the left side of her face appears to be falling off.

When business slows down, she asks if I've gotten my food yet. "I'll cover for you if you want to go register, get your food, and put it in your car. The hamburger will be okay if you're going right home at 4:00." She

smiles at me with the right side of her face. I thank her but tell her that I'm not "income eligible."

"I'm definitely eligible," she says, leaning against the high table where I'm bagging corn flakes, frozen hamburger, and frozen blueberries. "Me and my two kids live off the child support I get from my ex and the $312 in disability pay that Jessica—she's the one that was in the hospital—gets each month. So I get perishable and nonperishables. You could get perishables if you come in and work on Mondays, Tuesdays, or Thursdays. They're not from the government so they have different guidelines than the nonperishables. I know a couple of gals who are making over thirty thousand dollars a year. I used to work with them at Molex before I got laid off, so I know how much they make. They volunteer at perishables, and they get food. Volunteers get twice as much as everyone else. That's why I'm here. So I can take home twice as much on Tuesdays and Thursdays. You should come in then." The area beneath her left eye twitches continuously.

I tell Shawna that I heard about the Molex layoffs on the TV news and had seen the factory north of town. But I don't know what the company produces or why its CEOs are cutting jobs. "They make parts for washing machines, cars, computers, and things. I made things like this little plastic square from molds." Shawna points to the jack where the telephone line connects to the warehouse telephone.

"Molex says that they're not selling as much as they used to, but I also heard that they built a plant in Mexico. They've had two layoffs. They decided they could keep more people on if we all took a pay cut. I went from $14.50 to $11 per hour. It was hell. The people with seniority knew that they wouldn't be the next ones cut, so they just goofed off. The rest of us were trying to cover their asses and do our own work so we wouldn't lose our jobs. Then there was the second layoff. They let me go because I'm a woman. Really," she says, when she sees my surprise. "I was the only woman on third shift. The guy hired after me was transferred to second shift. I haven't been able to get another job because of my face. They take

one look at me and figure something's wrong." She touches the twitching area beneath her left eye.

I want to know what's wrong but still can't ask.

"I had my tonsils taken out a year ago last December. The surgeon broke the bags and the infection spread all over, so I had to stay in the hospital longer. My face is like this," she says, smiling with the right side of her face, "because the surgeon cut a nerve in my neck."

I ask Shawna if she's getting anything for the botched surgery. She shakes her head.

"I was diagnosed with Bell's palsy a year ago last June—six months after the surgery. The doctor says he can't tell what's due to the surgery and what's due to the palsy. My face was really bad last summer. My eye was all the way down here." She pulls her lower lid down until the red shows. "And my ear hurt. At one job interview, the guy asked me if I'd had a stroke 'cause that's how I look." Shawna returns to her post to fill food bags for a small rush of food recipients. She is a stout, muscled woman, who easily hefts the boxes of canned juice. While Meredith passes out bags of cereal and frozen foods, I carry boxes of hamburger and blueberries from the walk-in freezer to our station.

Once the line slows down, I ask Shawna if she's talked to a lawyer about the medical treatment she's received.

"A lawyer? Those crooks?" The right side of her mouth moves into a straight line; the left side remains slightly down-turned. She slowly shakes her head with disapproval. "You get a couple thousand dollars out of the settlement, and they keep the rest."

I tell her that a couple thousand dollars is better than nothing and that a malpractice suit might keep this surgeon from hurting anyone else.

"He's really, really old." She pauses. "Besides, I think way too much time has gone by for me to do anything now. See, it was a year and a half ago that I got my tonsils out."

"Maybe it's none of my business," I say, "but I feel that you should talk to an attorney. If you have more medical problems down the road, you might regret not having checked into this. Look in the yellow pages for

someone who specializes in medical malpractice. Some attorneys have free initial consultations. If you don't like what you hear, you can get up and leave or go talk to another lawyer."

Shawna scrapes frost from a tube of ground beef with her forefinger nail. "Yeah, I might regret it. I suppose I could talk to a lawyer." She brightens. "I'm still trying to get a job. I like factory work, and I like to work hard."

Last winter, Goodyear cut its work force by hundreds. My next-door neighbor, who'd worked there for twenty years, now works as a second-shift janitor for the public schools. When Cushman's left the city, my neighbor three doors down lost the job he'd had there for almost a decade. Now he stays home with his son, who no longer goes to daycare, and his wife's job pays some of the family's bills. This summer, my friend's teaching contract wasn't renewed for the next academic year because of budget cuts, making her one of the many hundreds terminated at the university during the 2003 state budget crises. Next month she's moving to Michigan for a one-year teaching position. Last week Ian and two other recent hires lost their jobs at a locally owned restaurant because business was too sluggish to justify keeping them on. Since the recession began in 2001, 2.7 million jobs have been lost, making this the longest hiring downturn since the Great Depression. The Midwest has been hit harder than any other region of the country. A 2003 study by the Federal Reserve Bank of New York says that most of the job losses are due to permanent changes in the U.S. economy and are not coming back. And so the number of people standing in line for nonperishable, government surplus foods in the city where I live has jumped by more than 30 percent in the past year.

Shawna smiles lopsidedly. "Now that my face looks better, maybe I'll get work."

Danny

Danny, Shawna, and I are distributing noodles, walnuts, instant potatoes, egg mix, cans of apricots, green beans, pork, corn flakes, frozen peaches, and tubes of frozen ground beef. Most people who come through the line want everything we're giving away. But Danny always asks before he

puts an item in a bag. "Noodles? English walnuts? Instant potatoes? Egg mix?" he asks each person. Because of his Tennessee accent, Danny says "egg" with a flat, drawn out "a." Newcomers don't understand what he's saying, so often he has to repeat it. Sometimes he has to show them the packaged egg mix before they know what he's offering them. Shawna and I simply tell people what we're putting in their bags. If they don't want an item, they can tell us or give it to someone else in the line.

Danny says he's tired. Every Tuesday, Wednesday, and Thursday morning he arrives at 7:15 to carry boxes of food from the loading dock into the warehouse. After food distribution ends at three or four in the afternoon, he cleans the warehouse. "We need more good help," he says, as he surveys the heap of empty cardboard boxes to be broken down. Danny has worked as a volunteer at this agency ever since he retired after thirty years on a garbage truck in Tennessee. "I can't just sit home," he says. I believe him. Danny is skinny and sinewy; his face is brown and deeply creased: a body accustomed to physical, outdoor labor.

Danny moved to Nebraska because his wife has family here. "When we got married five years ago, she said, 'Come and see the place. If you don't like it, you don't have to stay.' But I liked it," Danny says.

For most of the afternoon so many people are pouring in that we can't leave our posts to replenish supplies. Even though it's not her job, an AmeriCorps worker loads boxes of food from the freezer and the back of the warehouse onto a dolly and wheels it over to us. People are coming through so fast that sometimes we can't complete an order until we pull boxes off the dolly onto the pallets, tear them open, and pull out cans or packets. "Noodles? English walnuts? Instant potatoes? Egg mix?" Danny asks 186 times. By 3:30, the rush is over. Danny and I pull wadded-up Wal-Mart bags out of a clear garbage bag the size of a washing machine and flatten and stack each bag so we can grab them fast during the next rush.

"She's my third wife," he says, as if there hadn't been a two-hour break in his story. "My second wife started running around with colored guys. That's how I got these." He points to the dark gray blotches on his cheeks

beneath each eye. "I met my third wife when I was a patient at the hospital where she worked." I wonder if Danny was hospitalized because of what the "colored people" did to him or if he has begun a new story with a different reason for his hospitalization. Either way, I'm glad that Meredith, who is biracial, black and white, and who often helps me with food distribution, is at violin camp today.

Danny stops flattening sacks and gives himself completely to his story. "When she come into my room, I heard a voice. It said, 'She's the one for you.' I looked at her. Right at that second, I knew that I'd marry her. Some people don't believe it when I tell them about the voice. But that's what it said, 'She's the one for you.'"

"Whose voice was it?"

He points toward the ceiling.

"God's?"

Danny nods. "I heard it clear as a bell." He flattens a Wal-Mart bag.

I tell him that I have no doubt that God speaks to people. For a moment I consider stopping there. "A couple of years ago," I begin cautiously, "my son was in trouble. I was praying really hard for him each day and whenever I couldn't sleep at night. One day, I heard God tell me to stop praying for my son and to . . ."

"So I asked her if she was married. Nope. You going with anyone? Nope. Would you give me your phone number? Yup. When I got out of the hospital, we started going out. We got married two months later. She's nothing like my second wife."

My unacknowledged story, or rather, the beginning and the rising action of my story hangs in the air like a bad smell. I look around, hoping that no one else heard it. No one is registering in the next room, since food distribution is almost done for the day. But perhaps an AmeriCorps worker is assembling an emergency food basket or the black man who does paperwork at a desk in the back corner of the warehouse heard Danny's story and my attempted story.

Perhaps Danny hadn't heard me. Perhaps he'd brought his story to fullness and could only tell it whole, his voice alone. Perhaps he was so

certain as to whose voice he'd heard that he didn't need the validation I was offering him.

"So how did God sound?" I ask.

"Just like you and me," Danny says.

The Aunties

My first indication that the four Aunties have arrived is a bottleneck in the adjoining registration room. Signing in is difficult for this group since one woman is blind; another has a small, deformed arm; and yet another walks slowly because of her artificial leg. The youngest Auntie is tall, forty-something, and black-haired, with no visible disability. As she helps her mother and two aunts, she mumbles about how our setup is all wrong for disabled people. I call these women the Aunties because they remind me of the dour faces and nasty, complaining personalities of Aunt Spiker and Aunt Sponge in *James and the Giant Peach*.

When they enter the warehouse, instead of saying hello to the workers, as do most food recipients, or chatting for a minute with Danny, who knows almost everyone, the Aunties survey what we're distributing. Then one of them always says, "Same thing they always got." The other Aunties shake their heads with disapproval.

Usually we help the woman with the small arm first. Since her one good arm isn't strong enough to hold the bags as they become increasingly heavy, the black-haired Auntie carries the bags for her. Once the small-armed Auntie is through the line, the black-haired Auntie sets the bags on the floor near the exit where the small-armed Auntie waits for her companions. One day, Danny, who is always first on the assembly line, filled the small-armed Auntie's bag with walnuts, instant potatoes, and egg mix. I added two cans of green beans and a bag of macaroni; Meredith added a bag of instant potatoes and a can of pork.

"I want beef," the small-armed Auntie said to Meredith. "Pork makes me sick to my stomach. I know you have beef."

"Yeah, we do have beef," Shawna said, coming to Meredith's rescue. "But the warehouse manager says that we have to use the pork first."

Hidden behind the stacks of boxes of canned pork, we keep one box of canned beef to distribute to Muslims.

Meredith didn't know what to do. "Do you want the pork?" I ask the Auntie.

"I suppose I'll have to. But you should give people a choice," she snapped. Meredith looked at me and shrugged.

No matter how hard we try to quickly and painlessly move the Aunties through the line and out the door, something always goes wrong. We forget to put an item in a bag, or a package of egg mix splits, dusting the other items in the bag, or the order of ground beef didn't come in that week and one of the Aunties wants to know why. Once, after we filled the bags of the three gray-haired Aunties, the people who had been waiting in line behind them started moving up to Danny's station. From my post I could see that the black-haired Auntie was scowling. She had returned for her food but no longer had a place in the line. "Danny, could you do her next?" I asked pointing. As soon as Danny turned around and looked at the black-haired Auntie, she started whimpering. "I've been helping my mom and my aunts get their food but nobody has gotten me mine. They're all done and I'm still here. It's not right."

"English walnuts?" Danny asked.

"Just give me everything," she sputtered.

Once when I had to leave early, I followed the Aunties to the parking lot. "How many of those do you still have at home?" one asked.

"The raisins? A cupboard full. I can't give those away."

If I ever see the face of Jesus shining through during an encounter with one of the Aunties, I will know that I am so filled with grace and light and power that the kingdom of heaven is already mine.

Jody

Her face is fuller, older, and paler than when I last saw her. Her left leg has been amputated just below her knee. A platform extending from the seat of her wheelchair allows her to keep the stump extended and supported.

Years ago, Jody was my neighbor. Ian played with her daughters, Kate and Emily, tough little girls who biked, played ball, and built snow forts. Jody ran a twenty-four-hour-a-day, seven-day-a-week, in-home daycare. Because her husband, a mountainous man who Kate and Emily said worked for a carpet cleaning company, always had the car, Jody did her grocery shopping on foot, pushing her empty and then full grocery cart ten blocks to Hinky Dinky and back, with her daughters and daycare charges trailing behind her.

September of 1992, Jody and her family moved away. In late October, I saw her buying Halloween candy and decorations at Hinky Dinky. Jody loved her new house, even if it was another rental, and she'd lost "gobs of weight," as she put it, on a fruit-only diet. About a month after this encounter, I saw the mug shot of a man on the six o'clock news that looked familiar. Then I placed him: it was Jody's husband, Kate and Emily's father. His friend had confessed to kidnapping, raping, and murdering a university student who had been missing for three months. The friend claimed that Jody's husband, who at the time was in custody for theft and burglary, was his partner. The codefendant led police to the shallow grave southeast of the city where they found the body of the missing woman. Jody's husband did not confess to the murder, but when the police searched his house, they found items associated with the crime.

This news made me anxious. Ian had spent many summer afternoons playing in a murderer's backyard. How could I have been so unsuspecting? Had Kate and Emily been present when the police searched their house? What was it like to write their names on a worksheet at school or for Jody to sign a check at the grocery store with such a unique surname, a name listed only twice in the city telephone book, a name now widely recognized? Did people still drop their children off at Jody's daycare? If not, how was she supporting her family? At the time I received the news about my neighbors, I thought about calling Jody and offering sympathy and help. But, too, I was afraid of feeling awkward or of being asked to do more than I was capable of, and so I never acted upon that impulse.

For his cooperation with the sheriff's department, the codefendant received a life sentence. But Jody's husband received a death sentence. My friend on death row tells me that Jody's husband had wanted to give up on his appeals and get the whole thing over with, but Jody's diabetes was so bad that they feared she might die from it. Since Jody's husband didn't want his girls to be fatherless and motherless, he continued his appeals. Jody survived. But just a few years ago, her husband died in his prison cell, probably of a heart attack.

As I pass out food, I watch Danny ask Jody if she wants noodles, English walnuts, instant potatoes, and egg mix. I watch Shawna smiling crookedly as she knots the handles of Jody's bags of food so the cans and packets won't fall out. Jody positions the bags on her lap and wheels herself toward my station. My stomach flips. I wonder if she will recognize me. If she does, will we tell each other stories about our children, the neighborhood where she once lived and I still live, the people we knew or know on death row? Will I apologize for being the one who is standing on two legs passing out bags of food each Wednesday afternoon and earning two thousand dollars too much last year to be "income eligible" while she is the one in a wheelchair waiting in line for free food one Wednesday per month? Or will our eyes meet and then look away?

When Jody comes to my station, she looks at me with no recognition. "Corn flakes? Hamburger? Frozen peaches?" I ask. She nods after each of my questions. I knot the handles of the bag and set it on her lap.

Twelve

Souvenir

The Loess Hills is a two-hundred-mile long, north-south band of steeply pitched hills, running parallel to the Missouri River in western Iowa and northwestern Missouri. I first saw the Hills in July of 1981 when I drove 270 miles from Burlington to Omaha for a job interview. Then I was struck by how different the Loess Hills were from the wide, craggy limestone bluffs of my Mississippi River hometown. The Loess Hills are smooth, narrow, and closely set. When seen from the air, this formation is even more remarkable.

From the window of an airplane circling to land at the Omaha airport, one can see the ridges and spurs and valleys of the Hills. Some call them "piecrust shapes" because they resemble the fluted or pinched edges of

a pie. Others call them "peaks and saddles." I have called them "razorbacks" for so long that I no longer remember if this is my name for the Hills or someone else's. What is as remarkable about these hills as their crinkled shape is that they rise abruptly from the flood plain at forty-to one-hundred-degree angles: a miniature mountain range on the edge of corn and bean fields. For the travelers along Interstate 80, these are the tallest hills they'll encounter between the Rocky and the Appalachian Mountains.

When approaching the Hills from the west, one sees prairie on the crests, trees scattered on the upper slopes, and woodlands near the bottom, as if the trees are sliding downhill. Some grassy expanses are ringed with "cat steps," concentric terraces that form when the loess slips or fails, causing a mini-avalanche, so to speak. Some say that the cat steps give the Hills a corrugated appearance. But to me it looks as though an animal is slipping out of its loose, rippling skin or a person is furrowing her brow.

The first time I saw these sharply dissected, angular hills, I fell in love with them. Now whenever I see this slippery, illusory, seemingly un-Iowan landscape on one of my drives between my Nebraska and Iowa homes or on an occasional trip to Kansas City, I fall in love with it all over again. Curiously, almost twenty years passed between the time that I first saw the Hills through a car window and the time that I walked within them.

On a sunny, snow-melting day in late March 2001, I wanted to see something different, but didn't want to have to go far to do so. So Meredith and I drove into the Loess Hills of Pottawattamie County, Iowa, about an hour east of our home. From two-laned Highway 183, which winds along the base of the Hills north of Crescent, the slopes seemed less extreme and the peaks not so far away after all. Cows, horses, and llamas grazed in the valleys and on the lower slopes. Narrow fields of row crops or tight groupings of a house, barn, and outbuildings nestled in the valleys. Diagonal or winding driveways led up the slopes to newer houses surrounded by tidy yards. Turkey vultures gleaned the stubbly cornfields.

I drove a narrow road up a steep hill to the 1,003-acre Hitchcock Nature Center near Honey Creek and followed the road around the tops of two

hills to the lodge. I had not had such a precipitous driving experience since I'd lived in the Illinois "Ozarks." From the deck of the lodge, Meredith and I surveyed the near and distant wooded hills. These are not the dense, dark woodlands that I hiked when I lived near the Shawnee National Forest in the southern tip of Illinois, but the drier, more open woodlands of the eastern edge of the Great Plains. Beyond the hills were the Missouri River Valley floodplains and the Omaha skyline. To the south a high, golden knob. That isolated patch of prairie stood as a small reminder of how all of these hills looked when Lewis and Clark passed by some two hundred years ago.

Until the past century and a half, periodic fires rolled unchecked over the prairies, sweeping them free of most trees and other woody plants or restricting woody growth to the lowlands. Then the Loess Hills were covered with lush prairie grasses and forbs, whose extensive underground parts survived fires and drought, and an occasional burr oak, whose corky bar and vast root system allowed it to withstand the elements. On July 16, 1804, William Clark wrote in his journal that the area around the Loess Hills in what is now Waubonsie State Park near Hamburg, Iowa, was "an extensive prarie." Clark called the "range of Ball Hills parrelel to the river & at from 3 to 6 miles distant from it, and extends as far up and Down as I Can See," the "Ball [bald] pated Prarie." To Clark, the prairie-covered hills looked like bald heads.

Now, Lewis and Clark might not recognize these hills. After more than a century of fire suppression, they are predominantly woodland, with prairie remaining only on some of the crests and the warmer, drier west and south sides. Clark might describe the distant, golden knob that I saw not as a bald head but as a head with a tiny bald spot. I wanted to stand on that high, open place. I wanted to see the plants and creatures that called that place home. I wanted to see how the hills to the east became shorter and rounder and the rectangular fields wider and wider.

We left the lodge and hiked north on Fox-Run Trail that threads through the woods on Badger Hill. In *Fragile Giants: A Natural History of the Loess Hills*, Cornelia Mutel writes that forest or forest-edge species that are rare or unknown in the surrounding areas—woodland vole, gray fox,

ornate box turtle, pawpaw, bobcat, eastern chipmunk, summer tanager, chuck-will's-widow, and several species of evocatively named butterflies, such as Zebra swallowtail, Olympia marblewing, spicebush, swallowtail, Henry's elfin, and hickory hairstreak—reside in or pass through the Hills. So, too, Mutel writes that in the Hills, one finds "eastwardly displaced western species" such as ten-petal blazing star, upland sandpiper, prairie rattlesnakes, yucca, buffalo berry, western locoweed, Great Plains toad and skink, as well as those species that can live no other place but on tallgrass prairie. The Loess Hills: a crossroads where species usually not found together meet. I saw none of this on this late March day on Fox-Run Trail. What I did find were woods full of what I can see every day in my own backyard: nuthatches, cardinals, sparrows, and squirrels. But the trees offered more variety than my city streets. In the absence of leaves and flowers, I identified them by their bark: the finely furrowed bark of the ash; the ridges and warts of the hackberry; the dark gray furrows of the burr oak; the thorny black bark of the honey locust; the pale upper branches of the cottonwoods; the fissures and ridges of the bitternut hickory, though the presence of hickory nuts provided a quicker means of identification. Light-filled branches veined the blue sky.

A branch off Fox-Run led to a place on the crest that provided a view of a wide valley: a saucerful of blond and reddish grasses, sumac, and cattails. Along the sides of the path leading into the valley were clumps of red-purple little bluestem and bronze-colored big bluestem. Though only 3 to 5 percent of the Hills is covered with native vegetation, this is prodigal compared to the 0.02 percent of native grassland that remains in Iowa as a whole, an area once covered almost entirely with prairie. As Meredith and I sat on a bench near the hilltop, I imagined away all of the trees except for scattered burr oaks and woodlands lining the creeks and pooling in the valleys. I imagined bison, antelope, elk, and deer grazing the lower slopes. I imagined prairie chickens, turkeys, black bears, gray wolves, and mountain lions on the upper slopes.

Even though I knew I would return to the Hills, I couldn't leave empty-handed. As a souvenir, I filled the sour-cream container that had held

the baby carrots that Meredith and I had eaten as part of our lunch with powdery, gold-brown dirt—the very thing that makes the Loess Hills unique. Once home, I poured the crumbly, golden loess into a globe-shaped glass jar that had once held marmalade. I set this memento of a place and an afternoon on the top shelf of the tallest bookcase in my living room. This dirt has stories to tell about wild weather, gravity's pull, wanderings, extinctions, introductions, and how seemingly solid, stable things eventually give way.

Loess (it rhymes with "fuss") is a German word for "loose" or "crumbly." Technically, loess is not soil, but the parent material from which soil is made. The older loess deposits in western Iowa were laid down following the Illinois glaciation, when huge ice sheets rasped and scoured the land. But the majority of the loess deposits were laid down after the southern lobe of the Wisconsin Ice Sheet, the most recent glaciation, stopped just short of Sioux City, Iowa, on the northern boundary of what is now the Loess Hills. As the glacier melted, the silt-filled melt water poured into the Missouri, a slower, more fluctuating, meandering, and sediment-laden stream than the fast-flowing, dammed and channeled river that I know. During dry periods, the river receded, exposing vast mud flats of powdered rock. Thirty thousand to 12,500 years ago, the prevailing northeasterly winds picked up this buff-colored glacial dust and deposited it over central Iowa and Missouri. The coarser, heavier particles fell closer to the Missouri River on an already irregular landscape, forming high peaks on the leeward side of the range. Finer grains were carried farther east, forming the more gently sloping hills on the eastern side of the range. Over time, water and wind erosion carved the piecrust shapes and the intricate drainage system into the hills.

Loess carried by the wind either from deserts or in the wake of prehistoric ice sheets also settled in low or flat places in eastern Europe, Russia, Argentina, China, and throughout much of the middle section of the United States, including Nebraska, where the loess region is vaster though less dramatic than that of western Iowa. But only in the highlands

of north-central China do the deposits, blown in from Mongolia's Gobi Desert, exhibit the peaks and deep creases of western Iowa. Only in China are the loess deposits thicker than those of western Iowa. And they are far more extensive: the loess hills of China cover 80,000 square miles; the thin band of deposits in western Iowa cover a mere 1,050 square miles. Yet the loess deposits of China have been more heavily altered by natural forces (frequent rain storms) and agriculture (over thirty-three million people live in Shaanxi Province). Compared to the loess highlands of China, the hills of western Iowa are relatively pristine.

Loess has several common names, each of which singles out one of the more salient features of this material. "Yellow marl" or "yellow clay" points to loess's yellowish tinge, caused by the oxidation of iron-bearing minerals. China's Hwang Ho or Yellow River is so named because of the large amount of soft, yellow earth carried in its waters. The name "sugar dirt" refers to loess's homogeneity and dissolvability. The loess in western Iowa is comprised mostly of angular, flat-sided quartz particles that easily slide against each other. The beds it forms are an accumulation of sugarlike particles of silt: light, loose, homogeneous, wind-sifted, and unstratified. Because the porous loess lacks the clay particles that fill the gaps between the grains of silt in less permeable soils, water moves rapidly through it.

As long as the loess remains dry, it is highly cohesive. This not only allows it to maintain the magnificent peaks and ridges on the west side of the range but to stay in place despite high, sometimes nearly vertical, road cuts. Mutel writes that "truly vertical" cuts of as much as sixteen feet can stand independently; cuts as high as twenty-four feet can hold if the slope is decreased a bit. But if the topsoil is removed from a formation, or if the loess becomes saturated because of overwatering, placement of construction blocks that interfere with drainage, or broken or leaking waterlines or sewers, the loess sheers off in vertical slabs or collapses and dissolves like wet sugar. "Loess mush" cannot support the weight of buildings, roads, herds of cattle, nature lodges, or car-filled parking lots. Completely saturated loess can't even support its own weight.

On our late March hike, Meredith and I followed "the Chute," a branch off Fox-Run Trail. The path was treacherous not only because of the steep incline but because the damp, leaf-covered loess slid easily beneath our feet. Trail cuts along the sides of the Chute looked fragile: in one spot, only a thin space separated a tall chunk of loess from the rest of the wall. When I touched the slab with my walking stick, it crumbled. I had read that around exposed tree roots, one might find knobby, roundish or irregularly branching, rocklike concretions that form in loess. The people living on the loess deposits near the Rhine River in Germany called these concretions "kindchen," since some were shaped like children. What a wonderful souvenir one of these "little people" would have made. Meredith and I poked around the roots with our walking sticks. We were disappointed when we found nothing but crumbly dirt and acorns.

Of course, I didn't need another souvenir. I already had one with the power to evoke the Loess Hills in a moment. When I take the round, loess-filled jar down from the top shelf of my bookcase, unscrew the lid, and pinch the loess between my thumb and forefinger, I see sheets and clouds of yellow silt blowing up from the alluvial flats, obscuring the sun, swirling, rising, falling, rising, and falling on the uplands east of the Missouri. Like snow, the rock flour falls on everything—river terraces, limestone protrusions, sand, gravel, and glacial till, entirely filling some valleys. At the close of the Ice Age, just after the terrain on the east side of the Missouri had fallen from the sky, humans entered the Hills for the first time. These people weren't there to stay. Rather, they were passing through in pursuit of mammoths, bison, and elk. Had they stayed, they would have witnessed a dynamic landscape in which streams ate into mounds of dust, gullies lengthened and deepened, and loess slumped or collapsed downhill, turning the creek water yellow and turbid. Eventually, people settled in the hills, living in earth lodges, cabins, farm houses, mobile homes, and suburban castles, further altering the landscape. As I hold the loess between my thumb and forefinger, I see all of this and I remember my daughter and me driving into this new and exotic landscape for the first time, hiking the hills and valleys, gathering this handful of loess and carrying it home.

I learned to be a souvenir collector from my Great-aunt Pertsie. Two walls in her living room were lined with shelves filled with salt and pepper shakers, cup-and-saucer sets, ashtrays, glass bells, coin banks, and figurines that she'd collected on almost any trip out of town. Wherever she took my brothers and me—Herbert Hoover's birthplace in West Point, Iowa; the state capitol in Des Moines; the museums in Mark Twain's hometown of Hannibal, Missouri; the restored houses and shops in Nauvoo, Illinois, the mid-nineteenth-century home of nineteen thousand Mormons—she always gave each of us a few dollars to spend on souvenirs. We came home with fat pencils bearing the name and a sketch of the place we'd just visited, polished pine boxes to hold used chewing gum or cigarette butts, little dolls in somebody's idea of Indian clothing, polished rocks, glow-in-the-dark crosses, and snow domes. Souvenirs were a proof and a remembrance of time away from home.

My house is filled with a different type of keepsake. Twisting on a ceiling hook in a corner of my bedroom is a tumbleweed that I caught on a windy October day in the Nebraska panhandle. On my dresser is a chunk of petrified wood that I found on a walk to the Niobrara with friends who live on a bluff above that river. On the hanging shelves in my living room, a curio cabinet of sorts, is draped a shed snakeskin that my son found at our friend's house in northeastern Kansas; striped gray and white rocks that I collected in the Green Mountains of Vermont where I was supposed to have been attending a writer's conference but kept slipping away for solitary rambles; a geode that my daughter cracked open with a hammer at the Illinois State Museum in Springfield; a knife-sharp piece of flint and fossil-bearing rocks that I collected at Flint Creek near Burlington one July 4. Suspended from strings above my kitchen sink are pieces of a raccoon skeleton found on a Thanksgiving morning hike in the Shawnee National Forest with my children and the children of the woman who was cooking our dinner; enormous pine cones from a California forest that a friend brought back as souvenirs; hawk feathers and sage that I collected on a camping trip near Mission, South Dakota; a piece of cactus skeleton that I found in the Sandia Mountains near Albuquerque where

I was supposed to have been attending a literature conference but, again, kept breaking away for mountainous hikes or city strolls. I cannot enter woods, prairies, creek beds, or mountains without bringing back something, even if it is only a bright leaf. But I have collected so many natural souvenirs that the day before I walked in the Loess Hills for the first time, I threw out two boxes of feathers, acorns, pinecones, winged seeds, clam shells, turtle shells, pressed plants and butterfly wings, mammal bones, and slabs of shelf fungi that I'd collected here and there.

Lewis and Clark were also souvenir hunters. Thomas Jefferson commissioned them not only to find a water route linking the two oceans but to bring back objects for Jefferson's scientific studies. In *The Way to the Western Sea: Lewis and Clark Across the Continent*, David Lavendar says that while preparing for the outbound voyage from Camp Wood, Illinois, north of present-day East St. Louis, Lewis sent to Jefferson cuttings and written descriptions of the Osage (wild) plum and the Osage orange (hedge ball tree), common to Missouri, samples of lead, silver ore, salt, a ball of hair taken from a bison's stomach, and a horned toad. On the Iowa-Nebraska portion of the Missouri River, the captains described and collected such new species as "Prarie Dogs," a "Brarow" (badger), bull snakes, least terns, and ground plums. Lavendar says that the following winter the captains sent from Fort Mandan, North Dakota, "[s]ixty-seven specimens of soil, salt, and minerals; sixty examples of plants . . . the hides of many animals, some stuffed and several unknown to Americans of the time; four live magpies, a live sharp-tailed grouse, and a live prairie dog . . . a variety of embalmed insects; and many curiosities." At the Lewis and Clark Herbarium at the Academy of Natural Sciences in Philadelphia are over two hundred dried and pressed plants, all souvenirs that the Corps of Discovery collected on Jefferson's behalf.

President Jefferson also encouraged his captains to collect souvenirs from the people they encountered. In *Lewis and Clark Among the Indians*, James P. Ronda reports that among the objects that the expedition leaders sent by keelboat from Fort Mandan to St. Louis on April 3, 1805, were Arikara tobacco and tobacco seeds, an ear of Mandan corn, four buffalo

robes, a Hidatsa robe, a large buffalo skin bearing a depiction of a 1797 battle between Arikara-Sioux and Mandan-Hidatsa, bow and arrows from the Mandan chief Black Cat, and a Mandan clay cooking pot. In return, the Corps left such souvenirs as blue glass beads, brass buttons, knives, axes, kettles, needles, fish hooks, combs, and calico shirts.

Collecting souvenirs, mementos, or curiosities seems like a benign pastime, unless one takes what should be left behind. Each year, souvenir hunters carry about twelve tons of fossilized wood as old as the dinosaurs out of the Petrified Forest National Park in Arizona. They've stripped stalagmites and stalactites from caves in such diverse places as Utah, Iowa, and Virginia. They dig in the ground and steal bullets, horseshoes, uniform buttons, and other Civil War artifacts at Shiloh National Military Park in Tennessee. Their pilfering has destroyed much of the original record and matrix at the site of the Lakota, Cheyenne, and Arapahos' defeat of Custer at Little Bighorn, South Dakota. They carry away pitcher plants, goldenseal, prairie blazing star, western prairie fringed orchids, bird's-foot violets, and pink and yellow lady's slipper orchids to transplant, usually unsuccessfully, into their own backyards. In some cases, the plant poachers have cleaned out every single plant in an area or colony.

Ironically, the sometimes destructive impulse to "souvenir" a person, place, or moment is motivated by the desire to preserve the memory of what one sees as valuable, precious, worth keeping. Since the Loess Hills may not last in the form I've grown to love for much longer, why not take a lasting keepsake?

On a June trip to the Hills, Meredith and I followed the Dozer Cut Trail into the valley. This trail angles gently down the side of the slope and is wide enough to drive a car down—not the type of trail that one usually finds in such places. And this trail bears witness to the recent history of this place.

From 1967 to 1986, 508 of the 1,003 acres that comprise Hitchcock Nature Area were the site of the campground of the Omaha–Council Bluffs YMCA. In 1986, the Y sold Camp Hitchcock to a man who planned to convert two

of the valleys into landfills. Toward that end, he began clearing them of trees and dirt. He dreamed of a service road angling through the woods, dump trucks chugging up the steep hills, earth-moving machines burying waste, valleys rising year by year until they were no longer valleys but low, lumpy places. A local citizen's group used zoning regulations to force the owner to give up his title to the land. I do not know if the group members' chief motive had been to protect their own property from the traffic, stench, and ugliness of a dump or to protect the fragile hills from further damage. Either way, they were successful. In 1991, the Pottawattamie County Conservation Board acquired the land and created the nature area. Presently, the board is revitalizing the two bull-dozed valleys by planting one with trees and the other with prairie plants.

Most land in the Loess Hills that has been altered by humans is due not to a filling-in but a taking away. The Loess Hills have one of the highest erosion rates in the country—about four times that of Iowa as a whole. And, too, dirt from the Hills has long been in demand for landfill and the underlying limestone for gravel. Consequently, soil mining north of Glenwood is a growing business, as is gravel mining near Crescent. When the Union Pacific Railroad needed six hundred truckloads of fill dirt to replace the contaminated soil in its rail yard northeast of downtown Omaha, it looked to the Hills. Fortunately, enough people protested that the railroad went elsewhere for dirt. The devastation caused by the wearing and washing and hauling away has been exacerbated by the destruction of the once-diverse native vegetation and the increased weight and moisture associated with farming, grazing, roads, human habitation, and human recreation, such as dirt bikes, horses, ATVs, skiing, and in the more fragile places, even hiking.

Meredith and I followed the bulldozer trail out of the valley and up the opposite hill. Though I walk about four brisk miles each day on the flat or gently sloping city streets near my house in Lincoln, after walking the equivalent of one city block at this angle, my heart pounded in my head. Dust heaps, I reminded myself. These solid yet fragile hills, raised

by wind-blown Ice Age dust and dissected by running water, are nothing but dust heaps. Here one century, gone the next.

As the population of Pottawattamie County grows from the 87,704 reported in the 2000 census to the projected 101,800 for 2025, as the population of the nearby Omaha metropolitan area grows from 784,463 in 2002 to the projected 954,000 in 2025, the Loess Hills will become an even more popular place to play or live, further increasing the erosion rate. Near the Hitchcock preserve is the Mt. Crescent Downhill Ski Area, where twenty large cannons, two pumps, two holding ponds, and miles of underground pipes make snow. A growing number of the more affluent people who work in Council Bluffs, Omaha, or Sioux City, look to the Hills as a suburban-rural building site for their huge, costly houses. Unless strict building and land use codes are soon established for the area, the only remaining prairie remnants will be fenced off like museum pieces and the Hills will differ little from most other suburban landscapes, but with one exception: the Hills are losing ground at an astonishing rate.

As we stood near the top of the wooded hill across the valley from the Dozer Cut, I imagined a slower wearing away of the Hills. In 1986, the National Park Service designated about one hundred thousand acres of the Hills as a national natural landmark. This distinction has few teeth in it, since it permits the land to remain privately owned and provides no financial incentive for the owners to preserve or conserve the land. Yet it does draw attention to the landform. In 1998, a state legislative act established the Loess Hills Alliance, a twenty-seven-member board comprised of local officials who assist private landowners with natural areas management and regional planning. In 2000, a 220-mile route through the Hills became the Loess Hills Scenic Byway, a designation that bears the potential for future funding. In 2001, a federal agricultural appropriations bill provided nine hundred thousand dollars to fight erosion in the Hills.

One of the more ambitious efforts to protect the Hills was the *Des Moines Register*'s forceful advocacy of national park status, a proposal which the National Park Service and Iowa senators Tom Harkin and

Charles Grassley took seriously. This proposal asserted that the Loess Hills merited the same funding and national recognition as Yellowstone, Yosemite, Glacier, Grand Teton, or the Everglades National Parks. Surely this awakened some to the beauty and value of the Loess Hills. In April 2001, the Park Service rejected the proposal because 95 percent of the land was privately owned. Not only would it be too expensive to purchase, but there might be stiff resistance to the area becoming a national park, since only about half of the residents surveyed in Iowa's seven westernmost counties supported federal ownership of the Hills. Yet, most of those surveyed said that they did approve of land purchases by state or by local or regional conservation groups, such as the Iowa Natural Heritage Foundation, which sought in 2005 to buy WaShawtee, a former Girl Scout camp whose 711 acres were adjacent to Waubonsie State Park in the Loess Hills near Hamburg, Iowa. Also encouraging is that a growing number of landowners in the Hills are participating in programs that assist them in removing trees, especially eastern red cedars, conducting controlled burns, lessening the damage from grazing, controlling exotic species, and improving or creating wildlife habitat.

I collect stories about Loess Hills landowners who are permanently protecting their land from being built upon, eroded, or trucked away. These landowners are rare and remarkable people. Barry and Carolyn Knapp of Westfield, on the northern edge of the Hills, donated, through a conservation easement, 1,110 acres of Loess Hills prairie adjacent to the Nature Conservancy's 2067-acre Broken Kettle Grasslands. Through this alliance, that parcel of land is protected from housing subdivisions, mining, and other damaging uses as long as such contracts are honored. Likewise, Bob Romeo, president of Rocking R Farms, Inc. of Creston, protected 750 acres of his land in northern Pottawattamie and southern Harrison Counties by permitting the Iowa Natural Heritage Foundation to purchase permanent conservation easements valued at more than four million dollars. Romeo will continue to farm four hundred acres of this land and retain thirteen building lots; yet he forfeited his right and the rights of future owners to develop the other 159 potential building

sites, to graze cattle, to farm or develop the one hundred acres of prairie remnants and oak forests, to build hog confinements and other livestock facilities, to mine or sell the wind-blown, Ice Age silt for fill dirt. Equally remarkable is Mildred Vincent, whose family lived on a Loess Hills bluff within the Council Bluffs city limits for over a half century. In 2001, she sold thirty-one acres to the Loess Hills Preservation Society and the Iowa Natural Heritage Foundation, which in turn sold the land to the city of Council Bluffs. "That's what Council Bluffs is noted for," Vincent said of the hills. "I just feel like others should enjoy them." In 2004, the city of Council Bluffs bought and restored ten acres of remnant prairie adjacent to Vincent's former property. Now this bluff, visible from both Interstates 80 and 29, and the prairie remnant it hosts, are safe from developers.

How hard it is to leave this land as it is. I left my June hike with the skull of a sharp-nosed mammal the length of my palm, a fistful of wilted wildflowers, and a coat of fine yellowish silt powdering my car. ("Dust," Meredith wrote with her finger on our car trunk.) Each souvenir serves as a reminder of a place that is fragile and that feels kind of temporary. And, too, I left with the dream of acquiring a piece of the Hills for myself. There, I'd put in a garden and a small grove of fruit trees, build a little house or set a mobile home, and let some of the land go wild. A bit of land just for me and mine.

The loess washed off in the next rain. I left the bouquet on the dashboard of my car until it became dusty and crumbly. The skull sits on the curio shelves in my living room, gazing at me from eyeless sockets. The dream remains.

On a Saturday afternoon in September of 2003, a wedding party of two hundred were celebrating at the lodge at the Hitchcock Nature Area. On the deck of the lodge, members of the yearly HawkWatch—a group that documents the spring and fall migrations of various species of hawks, falcons, ospreys, and eagles—were gazing through their telescopes and making notes. Meredith and I took turns looking through a big set of binoculars mounted on the deck. She focused on airplanes taking off and

landing at Eppley Airfield north of Omaha. I focused on birds. The sun was so bright that I couldn't make out the distinguishing features of the bird wheeling above the valley. I only saw a flapping, gliding, hawkish silhouette.

We set out for the Badger Ridge Trail partly because we hadn't yet explored it and partly because it led in the opposite direction of the wedding party. Unlike Fox-Run, a woodland trail, Badger Ridge was high and dry, more prairie than woodland. Burr oaks, eastern red cedars, wild plum thickets, and blazing sumac clung to the sides of the hill. We followed the trail as it wound around the hilltop, past sages, thistles, bluestems, white asters, yuccas, sunflowers, and towering goldenrod. On the path was a frenzy of late summer insect activity—beetles, grasshoppers, crickets, daddy long legs, moths, woolly bear caterpillars. A hawk watcher peered through a telescope from the peak of a bald crest, the high, golden knob that I'd seen from afar on my first trip to the Hills. Meredith and I stopped at an open place near the top of the knob and faced the east. The Hills, with their green and yellow squares and rectangles, receded before us.

I felt the familiar impulse to take something home with me, something that would say that I'd hiked on Badger Ridge, some keepsake that would recall an autumn afternoon in the Hills. Perhaps a goldenrod stem bearing a gall. Perhaps a late summer bouquet of white aster flowers and red sumac leaves. Perhaps butterfly wings or a bird's nest. But why did I have to take something? That was the very attitude that would eventually destroy the Hills. And, too, my search for souvenirs was interfering with my ability to see and experience this last stretch of my walk. I vowed to myself that on this day, I'd not carry anything home with me.

On the trail a few feet before me was a dull-colored lizard. It zigged and zagged and then darted into the grasses. It had probably been basking in the sun on the bare earth of the trail in these last days of summer before it was called into hibernation. Perhaps it was a Great Plains Skink. Perhaps it was a prairie-lined racerunner. Certainly it had been too fast for me to observe and remember identifying marks that I could later

check in my field guide. I peered into the grasses for another glimpse of the creature. Gone.

We followed the trail back to the parking lot filled with the vehicles that had brought the two hundred wedding guests, the hawk watchers, and us to the top of the hill. As I drove down the steep road to the highway, I realized that, indeed, I was carrying something with me and it was far better than anything I could set on a shelf or store in a box: images of a darting, nameless, elusive lizard and a vast and uneven autumn landscape. Near and exotic. Solid and ephemeral. Mine and not mine. It was enough.

Thirteen

Lingering Curiosities

We were traveling along Ohio Highway 3 from my parents' house near Congress to my brother, sister-in-law, and nephews' house in Medina. When we entered Seville, a pretty village of about two thousand, my mother told my father to pull over so we could see the historical marker. Where Highway 3 intersected with West Main Street at Stanhope Park, a triangular piece of land, my father made a left. Since there was no parking along the side of the street, he waited in the car in front of the Seville Historical Society while my mother, Meredith, and I crossed the street to a dignified-looking plaque near the apex of the triangle. The sign contained a copy of an old photograph of a tall man and a tall woman. The text next to the photograph read:

> *Seville's most famous residents. Captain Martin Van Buren Bates (1845–1919) and Anna Swan Bates (1848–1889) settled here in 1874. Their notoriety stemmed from their dramatic stature: Martin, a former Confederate soldier from Kentucky, stood 7 feet 8 inches tall. Anna, a would-be teacher from Nova Scotia, stood 7 feet 11½ inches tall. They met on a carnival circuit in 1871 and wedded in England the same year in a ceremony orchestrated by Queen Victoria.*

We walked around to the back of the sign and continued reading:

> *Returning to America, Captain and Mrs. Bates bought a farm on the edge of Seville and furnished a house (razed in 1948) proportioned for their comfort, and retired to small-town agricultural life. Martin raised blooded stock and draft horses; Anna entertained and taught Sunday School. In 1879, Anna gave birth to a child who weighed a record ¾ pounds, but lived only 11 hours. The Bateses and their child are interred in nearby Mound Hill Cemetery. Seville continues to celebrate their symbolic, larger-than-life neighbors.*

"Take a picture," my mother said. She stood on one side of the plaque, a brown square lettered and trimmed in gold; Meredith stood on the other. An outline of the state of Ohio jutting from the top of the sign was flanked on either side with clumps of buckeye fruits and leaves.

Like most historical markers, this one testified that something had happened or had been positioned on or near that spot to interest those of us passing through "in sampling the wonders of this extraordinary place or, at the least, to wander onward with lingering curiosity," as geographer Wilbur Zelinsky observes in his study about the ways in which Midwestern cities, towns, and villages, communicate their "above average[ness]" to themselves and others. What I've seen in my travels throughout the center of the continent bear this out. Some little places with no extraordinary history to speak of place signs at the edge of town that list the

years or number of years in which the high school football or basketball team qualified for state championships or that the town is or was part of a state-funded beautification program that placed the new planters and light poles on Main Street. Though neither distinction is likely to draw tourists, both serve to remind the people who live in that place that they are, in some small way, above average. Other towns capitalize on aspects of their past that will appeal to outsiders. The three historical markers in Ogallala, Nebraska, for instance, each placed by different entities (the Nebraska State Historical Society, the Ogallala Chamber of Commerce, the Keith County Historical Society), each point in the same direction: to that brief period in Ogallala's past (1875–1885) when it was, according to two of the signs, "a wild and woolly cowboy town." Then, it was the northern terminus of the Western or Texas Trail, over which Texas Longhorns moved north. Once in Ogallala, the cattle were shipped east on the Union Pacific Railroad or sold to ranchers. The markers proclaiming this history are located on Interstate 80 east of Ogallala, on Highway 30 that runs through town, and in Boot Hill, which according to the sign placed there, "still survives [as] the final resting place for many who helped make Ogallala the Cowboy Capital of Nebraska." The three signs merely mention other significant aspects of Ogallala's past: that it was named for the Ogallala band of Dakota Sioux; that it was positioned on the Overland Trail, over which about a quarter of a million people passed, in the mid-nineteenth century, on their way to Oregon and California; that the railroad was an abiding presence even after the cattle drives ended; that the area is critical to the hydroelectric power industry in western Nebraska. But what the signs emphasize is how most Ogallalans prefer to be identified: as the residents of a former "lusty cow town."

Likewise, my hometown has placed a historical marker and a special street sign at the bottom of Snake Alley, which Ripley's Believe It or Not! identifies as "the Crookedest Street in the World." In 1894, three German immigrants built this tightly winding cobblestone street comprised of five half-curves and two quarter-curves, into a steep bluff about a half mile west of the Mississippi River. The creators may have had a practi-

cal purpose for such a passageway or they may have built it as a novelty. Either way, Snake Alley is one of the features that makes my hometown unique and its sinuous presence is conspicuous and highly promoted in the area. Each Memorial Day weekend, this street offers the climax to the Snake Alley Criterion bike race; each Father's Day, it is the site of the Snake Alley Art Fair. At the Iowa Store on the riverfront, one can buy coffee mugs, tote bags, tee shirts, Christmas tree ornaments, afghans, and postcards bearing the likeness of Snake Alley. Yet in contrast, one could have spent years in Burlington without encountering a single reminder that Aldo Leopold, the greatest ecologist of the twentieth century and author of *Sand County Almanac* and other books, was born, raised, and educated there. Only recently has Burlington considered creating an interpretative center to honor and advertise the fact that this international figure, whose fame continues to grow almost sixty years after his death, hailed from this stretch of the river.

For some of us, souvenirs, festivals, historical markers, and place names are but invitations, teasers, hors d'oeuvres. We leave Ogallala, Burlington, or Seville wanting to discover the parts of the story that didn't fit on the historical marker or in museum display cases. We leave wanting to know more about what the denizens of those seemingly common and unremarkable places perceive to be singular and worth commemorating about their home places. At the time that I saw the historical marker in Seville, I was only mildly interested in the Bateses. But over the next several days, I found myself wondering where they came from, why they had chosen Seville, and what it had been like for them to live in this place of well-maintained Victorian houses and a bustling business district on what is now the western edge of the East and the eastern edge of the Midwest. Eventually, I would return to Seville to tour the historical society museum where Bates artifacts are on display and to find the Bateses' farm and their graves in the Mound Hill Cemetery.

Once I returned home from that first brief stop in Seville, I satisfied my lingering curiosities about the Bateses and their neighbors by sifting through the often conflicting reports about them on the internet and in

the public library. I learned that in a little town near Tatamagouche, Nova Scotia, Ann Swan, who was but five feet tall, gave birth to an eighteen-pound baby girl, Anna, on August 6, 1846, a more widely acknowledged birth date than that on the historical marker in Stanhope Park. Apparently it was a "difficult" birth, though I question the very possibility of a woman even shorter than me surviving the birth of such a large child. Anna grew quickly. When she was four, her parents exhibited their ninety-four-pound daughter in Halifax as the "Infant Giantess." When she was five, Anna was the same height as her mother; soon she surpassed her five-foot-four-inch father, Alexander. Such quick growth demanded modifications. Alexander kept lengthening his daughter's bed; at school, Anna sat on a high stool at a table set on planks. At meals, she found it more comfortable to sit on the floor with her back against the wall than on a chair at the table.

When Phineas T. Barnum heard about the seven-foot-eleven-inch, four-hundred-pound Nova Scotian teenager, he sent one of his scouts, Judge H. P. Ingalls, to offer her a job at Barnum's American Museum (originally the American Museum) in New York City. There Barnum displayed such curiosities as dwarfs, sword swallowers, albino families, shaking Quakers, living skeletons, Siamese twins, dog-faced boys, and what Barnum claimed to be the "first and only" hippopotamus in America. Because Anna wanted to become a teacher, she rejected Barnum's offer and at age fifteen left home for teacher's college in Truro, Nova Scotia. But at college Anna was homesick, and in the presence of people who had not known her all her life, she was treated as a spectacle. After just a few months, she quit school and returned home. When Ingalls again asked her to come to the museum, she agreed. Perhaps after her experience in Truro, Anna had concluded that "freak" was the only occupation, the only identity, open to one of her stature. Barnum paid her $23 per week in gold (now about $450), lodged and clothed her, provided her with a tutor for three hours per day, and paid her mother's travel and accommodation expenses whenever she visited her daughter. Such an arrangement gave Anna more opportunities for travel and education and more money for

the support of her twelve siblings than a college degree and a teaching position could have.

Anna's work place and new home, the enormously popular American Museum at the corner of Broadway and Ann, had come under Barnum's ownership and management in 1841. While John Scudder, the former owner, had featured taxidermy displays, Barnum chose to emphasize live exhibits. For twenty-five cents, one could see "all that is monstrous, scaly, strange and queer," as Barnum promised, as well as Shakespearean dramas, musical performances, and lectures on history, politics, and one of Barnum's greatest passions, the temperance movement. Barnum displayed some of his freaks in exotic settings to heighten their "Otherness." For instance, he displayed "Zip, The What Is It?," a microcephalic, African American dwarf, against a "jungle" backdrop, in a furry black suit and carrying a long staff, as if it was hard for him to stand upright. As Zip ran around like a wild animal, smoking cigars, screeching on a violin, and uttering unintelligible sentences, spectators were asked to decide if he was "man or monkey." But with oddities such as giants and most dwarfs, Barnum preferred an aggrandized form of presentation that historian Peter Bogden says "endowed the freak with status-enhancing characteristics." In other words, Barnum displayed curiosities such as Anna Swan or forty-inch-tall Tom Thumb as well educated, cultured, and socially prestigious. Unlike the scantily clad Circassian Beauties, who supposedly had escaped from a Turkish harem, "the Nova Scotian Giantess" was always expensively and modestly dressed. At first Barnum placed Anna in one of the saloons, a room filled with numerous exhibits and display cases. But when he realized that she was "an intelligent and by no means ill looking girl," as he wrote in his 1927 autobiography, he put her in the three-story Moral Lecture Room. There Anna discoursed about the history of giants, played the piano, performed as Lady Macbeth and sometimes appeared with the twenty-nine-inch tall Commodore Nutt. An unlabeled, undated photograph on Robin Freed's Web site about the American Museum shows about two dozen human anomalies posed for the picture. I can pick out the dog-faced boy, dwarfs and midgets, a

bearded woman, a fat lady, an albino, and the frizzy-headed Circassian Beauty. Towering above the others in the back row is a female giant, whom I believe to be Anna, in a dark dress with frills and flowers on her upper chest and her hair piled high atop her head. Her right hand rests seductively on her right hip, which is cocked upward. In this picture, one cannot see Anna's double chin, her too deeply set eyes, her thick features. From this distance, she is pretty.

At noon on July 13, 1865, a fire broke out in the American Museum. According to an article that appeared in the *New York Tribune* the day after the fire, many of the animals died miserable deaths but "all the living [human] curiosities were saved." Anna, however, was rescued only with "the utmost difficulty." Tribune reporter Nathan D. Umer wrote that there wasn't a door in the museum "through which her bulky frame could obtain passage. It was likewise feared that the stairs would break down, even if she should reach them." (One wonders how Anna entered the museum in the first place or how the stairs had been able to support streams of museum patrons for so many years.) Umer, who was stationed in a room across the street from the room where Anna was trapped, reported that everyone abandoned her except for Isaac Sprague, the Living Skeleton. When the heat became unbearable, Isaac left, too. As a last resort, museum employees removed a portion of the museum wall, took a derrick that just happened to be standing near the museum, and lifted Anna out of the building and over the heads of the applauding crowd. A large, waiting carriage whisked her away to a hotel. If the fire was a staged publicity event, as some maintain, the effects were more devastating than planned. Anna lost everything she owned, including a trunk that contained $1,200 in gold (now about $20,000) and stacks of greenbacks. Barnum's insurance covered only $40,000 of the approximately $2 million in lost exhibits and property damage. Nonetheless, by September of the following year, Barnum opened to the public his bigger and better American Museum; Anna and the other living curiosities resumed their places in the saloons and lecture hall.

Several years after Anna joined Barnum's company, Barnum hired another giant, the seven-foot-nine-inch Martin Van Buren Bates. Martin had been born to normal-sized parents on November 9, 1845, in Whitesburg, Kentucky. One source reports that by age seven, he was six feet tall and three hundred pounds. Yet other sources, including the curator at the Seville Historical Society Museum, say that Martin was normal-sized throughout his childhood and adolescence but continued growing well into his twenties. Either way, Martin's giantism, like Anna's, probably had been caused by an overproduction of growth hormone in the anterior lobe of the pituitary gland, a rare condition which has affected about one hundred people in the United States since people began recording such things. Because of their metabolic abnormalities, giants are prone to a host of medical problems and usually have a shorter life span than people of average height. Robert Pershing Wadlow (1918–40) of Alton, Illinois, who reached the height of 8 feet 11.1 inches and 490 pounds, died of an infected blister on one of his feet when he was twenty-two. Because he had little sensation in his size thirty-seven feet, Wadlow, who *The Guinness Book of World Records* cites as the tallest person in recorded history, didn't realize the severity of the problem until it was too late. Martin Bates lived to be seventy-four, unusual longevity for a giant.

Because accounts of Martin's early life conflict on so many great and small points, I've concluded that all anyone can say about him with certainty are the few facts printed on the historical marker in Seville. How Martin may have spent the twenty or so years between the time he left home and when he and Anna met is less certain. Apparently, Martin was a student at Emery and Henry College in Washington County, Virginia, when the Civil War broke out. The sixteen-year-old quit school and enlisted in the Fifth Kentucky Infantry. Eventually, he was promoted to captain in the Seventh Battalion of the Confederate Cavalry. When he went home to Whitesburg in 1863, he found that his brother James, a Union sympathizer, had been murdered. Captain Bates caught the eight men who were responsible and hanged them. On April 15, 1863, Martin was arrested by Union Army officers. One source suggests that he was arrested

because of the retaliatory murders he committed; another that his arrest followed a battle near Cumberland Gap in which he was wounded. The Union Army took Martin to Camp Chase, a prisoner-of-war camp near Columbus, Ohio, where it displayed him as the "Kentucky Giant." After his release from prison, Martin may have resigned from the army or he may have been honorably discharged, either because the cavalry didn't have a horse that could support his weight or because it was too difficult to find uniforms to fit him. After Martin's discharge (or resignation), he went home to Whitesburg where he found the family home burned down and his family gone. Martin and his nephew joined the circus in Cincinnati and later traveled with John Robinson's Circus. At some point, Martin joined Barnum.

I can't say precisely when or where Anna and Martin met. The historical marker in Seville says that they met in 1871. Another source says that they met in 1870 in Elizabethtown, New Jersey, where they were asked to join Barnum's three-year European tour. Yet another source says that they met in 1869 in Mount Pleasant, New Jersey, at the home of their friend General Winfield Scott. Though Scott was a patron of the American Museum, he died in 1866, so this story is unlikely, unless the giants met at a house still identified as Scott's after he passed away.

Anna had worked with many other male giants at the American Museum, including Monsieur E. Bihin, variously billed as the French or Belgian Giant and the stout Colonel Routh Goshen, the Arabian Giant. Perhaps she'd met seven-foot-nine-inch, 425-pound Angus MacAskill (1825–63), Nova Scotia's other famous giant. Though the presence of female giants in show business was far less common than that of male giants, perhaps Martin had encountered other titanic women in his travels with the circus. But I like to believe that whenever and wherever Anna and Martin met for the first time, chills of delight ran up their long spines and they felt an immediate affinity for each other. By most accounts, when they left the United States on tour in 1871, they were acquaintances; before their ship landed in Liverpool, they were engaged. On June 17, 1871, they married at St. Martin-in-the-Fields Church in Trafalgar Square in London. In their

wedding picture, Martin, a stout man with thick, dark, curly hair, wears light gray pants, a blue, knee-length jacket, a white waistcoat and the gold watch that Queen Victoria had given him. Anna wears a white satin dress covered with orange blossoms, a mantillalike veil, the diamond cluster that Queen Victoria had given her, and a diamond brooch from Martin. Anna clutches Martin's left arm with both of her hands. At the wedding, Judge Ingalls gave the bride away; Millie-Christine, Siamese twins known as the Two-Headed Nightingale, sang a duet; Queen Victoria presided. Thereafter, the Bateses toured as husband and wife.

Eleven months and two days after their wedding, Anna gave birth to an eighteen-pound, twenty-seven-inch girl. Despite the efforts of two famous British obstetricians, Doctors Buckland and Cross, the baby died at birth. One story says that she was exhibited at the London Hospital Museum. Another says that she was preserved in a jar of formaldehyde and exhibited by the circus at St. James Place and the Crystal Palace. The grief-stricken parents completed their tour, though Martin said that they appeared only at the request of European royalty. July 2, 1874, they left Europe, visited Anna's family, and then traveled to Ohio.

Why did the Bateses choose to settle in Seville? Perhaps they were drawn to the village because like the little towns they'd grown up in, it was small enough that they could know almost every one. After years on the road, they may have craved such connectedness and rootedness. Perhaps there was something about Seville that led the Bateses to hope or believe that, there, they would no longer be monstrosities on display but a farm couple living a quiet, typical life. And perhaps they hoped to overcome the trauma of their child's death with a fresh start in a new place, where they found little to remind them of what they wanted to leave behind. But surely thousands of other little towns could have offered the same respite.

Perhaps Martin had seen Seville while at Camp Chase, or while traveling with the circus, and felt drawn to it. Another theory is that the physician treating Anna's tuberculosis thought that living near a large, inland lake would be salubrious. But Seville is about forty miles from Lake Erie, not

a short distance in a horse-drawn age. Possibly the Bateses chose Seville because they had a friend there. In the off seasons, they had visited James Craven on his farm near Seville, where he kept a menagerie and trained animals for Barnum. After they settled in Seville, the Bateses acquired unusual pets from Craven, including a boa constrictor and a monkey named Buttons. And, too, circus people retired in nearby Westfield Center. Perhaps the local people were accepting of, or least used to and indifferent toward, the presence of circus "freaks." What is certain is that Martin wanted to farm. "We journeyed west for pleasure," he wrote in his autobiography. "While in Ohio, I purchased a farm in Seville, Medina County. It consisted of 130 acres of good land . . . . I had determined to become a farmer, so I stocked my farm with the best breeds of cattle, most of them being full-blooded and short horns."

Yet the Batses weren't typical. The First Baptist Church in Seville made the Bateses' pew four inches higher than the others so that the giants wouldn't be cramped as they worshipped. Martin wrote that the ceilings in the house he designed and built "have a height of fourteen feet, the doors are eight and one half feet in height. The furniture was all built to order and to see our guests make use of it recalls most forcibly the good DEAN SWIFT's traveler [Gulliver] in the land of Brobdingnag." Martin ordered a custom-made piano for Anna, which sat on thirty-six-inch stilts; their bed was ten feet long; the front staircase was extra wide, though the servants' staircase was average-sized; Clydesdales pulled their colossal carriage. On display at the Seville Historical Society Museum are the eight-and-a-half-foot double doors from the Bates home behind life-sized statues of the couple and their baby's enormous crib. Such accommodations were so costly that the Bateses had to return to touring. In 1878, they traveled through western mining towns with the W. W. Cole New York and New Orleans Circus and Menagerie. In *The Ways of the Circus*, George Conklin and H. W. Root write that wherever the Bateses went, Cole provided them with a room in the best hotel in town, a carriage in which to ride to that hotel, and a strip of carpeting for them to walk on from the carriage to the front door. Martin took pleasure at the length

of the expense accounts that he and Anna racked up during their stays. Surely, Cole paid handsomely for the giants' hefty meals.

After the tour ended, they returned to Seville. Anna gave birth again on January 19, 1879. Two local doctors struggled to get forceps around the baby's big head. In the end, they wrapped a bandage around his neck to assist his passage through Anna's long birth canal. The twenty-three-pound, twenty-eight-inch-long boy was the largest human baby on record and the only recorded giant born to giants, though I suspect that the Bateses' first child was also a giant. I wonder how Anna and Martin spent the eleven hours that passed between the child's birth and death. Did they joyfully and tearfully look for and find evidence of themselves in their child's face and body? Did Martin witness their son's last few precious hours alone, since Anna was too exhausted from the labor and delivery to stay awake? Did the neighbors stop by to offer their condolences after they heard the news or to look on with curiosity? The Bateses buried their son in the Mound Hill Cemetery under a headstone that simply says "Babe." After the child's death, they toured with the Cole Circus for two more seasons. They were, according to Martin, "the leading attractions." An 1879 circus bill claimed that the giants had been "secured at the cost of $20,000"—the equivalent of about $382,565 in 2005.

Anna spent the next eight years at home in Seville and in declining health. She even stopped teaching Sunday School. On August 5, 1888, a day short of her forty-second birthday, she died. Different sources attribute her death to different causes—tuberculosis, heart failure, kidney failure, thyroid goiter. Martin telegraphed the dimensions of Anna's body to a Cleveland coffin-maker. When he learned that the craftsman had questioned the proportions and so sent a normal-sized coffin, he was furious. The widower ordered a new coffin, which delayed the burial of his late wife by three days, as well as a coffin for himself, which he stored in his barn. Anna's family traveled to Seville for her funeral, held on the front porch of the Bates home, her burial at Mound Hill Cemetery near her baby son and sister Maggie, and the memorial service at First Baptist. Near Anna's grave, Martin erected a fifteen-foot monument made

in France of a woman wearing a Greek robe, similar to what Anna had sometimes worn when she performed. Though Martin married again (his second wife was the five-foot-tall daughter of the Baptist pastor and his wife), when he died in 1919, he was buried next to Anna.

What I'd most like to read on the historical marker in Seville is how the people of that community reacted to their famous residents. Photographer Diane Arbus, who often chose freaks as her subjects, wrote that "Most people go through life dreading they'll have a traumatic experience. Freaks were born with their trauma. They've already passed their test in life. They're aristocrats." Perhaps the Sevillians perceived this nobility in the Bateses. Or perhaps they sensed a joyfulness in them. Martin wrote that with the exception of the death of their baby (by that he meant their second child), "our lot has been one of almost uninterrupted joy." Certainly, the giants were not social pariahs. Anna was active in the church and went to quilting bees. Martin, however, wasn't as easy to get along with. According to Donald Gottlieb, curator of the Seville Historical Society Museum, Martin was a gambler who didn't pay his debts and he was bitter about his giantism and about being a Confederate living in a northern town. He hit people with his cane, spit tobacco on those he didn't like, and wore his Confederate uniform to town to see what kind of reaction he'd elicit among his Yankee neighbors. But, too, he loved children and they him and he loaned money to their parents.

Perhaps the Bateses were the life of the party. Once while they were dancing together at a party, the floor broke, which the owners chose to display rather than repair. Perhaps people found Anna fascinating company. Her obituary in the *Seville Times* described her as a woman who had "acquired a breadth of information and facility of expression which made her very interesting as a companion and conversationalist." One account says that the procession of carriages at Anna's funeral extended the entire distance between her house in the country to Mound Hill Cemetery on East Main Street. Perhaps the people of Seville were honored that their famous neighbors, people who had traveled in the United States, Canada, and Europe, who between the two of them had kept company

with Presidents Garfield and McKinley, General Winfield Scott, P. T. Barnum, Queen Victoria, the Prince and Princess of Wales, and other European royalty, chose to settle near their village and distinguish it from all others. Perhaps eventually, Sevillians wearied of gossiping about the wealthy, worldly neighbors who towered above them and saw them as just folks. Then when they ran into one of the Bateses on shopping day, they talked with them about the same things they talked to anyone about: the price of sugar or corn, church business, the assassination of Ohioan James Garfield, the arrival of yet another railroad in Medina County, the efficacy of Pickham's Compound for female complaints.

Most contemporary Sevillians know of the Bateses. They've seen their graves just inside the east entrance of the cemetery or the barn, still standing on the edge of Seville, with "Captain M. V. Bates" written in tiles on the roof. Some of the older residents may remember the capacious Bates house, which was torn down in 1948. Sevillians who attend First Baptist probably have heard about the pew where the Bateses once witnessed altar calls, since cut down to size and placed in a Sunday School room. If they went to school in Seville, they probably went on field trips to the historical society museum where Bates memorabilia is on display. And they probably remember the September 4, 2000, dedication ceremony when the village of Seville along with the Ohio Bicentennial Commission, the Longaberger Company, Seville Kiwanis and Lions Clubs, the Guilford Grange, the Seville Historical Society, and the Ohio Historical Society erected the historical marker in Stanhope Park. This plaque reminds Sevillians that their home place is distinctive. This plaque tells those of us passing through that one of the factors that distinguishes the people of Seville from those living in Canaan, Creston, Burbank, Lodi, Homerville, Sterling, Wadsworth, and other towns in the area, is that giants once lived among them. And this plaque tells the traveler that if Seville, which seemed so little and common before one stopped and read the sign, is distinctive and remarkable, then perhaps the traveler's own home place is distinctive and remarkable, too.

Fourteen

Departure Moon

Moon Launch

I walk at the Pioneer's Park Nature Center once a week or so, in part so that I can observe who or what has arrived at or departed from the prairie or woods since my last walk. This June I've been watching and listening to downy woodpeckers, daintier than the plentiful, robust red-bellieds in my backyard, and western meadowlarks, stalking insects in the grass or burbling their flutey descending notes from every fence post. Cottonwood-seed down dusts the ground and vegetation like a light snow. Bur cucumber, that lusty climber, each leaf an irregular star, is starting to drape other plants.

On my first visit to the creek in June I saw a lump of mud on the foot-

bridge. A moving lump of mud. Since snapping turtles don't belong on narrow foot bridges, I tried to move it into the grass. Each time I touched the shell near the turtle's hind legs, it snapped at the air with its pink, toothless beak. Each time it snapped, I lost my nerve. What was instinct so urgently and insistently pulling it toward on the other side of the bridge? I found two sturdy sticks and positioned them on either side of the shell, the way one unaccustomed to using chopsticks might try to pick up a water chestnut. I pushed the turtle with the sticks; it snapped as it spun a quarter-turn. I pushed; it whirled and lunged. Finally I nudged the turtle off the bridge and into the grasses and nudged it again so that it was headed downhill toward the water. I waited beneath the sycamore tree at the top of the creek bank until I saw the hemlock part and heard the slap of something large entering the water.

Many of the treasures that I discover on one walk depart before the next. In early June I knelt in the mud to study the dark, gelatinous islands of frog eggs floating near the shore of a quarter-acre pond. Enough eggs, should they all hatch, to convert the pond into a solid, wriggling mass of tadpoles. But the following week the eggs were gone. Two weeks after that, the pond had contracted six to eight feet. Where spawn had recently floated, killdeers darted on dry, bare earth and called out their own names. By the end of June, scouring rush was moving toward the center of the cracked saucer that had once held water. In late June, when I sought colonies of fragrant, pink milkweed blossoms and the red and black beetles that feast and mate on the pale leaves, I met the ghost of the snapping turtle on the bridge and at the former pond, the legions of tadpoles that perished before they could grow legs and lungs. Each of these departures and remembrances pulled with it a wave of regret. What had been there was gone, never to return in exactly the same way.

After a spring or summer walk, I go to the restroom in the Prairie Building, take off my shirt and pants, and shake the dog ticks into the toilet. As I left the building after my first walk in June, I noticed a stack of maps and calendars of the June sky in the information rack near the door. Sky: mere backdrop, a constant against which hawks or swallows

or iridescent clouds or lightning bolts appear. Sky: a wilderness crowded with the untamed movements of stars and planets, suns and moons. I have been so inattentive to the moon's presence, that I didn't know when and where to look for it in the sky on any day of the year. I took a chart. This June, I would discover the moon.

Illusions

On the morning of June 3, I gazed upon a waning crescent moon, a thin, sliver of melon rind, horns pointing to the left. Seeing the moon against the blue dome of the sky is a phenomenon that I can observe several days in a row each month. Yet it always surprises me: the moon belongs in the nighttime sky among stars and starry swarms.

Everything I learn about the moon tells me that it is not as it seems. From my vantage point, the moon appears white, yellow, or occasionally orange. Ancient astronomers once thought that the darker portions of this waterless orb, what we now believe to be lunar plains, were seas and named them "maria." They thought that the brighter areas, what we now believe to be highlands, were continents and named them "terrae." In truth, the moon is a dark brown or dark reddish-brown rock formed from cooled lava, pumice, and igneous rocks. We only see the portion of the moon that is sunlit, which is why it appears bright and light and shadowed rather than the color of dried blood.

From my vantage point, the moon moves and I stand still. Yet 96 percent of what I perceive to be the moon's motion is due to the speed of Earth's rotation. The remaining 4 percent is caused by the moon's actual movement. If I had remained in my backyard on June 3 from moonrise at 3:50 a.m. until moonset at 4:49 p.m., the waning crescent would have remained relatively still while I streaked past in my lawn chair. When it was time to go in and start preparing supper, I would have moved so far to the east I could no longer see the moon.

The moon appears to be fickle and shape-shifting. Yet the moon's movements are so reliable and predictable that you can base a calendar on them. Each day the moon rises an average of fifty-one minutes later and it moves twelve or thirteen degrees in its orbit. What we see as the

moon's phases during a twenty-nine-day lunar month aren't changes in the moon but variations in the amount of sunlight reflected from its surface as it orbits the Earth.

Even the names for the phases of the moon aren't what you'd expect them to be: new moon, old moon, the dark of the moon (one and the same); young or waxing crescent (logical); half or first quarter (numerically inconsistent names); full (logical); gibbous or waning crescent (logical if you know that *gibbous* is Old English for "hump-backed"); and third quarter (illogical since it describes a moon that looks like half a pie). Until my forty-eighth summer, I never had learned the names of something so obvious and dependable as the stages of the moon, yet my father's mother, one who was well versed in the language and the movements of the moon, planted her garden, scheduled her family's haircuts, and potty-trained her four sons according to phases of the moon.

The moon appears larger when it's rising or setting than when it's overhead. This, too, is an illusion. When the moon is near the horizon, it looks large in relation to the nearby roofs and tree branches. But high in the sky, it's beyond comparison and so appears small. Because the moon rotates on its axis in relation to the sun and because the Earth, too, is moving, one side of the moon is always hidden from our view. We call this the "dark side," even though it is not. It, too, is illumined in phases, though we never see them. Slight changes in the moon's speed of revolution and the incline of its orbit cause it to wobble. These "librations" allow us to occasionally see a little of what is usually hidden on the far side. Consequently, we see slightly different halves of the moon's surface at different times of the month.

The moon appears to be round, but in reality, it's egg-shaped, with the narrower, more pointed end facing the Earth. Likewise, its orbit is an ellipse, an oval. This means that the moon's distance from the Earth and, consequently, its apparent size change as the lunar month changes. When the moon is in its perigee, that is, when it's nearest the Earth in its orbit, it's 225,742 miles away. When it's at its apogee, or its maximum distance from Earth, it is 251,968 miles away. Then its movements are

the slowest in its uneven orbit. But this thirty-thousand-mile variation is beyond my powers of perception or attention.

Compared to the sun, the moon seems inconsequential. Yet if it were to drift out of the Earth's orbit, we'd have a vastly different planet. The moon pulls land and water on the side of the earth closest to it toward itself and away from the land and water on the far side of the earth. This produces tides in all bodies of water, but the rising and falling is especially noticeable in the oceans. In the absence of this pull, the waters in our seas and lakes would be calm and the shorelines stable, no longer belonging to the sea one moment and the land the next. Because the moon and sun are constantly pulling on Earth's equatorial bulge, Earth wobbles like a top. Yet, too, the moon's presence has had a steadying effect on the Earth's wobble, leading over the past billions of years to a more stable climate. Without the moon, that fine balance of forces that allow the Earth to host plant and animal life might not exist. Without the moon, we might not be here.

Naming the Moon

The old names for the June moon point to what best characterized that twenty-nine-day cycle for those living in a particular time and place. In North America, the Algonquin tribes called June the Strawberry Moon. The Cherokee called it the Green Corn Moon; the Potawatomi of Michigan, the Turtle Moon; the Ponca of northeastern Nebraska, the Hot Weather Begins Moon; the Lakota of the northern Plains, the Moon of Making Fat. In parts of Europe, June was the Rose Moon; the Celts called it the Moon of Horses. The Chinese called it the Lotus Moon because that is when that lovely flower unfolds. Some call it the Honey Moon, because the light of the full June moon is the best time for harvesting honey from hives.

I offer names for the June moon that best characterize that twenty-nine-day cycle here in the heart of North America in the early years of the new millennium: Moon When the Lawnmowers Roar, Yard Sale Moon, School's Out Moon, Cheap Melon Moon, Anniversary Moon, Cottonwood Seeds Clog the Air Conditioner Compressor Moon. But for me, this June moon is the Departure Moon, the Moon of the No-Longer-There, the Sorrow-making Moon.

Waxing Gibbous

On June 19, I drove Meredith to the University of Kentucky in Lexington where she participated in a Lincoln-Douglass debate camp. Three weeks later, her father picked her up and drove her home. I had never been so long without her and feared that I'd pine away in her absence. To fill the time, I cleaned closets, wrote an entire essay, visited with friends, and continued searching at the Humane Society for my beautiful, cantankerous cat Cletis who disappeared June 1. Meredith feared that I'd be so forlorn in her and Cletis's absence that I'd adopt a half dozen cats from the pound, all sneezers and coughers with oozing eyes and mangy pelts, all doomed without me.

On the way to Kentucky, we stopped in southern Illinois, where we lived for three years in the mid-1990s, and spent a couple of days with our friends Carol, a psychotherapist, and Bridget, an advisor at the university. When we first met Bridget, we lived in a house catercorner from where she, her late husband, and their three children lived. Bridget's modest, rented house had been full of spindly, worn-out, or makeshift furniture, old family photographs, framed icons that she and her first husband had collected on their trips to Russia, and cats. At the time, I was still grieving my recent divorce and was in the midst of a contentious, long-distance, joint-custody arrangement, which meant that I drove Meredith to and from the St. Louis airport a couple of times each month. And I had just started a new job. After years of teaching composition to high school or first-year college students, I was suddenly teaching creative writing and literature to graduate students, which required hours of preparation for each class. During this sad and demanding time, Bridget's kitchen was where I most wanted to be. Her children's art papered most vertical surfaces. The linoleum was bumpy and busily patterned. The small counter was crowded with gadgets, canisters, a drain rack full of clean dishes, and a lounging cat or two or three. Long paper chains that Meredith and Bridget's daughter, Anna, had made hung from the curtain rods. I'd sit at Bridget's kitchen table and forget, for the time being, my burdens as she spun one slow, funny story after another and we drank decaffeinated

coffee so stout that it left me sleepless. People in my family had kitchens like this: homey, cluttered, at the heart of things.

On our most recent trip to southern Illinois, Meredith and I were apprehensive about staying with Bridget. Since we had last seen her two Junes ago, she had married a man with power and money and moved with him into the house they had built between the eastern edge of a golf course and the western edge of the Shawnee National Forest. Except in Anna's room, the only homey room in the house, there was no clutter anywhere, even on the long, runwaylike kitchen counters, and almost everything in the house was new. Bridget and Paul's bedroom is larger than my living room and bedroom combined. Down the stairs is a mirror-lined, performance studio where Bridget stretches and dances. Because Paul is allergic to cats and Bridget can't live without them, her cats have their own room, stocked with a television, a VCR, a rocking chair, a private entrance, their own separate heating and cooling system, and stair-stepped shelves on the wall where they can nap. The only photographs of Bridget's children are recent and expensively framed. Gone are the photographs of her parents, her children as babies, her children's father and his family, or my favorite: Bridget as a senior in high school. But Meredith and I were relieved that in spite of her new address, her new, hyphenated last name, and her new, St. Louis hairdresser, Bridget is still generous and funny and tells stories in the same slow, dramatic way that she always has. Paul is a good man, and it's plain to see that he and Bridget are in love.

Carol and her daughters joined us for dinner on Paul and Bridget's deck overlooking the dark and pathless forest. Carol thrives on change. The last time I saw her, her hair was black and shagged. During our June visit, it was cut in a sleek, blonde, gray and light-brown page boy. The next day, she was going to the hairdresser for a new look—short, silvery spikes, I imagined. At dinner Carol told a good story about her first and recent attempt at rock climbing and how clinging to the side of a vertiginous escarpment was like being in labor. She told another story about how during the last presidential election, when the bishop of her diocese said that communion would be denied to anyone who supported abortion and

homosexual rights, Carol, a lifelong Catholic, left the church, once and for all. Now she's a Unitarian. While I admire Carol's willingness to act on her beliefs, I am uneasy about how easily and completely she severed ties with what she once loved. Wouldn't it have been more courageous to have stayed on and have worked for change from within than to leave completely?

After dinner, Bridget, Carol, and I walked the golf-cart paths in the golf course. Carol spoke of her plans to leave her current job with a state agency for a job as an independent counselor at a healing arts center. She'd have to recruit clients, pay rent, buy her own insurance policies, and design her own retirement plan—a daring agenda for a woman in her mid-fifties who would soon have one daughter and then another in college. But, said Carol, the Universe was calling her to this. Only at great personal risk could she refuse. Carol and I were two moons whose orbits cannot cross. Later that summer, I would begin a new job because after seven years of wildly fluctuating monthly income from part-time teaching and freelance writing jobs, insurance deductibles that exceeded one-quarter of my yearly income, and no retirement plan, I was yearning for predictable paychecks and health insurance that I could actually use. In truth, I would rather climb sheer rocks than be self-employed. But I admired Carol's boldness and daring and I told her so.

At the sight of the distant hills of the forest, I wondered why I ever left this place. "You left it to go home," I reminded myself. "A good reason." Yet I also wondered how my life would have unfolded in such a place. Bridget and Carol are zesty, supple, ever changing. Both look and act several years younger than their chronological age. I am fixed, brittle, and reluctant to change. I look and act my age. Might I have been as open to change and adventure as Bridget and Carol if I lived on the edge of a forest rather than the edge of a prairie? Or would I have been this way anywhere?

The path led us into a forested valley where lichen-covered rocks taller than me formed a stretch of creek bank. Bridget asked me what I thought of my ex-husband's new house. "It's a huge, ten-year-old, red brick with

white pillars, plunked down on the corner of a dairy farm right next to the highway. Of course, I haven't seen the inside."

Bridget was surprised. "Why not?"

"Didn't I tell you about the blowout?" I remembered telling Carol about this shortly after it happened. If I hadn't told Bridget, it was probably because she had just met Paul and had other things on her mind. I briefly summarized an encounter from two summers ago when my ex-husband's current wife, Deborah, a woman who I had considered a friend, of sorts, a woman whose children I took to plays at the children's theater or out for ice cream, unexpectedly said brutal things to me that I haven't yet been able to forget or forgive. "I'm the one she's mad at," my ex-husband later apologized. "But she took it out on you." Since then, I haven't been invited into their home and their children have been to my home only twice and then only because they pleaded with me and their parents. Bridget remembered that when she and her daughter visited us three Junes ago, Deborah and her children joined us for the evening. "You two got along so well," Bridget said.

"What I want to know," Carol blurted out loudly, "is why you're still holding on to this." Carol often blurts out things that surprise and provoke people.

"I don't think I am. It's just the way things are. There's a huge rift and nobody seems to want to fix it."

"Sometimes we hold on to our self-righteousness," Carol said. I imagined myself clinging to the side of a steep bluff in the forest. "What purpose is that serving you?"

I shook my head. I didn't have an answer to the question that Carol was asking me or to the one that vexed me even more: Why did the loss of Deborah, my ex-husband, and their children grieve me?

We crested the hill and there was the moon: bright, round, white, and pocked as a golf ball.

"Is it full?" Bridget asked.

"It will be tomorrow," Carol answered. But tomorrow was near. If we had waited a couple of hours until fourteen minutes after midnight, we

would have witnessed the precise moment when Moon, Earth, and Sun were exactly aligned, and we on Earth saw a bright, ripe moon and a softly illuminated landscape. A minute later, we could have watched the moon begin to wane.

Departures

Many times I've been the one to depart, causing others to protest, grieve, celebrate, or deny my absence. But those departures were long ago. This June I'm in place; too many of the other figures in the landscape are receding. Some nights I lie awake, counting and mourning my losses. When I become aware of what I'm doing, I force myself to remember what is present and good. But it's my losses that consume me, and soon I'm dwelling upon them again. So I get up and look for the moon. I'm comforted that it doesn't vary one jot from the date, shape, and location specified on the sky chart and that it never leaves without returning. If only the moons, planets, and constellations in my life were this predictable. But some nights, the moon isn't enough. I repeat and repeat the comforting and terrifying words of the Forty-sixth Psalm until I fall asleep: "God is my refuge and strength. I will not fear, even though the earth be removed and the mountains be carried into the midst of the sea."

I know that every created thing rises and passes away. Even the moon will one day drift or be pulled out of the earth's orbit or will collide with some fiery, hurtling asteroid or planetoid. Until I abide deeply and constantly in the unchanging Spirit, life's only constant, I will suffer. But my heart believes otherwise. My heart believes that any one and any thing that it has ever loved should remain near and whole, safe from moths and rust and thieves and time. And so, I count and mourn my losses.

Memorial Day weekend, twenty-year-old Ian and two of his friends moved into a house on the north side of the city. It was the right time for him to leave. He had grown too big for my little house and was straining for more responsibility and freedom than he could find under my roof. Yet I didn't expect him to move out of my orbit so completely. Without my advice or assistance, Ian set up his kitchen, pays most of his bills, buys groceries, and gets himself up for work most weekdays and usually on

time. The only thing he needed to know from me was what to plant along the edge of his patio that would provide shade-and privacy-producing foliage. When did he start thinking of such things? Morning glories, if you're in a hurry, I said. Trumpet vine or clematis if you can wait.

In my Iowa home town, the attic and the second story of Horace Mann Middle School, a beautiful, brick Georgian building constructed in 1930 on the edge of an oak-filled park, caught fire just days before school was out. This was the school that I yearned to attend with my friends when I was eleven but couldn't because my family moved to another part of town, and so to another middle school district. But Horace Mann was the school where I completed my teaching practicum twenty-five years ago. I loved the tall ceilings and windows, the spacious interior halls, the glossy woodwork, the old school fragrance, and the fact that the basement was excavated by WPA workers five years after the school was built. Even before the blaze was extinguished, school district officials claimed that the building was a complete loss. With declining enrollments, the district didn't need three middle schools and so they assigned students and teachers to the two other middle schools and bought a pair of sixteen-classroom, portable buildings. Next spring they will raze Horace Mann. With the loss of each memory-filled landmark in my hometown, with the construction of each new building, street, subdivision, or bridge, it looks less like the place where I grew up. Because I am not there to participate in the changes, I want my growing-up place to be freeze-dried, caught in amber, and packed in mothballs, matching exactly the picture of the place that I carry in my head and my heart.

When my father was diagnosed with prostate cancer, we were told that he had three years before the disease killed him. Nine years later the cancer has seeped into his spine and collarbone. That he so grandly refuted his doctor's grim prediction makes it hard for me to believe that he might be leaving us now, day by day, cell by cell. My family is not courageous and honest in the face of death and dying. Our loved ones die alone or in silence because we are unable to speak the truth to them and to each other about what is at hand. In a telephone call that left my mother in

tears, I made her promise to tell me the truth about my father's condition, so that I can be present for his sudden or gradual departure.

My ex-husband's and Deborah's move from the house where my ex-husband and I once lived into a posh house a few miles south of the city limits frets me. On those days when Meredith stayed with her father in his old house, I could picture where she was sleeping, studying, or practicing her violin. But because I have never seen the bedroom where she sleeps or the chair where she sits as she eats dinner on those days when she stays in her father's new house, I don't know where she is when she's there.

This spring I resigned from the job that I've held for the past seven years. It was a very good, part-time job that gave me the freedom and flexibility to write almost as much as I wanted, and to be present when my children needed me, though with never enough money to run a household. August 15, I began my new job. Now when I lose sleep, it's not because I'm worried about how I'll cover an unexpected medical expense or a car or house repair but how I'll find the time and the clarity to tend to the essays welling up inside me. When my former boss sent me a brief biography of the likable and accomplished man that she'd hired to take my place, my stomach rolled. By my own choice, an era of my life had ended.

Perhaps large chunks of unbroken time to write isn't the necessity it once was. After twenty years of almost daily writing, I fear that I've already crafted into essays the most highly charged material of my life—the epiphanies born of family dramas, the loss of various innocences, love found and lost, the journey to become an engaged citizen, to become inhabitory, to become a dwelling place for the Spirit. I fear that unless life throws something new and unsettling my way, I will have no reason to essay.

Other Moons

There's more than one June moon out there. Neptune has thirteen, Uranus twenty-seven, Saturn forty-six, and Jupiter, so massive that it's almost a solar system unto itself, has sixty-three. Within the Earth's solar system, there are at least 140 moons and presumably many others orbiting the planets of other stars. Most moons are beyond our ken, but Io, Europa,

Ganymede, and Callisto, the four brightest of Jupiter's moons that Galileo saw through his telescope from his backyard in Padua, Italy, we, too, can see.

The Earth also has more than one moon. Cruithne is a three-mile-wide satellite that has been captured by forces at the gravitational balance point that exists between the Earth and the sun, like that poised between all planets and the sun. Cruithne (pronounced croo-een-ya), named after a Celtic tribe also known as the Picts, was discovered in 1986 at an observatory in Australia. But it was eleven years before scientists understood Cruithne's orbit: every 770 years, this moon completes a single and peculiar horseshoe-shaped orbit, which takes it both inside and outside the earth's orbit.

Fathi Namouni, one of the researchers who designed the mathematical model that explains Cruithne's path, says that the "new dynamical channels" through which free asteroids become temporary moons of a planet and stay a couple or many millennia are the same channels by which a moon can escape a planet's pull. The moon where Apollo astronauts once walked, is Earth's permanent traveling companion; new moons, such as Cruithne, are only with us for a leg of the journey, in Cruithne's case, a mere five thousand years. If Cruithne, a moon I've never seen, disappeared, would I feel its absence? Can the same channel by which I became attached offer me release from attachment?

Other Departures

On June 29, I learned that Lela, a neighbor who I've known for fourteen years, had died the preceding March. Her husband, Mel, hadn't told any of the neighbors and debated whether he should tell what little remained of her family that she had passed over. The only reason I know about Lela's departure is because Mindy, another neighbor, asked Mel where her "little buddy was." Lela's leave-taking was long and slow. When I first met her, she was a feisty little bird who went to the senior citizen center for weekday lunches and insisted upon making her neighbors' business her own. Several years later, she stopped going to the senior center. She

continued to roam the neighborhood, but each year her range contracted like that of a drying pond. Two summers ago, she only walked as far as my house and back in her bedroom slippers. Last summer she withdrew to a chair on her front porch. Through our conversations, I could see that she had developed that self-absorption, that disengagement in the world of the living that I've seen in other elderly people. What went on in her neighbors' homes no longer mattered to her. At summer's end, she went into her house, and we never saw her again. Mel seems untouched by his wife's passing. But perhaps he began the journey of separation long ago and from such a close distance that her death was strikingly less significant than the long, woeful, and frustrating departure that preceded it. Perhaps when she died, there was little remaining of the woman he'd once fallen in love with. But for me, Lela's departure was both slow and abrupt. I would like to have gone to her funeral for one last look and to tell her good-bye.

For the past six years Kellie and her mother, Amber, have lived two doors down from me, with Amber's parents and grandmother. While Amber worked, her mother walked Kellie to and from school and cared for her. This June, Amber and nine-year-old Kellie moved to Washington State. The week before they moved, they sold what they couldn't take with them at a yard sale. For two days, Amber and her parents packed and repacked their cars. On the morning of the tenth, Amber, Kellie and her grandparents drove away. Two weeks later, Kellie's grandparents returned home to a house that may have been roomier and quieter or crowded and bustling with restless, sleepless, ghosts. Had Kellie's grandmother been prudent enough to guard her heart, knowing all along that these loved ones would leave? Don't count on supper always being this lively with all of us crowded around the table, she may have told herself every evening. Sparser, more spacious meals will return. Or don't so lose yourself in that wild, little red-headed girl that you forget your husband, because he's the who will be here when she's gone.

Perhaps this is the method: to love while letting go.

New Moon

Every departure, whether temporary or permanent, bears some resemblance to that primal departure of mother and child. What makes these departures and separations so anguishing is our deep fear that what departs is gone for good and that we've been abandoned. John Bowlby, the British developmental psychologist who named and studied separation anxiety, said that when faced with a departure, the child pleads or protests, feels despair and pain, then detaches or denies the affection that she or he feels for the departed one. Through the piling up of empirical evidence, the child learns that loved ones usually return, though they may be changed by their time away, just as the one left behind may be changed in the departed one's absence.

Just as the moon looks bigger near the horizon, departures, whether temporary or permanent, are more heartrending when fresh. When Ian moved into his north-side house, he took all of his tools out of my garage and a carload of possessions from his bedroom. I figured that because he hadn't taken everything with him, he hadn't officially and completely moved. But a couple of weeks later, the man who came to install a new water meter in the closet of Ian's bedroom told me that he'd watched his four children leave home and not one of them took everything. The next day as I passed through Ian's room on the way to the laundry room, it hit me, really hit me, that he was gone. I sat on the edge of his bed and wept. Of course, it wasn't him I was weeping for but myself and for how provisional everything is and how quickly and irreversibly time passes and how all of these June departures leave me feeling scoured and scourged.

One departure anticipates the next. As I drove away from the University of Kentucky campus, I watched Meredith walk toward her dormitory. Someday, I'll be leaving her—or she'll be leaving me—for an entire semester, perhaps at a campus even farther away. Meredith is preparing me for that day. Every year, more of her time and attention are filled with homework, violin practice, and friends. Debate tournaments take her away most weekends. She talks about people I've never met; she nar-

rates stories about events I can only imagine. Perhaps when she leaves for college, I will feel as I suspect that Mel felt about Lela's departure: the actual day of leaving is a slight grief compared to the long, slow severing that preceded it. And perhaps it's appropriate that as Meredith becomes less and less dependent on her parents, the frequency and strength of my interactions with her father and his family wane, too.

Earlier this month, a declaration popped into my head: "It's a good time to die." This pronouncement was freestanding, disembodied, not of my own making. "It's a good time to die," a woman's voice seemed to be whispering to me at every turn. I was alarmed by the truth of this statement. I didn't want to face the continued departures of my children, my father, the changes in my neighborhood, my writing, my friends. It was a good time to die. I prayed for insight. By late June, the mantra had twisted and turned itself inside out. Now it is more provocative than foreboding. Now it is more solacing than terrifying. This June is a good time to die. And what needs to die is that part of me that clings to what is ephemeral and passing. What needs to die is that part of me that believes that anything on Earth or in the sky above is permanent. What needs to die is that part of me that is averse to believing that while a departure is a severing or a parting, it can also be a setting-out point, a fresh, new beginning. The bird that you banded and released may return to your feeder next spring. The dark moon is at once dying and being born.

Just after dawn on June 29, I drove to Holmes Lake, a human-made, city lake about a mile and a half from my house. I stood on the levee where I had an unimpeded view of the moon—a moon that doesn't change or disappear in spite of how it looks to me, which on this morning is a thin sliver of melon rind, horns pointing to the left, a waning crescent. Because there are no eroding winds or rains to disturb the surface of the moon, the footprints that Neil Armstrong and Buzz Aldrich pressed into the dust in the Sea of Tranquility in 1969 are still there. On Earth, such marks would have been erased almost at once by wind, rain, vegetation, or human traffic. But scientists say that on the moon, footprints remain unchanged for ten million years or so. Likewise we can see through bin-

oculars the craters hollowed out by asteroids that slammed into the moon some three billion years ago. Because the moon is barren, bloodless, and silent, an unfertilized egg, from which no life will ever hatch, the craters, too, have changed little since that long ago moment of impact.

If you lived on the moon, there'd be no reason to gaze out your window at the unchanging landscape or the perpetually black sky except to watch a beautiful blue and white marbled planet, visible to you in phases, as it orbits the sun. A planet, whipped by hurricanes, blizzards, torrential rains, droughts, tornadoes, fires, tsunamis, and other calamities. A planet teeming with life and death, arrivals and departures, arisings and passings. A planet constantly changing. The only place to live.

Fifteen

Visiting Frederic

It's not a memory, really, but the peg on which a memory might hang. When I was in my late teens, my mother and I visited Frederic Leopold, who lived in a grand house, a mansion to my eyes, atop a 130-foot limestone bluff above the Mississippi River. "Pill Hill," my grandmother called this bluff because it was where doctors and many of the old moneyed people in Burlington, Iowa, lived. In my memory, Frederic, an old, white-headed man, and my mother, a young, red-headed woman, talked about wood ducks. I sat at a table in the sun near the back porch, bored by the occasion. Then my mother and I went home. I remember little else of the occasion because at the time I didn't care about wood ducks, old bluff-top houses, the Leopold family, the river, or the fleetingness of youth.

But when I was in my early thirties, I started caring. I bought a copy of *A Sand County Almanac with Essays on Conservation from Round River*, written by Frederic's older brother Aldo. The almanac was published in 1949, the year after Aldo's untimely death from a heart attack while fighting a grass fire at a neighbor's farm in Wisconsin. Aldo's almanac and the other essays in the collection came to my attention at just the right time, since I had begun to write my own essays about the land and its inhabitants in the two places I call home, Iowa and Nebraska. Aldo's essays mattered to me because he, too, had been imprinted by a river-sculpted landscape. Like me, he had looked out over the same, steeple-filled skyline and graceful bridges spanning what had been in his day a wilder river; had borrowed books at the 1893 library; had attended Burlington High School; had caught tadpoles and searched for arrowheads at Flint Creek; and had visited Aspen Grove Cemetery, not only because our dead were buried there but, in Aldo's case, because the cemetery was designed by his maternal grandfather Starker, and in my case, because the stone arch over the entryway was cut and laid by my great-grandfather Freiburg. Aldo's essays mattered to me because he and I had entered the world near the same stretch of the river, though seventy-nine years apart, and because he had already done so well what I aspired to do.

Now my copy of *A Sand County Almanac* is in tattered pieces and bound by rubber bands. The margins are filled with scribblings: red from my initial reading; blue, black, and pencil from subsequent encounters. Some notes are dated, chronicling the evolution in my thinking as I ruminated on Aldo's ideas about the impossibility of regarding the land without bias ("Only the mountain has lived long enough to listen objectively to the howl of a wolf."), his call for a land-based history ("Plant succession steered the course of history. . . . Is history taught in this spirit?"), his criticism of nature writing ("Books on nature seldom mention the wind; they are written behind stoves."), and the gold standard for making an ecological decision ("A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it tends otherwise."). Long ago I committed the latter to memory. And,

too, I was inspired by Aldo's language and imagery. Migrating geese are "a wild poem dropped from the murky skies upon the muds of March"; "The other months were constituted mainly as a fitting interlude between Octobers"; and the haunting opening of his foreword to the almanac: "There are some who can live without wild things, and some who cannot. These essays are the delights and dilemmas of one who cannot." That, too, I committed to memory.

Initially, my regret over having been so disinterested during that long-ago visit to the Leopold home had more to do with Aldo than Frederic. When I was in my early thirties, what I wanted to ask Frederic was, "What did Aldo like to play in this yard when he was a child? When he returned from the forests of New Mexico and Arizona in 1913 with a nearly fatal kidney disease, in which room did he convalesce? When he looked across the river, what did he see first—farms or wetlands, roads or birds? Did he regret never returning here to stay?" But now, it's Frederic that I seek.

My mother was one of a small group of people in Burlington who either had read *A Sand County Almanac* or knew of Aldo's national significance. And she cared about wood ducks. Consequently, she remembers our visit to Frederic in more detail than I do. Before she can tell her story about visiting Frederic, she must back up and tell how she came to meet him. That story begins with "Tom," or more accurately, Tom's wife, "Jane." When I was in upper elementary school, Jane and my mother carpooled to classes at Iowa Wesleyan College in Mount Pleasant, where both were pursuing teaching degrees. Jane and Tom lived on the South Hill bluff about a mile south of Frederic. My family lived on this bluff, too, though several blocks in rather than on the cusp of land above the river. When I was in high school, I babysat for Tom and Jane's two children, in part so I could stand at their living room window and look out over the wooded bluffs, the changing river, the floodplains of western Illinois, and south to Burlington Island.

One spring, Tom, an avid duck hunter, and Frederic collected six wood-duck eggs from one of the wood-duck nest boxes that Frederic had hung in a tree in his yard. These eggs either hadn't hatched with the others

in the clutch or the mother had been killed or had abandoned them. Frederic gave the eggs to Tom who brought them to my mother who was known for taking in injured, abandoned, or orphaned birds and tending them until they could be released into the "wilds" of our neighborhood. "Memory certainly fails me," my mother writes in response to my query about our long-ago visit with Frederic. "But it seems we had acquired [the eggs] over a couple of days." She made an incubator for the duck eggs by placing a towel-covered heating pad in the bottom of a cardboard box and kept the nursery in her and my father's bedroom, safe from our more predatory pets: dachshunds, blue jays, and box turtles. My mother tells me that our whole family watched as all but one of the eggs hatched. I can see my brothers, parents, and me (in my mother's dating of our visit with Frederic, I wasn't in my late teens, as I remember it, but eleven) bent over the cardboard box, watching the peeping eggs crack and break into pieces as the dark, wet, down-covered ducklings emerged. But I can't discern if this scene is my own memory, a conjured memory, or a re-creation of my mother's memory.

After the eggs hatched, my father poured low cement walls around a corner in the basement and placed within this pen a small, plastic wading pool with a gangplank so the ducklings could enter and exit it. They were not yellow like farm ducklings, but dark above and white below. I have no memory of our trips to the marshy area across the river near Gulfport, Illinois, to collect buckets of pond water, but I have a slight, wispy memory of the cement pen and the ducklings in their little pool, swimming, peeping, eating insects, duckweed, and algae, and shitting. They were not to be permanent residents at our house. Rather my mother, Tom, and Frederic were waiting for the exact moment when a wood-duck hen with a brood of her own could be persuaded to adopt these orphans.

We tended the ducklings for six days. Then about six one morning, Tom telephoned my mother. Frederic had just called Tom to tell him that one of his wood ducks was calling her ducklings, coaxing them to climb up the side of the nest box, jump onto the ground far below, and follow her to the river. Frederic had determined where the hen and her ducklings

would be descending the bluff (there were two routes) and crossing the railroad tracks, on their journey to the river. Tom stopped by our house, picked up the cardboard box containing the five ducklings, and went to meet Frederic. Timing was everything. Perhaps Tom didn't invite my mother to go along because he was in such a hurry that he forgot to ask her or perhaps he thought that another person would only slow down the working of their plan, and so his omission was intentional. At any rate, my mother only knows about the release second-hand. Once at the river, Frederic and Tom hid in the brush and waited until they saw the hen and her brood cross the railroad tracks strung between the bluff and the river. Then they coaxed the six-day-old orphans to fall in line behind the much smaller, day-old ducklings. Apparently the hen noticed nothing unusual, or rather, nothing that she objected to. While I was at home sleeping, the duck and ducklings waddled off to the wide and shining river.

Frederic was so delighted by this turn of events that he invited my mother to his house to see the wood-duck nest boxes that he'd made. My mother says that when she, my father, and I arrived at the huge house at the top of Clay Street, we found Frederic at a table in his backyard, filleting a pile of crappie that he'd recently caught at Crystal Lake Hunt Club, a private club on the Illinois side of the river to which one or more of the Leopolds had belonged since the 1890s. I don't remember anything about Frederic's appearance at the time of our visit except that he was old and white-headed. But in photographs I've seen of him, he bears a striking resemblance to Aldo: fair, handsome, bespectacled, intelligent-looking, deeply creased crow's feet, a high forehead. My father says that he was tall. My mother remembers that Frederic's wife, a gracious, friendly woman, was there, too. My father says that she was drinking wine. My mother remembers the cluttered yard. "It seems there was a grape arbor, or some apparatus to hold vining plants," she writes. She remembers that the place where Frederic was filleting fish was covered with cement. "It seemed everything was very grown up around this area, but appeared beautiful to me. I think the backyard must have been very lush. I wish I had the interest I have now to see what was growing there."

The adults talked, and then Frederic, who was in his seventies, leaned a ladder against a tree and climbed high, twenty-five feet, my father says, to peer at a hen and her eggs in one of his nest boxes. Frederic asked my parents if they wanted to climb up and look at the nest. They declined. Perhaps he asked me, too.

Being given something dear and precious before you know what it's worth isn't unusual. On my first birthday after leaving home, I was given an antique watch instead of the stereo I had hoped for, and in disappointment, left the gift in a drawer in a nightstand at my parents' house. A few years ago, I found the watch still in the box it came in and was charmed by the Roman numerals on the dial, the garnet embedded in the intricately embossed case, the gold chain. Long ago I was wooed by a man who was well-read, charitable, strong, gentle, wise, and a fan of my poetry, years before I recognized the value of such a constellation of traits, and so I let him go. Instead of driving home and visiting my great aunt, a woman whose generosity made so much possible, a woman whose body was crowded with inoperable tumors, I spent my days off on my newest obsession. There's still time, I told myself. Nothing urgent. But when she died two weeks later and alone, I was overwhelmed by a grief and a regret that still haunts me.

Another unseasonableness is when what we most need arrives too late. I found the lost earring, half of a gift brought from a faraway place, after I'd thrown its mate away. A man that I loved didn't love me until after I moved away and no longer cared. In a conversation with a stranger, I chanced upon a curious piece of information that would have provided a countertheme, perhaps even metaphorical splendor, in an essay of mine after that essay was published. I landed the job that will buy a bigger house and a little land as my children are leaving home.

Blessedly, there are instances of impeccable timing, of synchronicity. My father's stroke and brain surgery last October occurred the same week that my daughter and I visited him and my mother, a visit long planned, plane tickets purchased at a good price, and the absences written into my

course syllabi weeks ahead of time. Decades ago I showed up at a county fair in Kahoka, Missouri, on a whim, just minutes before Bill Monroe, whose name I barely recognized, and his Bluegrass Boys took the outdoor stage, and because the time was right, I fell fast in love with the man and the music. Last summer as I was walking along the bike path by the creek, swaddled in self pity, something stirred and I stepped outside myself and said hello to an old woman sitting on a bench outside the nursing home, her eyes shut and her face turned toward the sun. "I'm grateful for everyday," she said to me. And suddenly I was too, and I wondered about the confluence of forces that brought me and the woman to this place at this precise and perfect moment.

And so at a time when I long to revitalize my own belief in right timing, right placement, and right calling, at a time when I want to remember my parents as young and engaged in the world, at a time when I'd been away from that first geography so long that each of my dreams begin or end there and I awaken myself with my own cries of longing, I seek to reenter a long ago, far away, and sketchily remembered encounter and extract from it what I crave.

To open the door on a spring afternoon in 1968, I go in search of wood ducks. If I can recall what the birds in Frederic's backyard and our basement looked and acted like, if I can imagine why Frederic was so captivated with this bird over all others, perhaps I can call forth my lost or buried or misplaced memories and with them, construct a scene of that long-ago visit that is bright, detailed, and alive.

The wood duck, *Aix sponsa* (*Aix*, Greek for "water bird"; *sponsa*, Latin for "betrothed"), is so named because of the male's bright breeding plumage. The wood duck is "the betrothed water bird" or "the water bird in wedding dress." The drake has brilliant red eyes, a red patch at the base of his bill, and a white chin. His head is iridescent green, blue, and purple, with two white lines on each side: one set running from the top of the base of the bill to the tip of the crest; one set running from behind the eye to the tip of the crest. What I like best is that a pair of bold lines, one

white and one black, separate his russet-colored breast from his buff-colored sides. For the most part, the female is a mottled gray brown. But what singles her out as something special is her gray crest and the white, teardrop-shaped ring around each eye, the narrowest part of the drop pointing toward her tail.

Wood ducks are smaller than mallards, the duck species against which I compare all others. Both the male and female wood duck have a square tail, a white belly, a short neck, and a big crested head. The crest usually isn't upstanding like that of a kingfisher or titmouse; rather it's "at ease," as if combed back and down. The ornithologist Arthur Cleveland Bent says that the outer vanes of the primary wing feathers on both the male and the female wood duck look as if they've been sprayed with aluminum paint, a marking unique to this species. This silvery line is especially noticeable when the duck is in flight.

Wood ducks are also called "tree ducks" because they perch and nest in trees, a behavior I find exotic. The first time I saw a drake standing on a tree branch, I was as surprised as I would have been had I seen a coyote soaring above the treetops. Wood ducks are able to perch because their legs are placed farther forward on their bodies than is the case with other ducks, thus shifting their center of gravity forward. But, too, the nature of their flight may have earned them the name "tree duck." Because the wood duck's wings are broader, proportionately speaking, than those of other ducks, it is capable of remarkable flight maneuvers through the branches. Bent stood on the shore of a woodland pond at twilight on a summer evening and watched the wood ducks come in to roost: "On swift and silent wings they would glide like meteors through the tree tops, twisting, turning, and dodging, until it was almost too dark for me to see them." How could one not fall in love with such a bird? For Frederic it may have been love at first sight. His daughter Margaret Leopold Barker told the *Hawk Eye* that her father first became interested in wood ducks in the 1930s, when she was a child. "While visiting his mother's home at 101 Clay Street, Frederic was sitting by a bay window and he happened to see a duck sitting on a limb in one of the large trees. Fascinated with the

unusual-looking creature, Frederic immediately 'got a hold of Uncle Aldo' to see what he could do to encourage more ducks to come to the area."

Unlike most ducks who are ground-nesters, "woodies" lay their clutches of six to fifteen eggs in tree cavities. If the nesting site meets their standards, they'll return the next year. In "A Study of Nesting Wood Ducks in Iowa," published in *Condor* in 1951, Frederic writes that incubation does not begin until all of the eggs have been laid, a fact which he discovered through daily nest checks, flashlight in hand. By marking the eggs on the perimeter of the clutch, Frederic found that "in one-half day, two or more outer eggs in the group would be replaced by unmarked eggs, indicating not only a rolling of the eggs but an actual trading of positions." What refined awareness or curiosity led him to investigate such a thing? The hen incubates the eggs for about thirty days. Two days prior to hatching, the ducklings start pecking their way out of the shells. Twenty-four to thirty-six hours after hatching, the mother stands on a branch or at the opening of the nest or on the ground below and calls to her ducklings. Frederic writes that the preferred time for departure is when "the sun is an hour or two old so that dew and ground dampness is pretty well gone." His description of the exodus is tender and sweet:

> *When, at last, she decides to bring out her young, she makes a call or cluck that is difficult to describe. "Kuk, kuk, kuk" is repeated softly either from the nest entrance or a nearby limb or from the ground near the base of the nest tree. At once the ducklings can be heard peeping from the interior of the box. Very soon the first baby will appear at the hole, balancing there momentarily and sounding off with a staccato "pee, pee, pee, pee" repeated rapidly eight or ten times. Then, with tiny wings extended, the little fellow springs out to alight on the ground with a thump two or three feet from the base of the tree. If no obstruction is encountered in the drop, he strikes on his breast and is immediately on his feet. If he is deflected by a twig or other object in falling, he may strike the ground on his back or elsewhere and, in so doing, may be momentarily stunned. But, I have never seen a duckling*

> *injured to a point where he was unable, after a moment, to use his legs actively, in spite of the fact that many actually bounce several inches on striking the ground, particularly when short-cut grass has allowed the earth to bake rather hard in dry weather. I have watched fifteen or more broods leave their nest and have never seen any duckling reach the ground by any other means than jumping.*

What I most want to see are the "little fellow[s]" balancing at the entrance to the nest and leaping to the ground.

In Nebraska, where I now live, the easternmost edge of the state is the westernmost edge of the wood duck's range this side of California, where wood ducks also thrive. I search for wood ducks near the Haines Branch of the Salt Creek, a tributary of the Missouri. A naturalist tells me that several years ago, two wood duck families took up residence in two nest boxes constructed and placed there by the Boy Scouts, raised their broods, and never returned. Since then, the boxes have been uninhabited. Maybe this spring will be different. On a windy April afternoon, I cautiously, hopefully, opened one of the boxes, only to get a face full of sawdust. At DeSoto Wildlife Refuge on the Missouri River north of Omaha, I see plenty of wood-duck boxes in the trees and wood ducks on the water, but because I haven't yet achieved the perfect alignment of timing and intention that would compel me to hide in the brush when the sun is but an hour or two old on the exact day when the ducklings are but a day old and the hen is ready to entice them from the nest with a series of soft "kuks," I return disappointed.

I'd like to see the journey from the nest to the water, too. Frederic describes this as the "most dangerous and vulnerable period in the life of a Wood Duck." Ducklings are lost if they are tardy in leaving the nest, fail to keep up with the mother and the rest of the group, or are snatched by humans with a lucky or inerrant sense of timing. The journey to the river was particularly arduous for the ducklings that lived in Frederic's trees, since the steep terrain was covered with what Frederic described as a "dense growth of grey dogwood, box elder, annual and perennial

weeds, grape tangles, brush piles." Because the whole center portion of the eastside of the bluff had been quarried, there was a thirty- to forty-foot vertical drop from the quarry shelf to the ground below. Consequently, the ducks caravanned down one of two routes, each at opposite ends of the Leopold property. "In traveling to the cover along the edge of the bluff, the female always leads her young along routes where the best concealment cover is afforded, never crossing open areas when a longer route through cover is available," Frederic writes. "After the brood disappears in the dense vegetation at the top of the bluff, my next sight of them is usually when they reach the railroad." The mother duck's destination was the floodplains of Illinois, where she fed, rested, and reared her young.

At the beginning of the twentieth century, wood ducks, once the most common waterfowl east of the Mississippi, were scarce and headed toward extinction. As the U.S. population grew, ideal wood-duck habitat—a mature, dead, or dying hardwood, the closer to water the better—became rarer and rarer. Vast stretches of the bottomland hardwood forests were cut, drained, or burned, usually for conversion to cropland, but also for flood control, the furniture industry, or sites where river cities and towns like Minneapolis, St. Paul, Burlington, Hannibal, and St. Louis could be built. By 1960, 66.64 million acres of wood-duck habitat had been destroyed. Unregulated hunting also took a large toll. Hunters pursued the wood duck because it made a fine, fat table fare. But, too, Bent writes that gunners, collectors, taxidermists, and the makers of artificial trout flies sought the wood duck's beautiful feathers, and people who wanted "easily domesticated and . . . attractive pets" took the eggs home and attempted to hatch them. Lest wood ducks suffer the same fate as passenger pigeons, some states and eventually the federal government passed restrictions on the number of wood ducks that a hunter could kill. When a complete hunting ban was enforced between 1918 and 1941, wood-duck numbers rebounded.

In the 1930s the construction of nesting boxes to be placed in trees further strengthened the vitality of the species. In 1936 the U.S. Biological Survey, the forerunner of the U.S. Fish and Wildlife Service, began

installing 486 wood-duck houses made from thick slabs of wood at the Chautauqua National Wildlife Refuge near Havanna, Illinois, about ninety miles southeast of Burlington. The project was fraught with problems. The boxes were so heavy that they had to be hoisted in place with a block and tackle. The portal cut in the center of the slab was large enough for raccoons and fox squirrels to enter, and so the boxes that were occupied (a mere 12 percent), suffered high rates of predation. Because the boxes weren't sturdy, two-thirds of them fell apart.

But the project was a success in that Frank Bellrose and Arthur Hawkins, colleagues at the Illinois Natural History Survey, went to work designing a better nest box. Their new and improved product was rectangular, cut from cypress, and featured a round entrance, a removable lid for inspection, and sawdust on the floor so that the hen could cover her eggs when she left the nest for her morning and evening flights. The wood ducks approved of the design and moved in at once. Because predation by raccoons and fox squirrels continued to be a problem, Hawkins and Bellrose experimented with different types of entrances, finally settling on a four-inch-by-three-inch elliptical doorway. This permitted the wood duck to enter but forbad the entrance of rounder-bodied raccoons. Remarkably, the success rate of the new and improved box rivaled that of natural cavities. As part of Hawkins and Bellrose's research in 1939, the Illinois Natural History Survey gave fifty nest boxes to the Crystal Lake Hunt Club. Perhaps this is where Frederic first learned about artificial wood-duck nests. Perhaps he remembered that when he was a child, some members of the club killed more wood ducks in a weekend than their families could eat in a year's worth of Sunday dinners.

When Frederic asked Aldo how he could invite more wood ducks to his bluff-top home, Aldo put him in touch with Hawkins, one of Aldo's first graduate students at the University of Wisconsin. For four years Frederic helped inspect the boxes at Crystal Lake, noting that because of predation, a small percentage of the boxes were actually occupied. In 1943 he and Hawkins placed three of the boxes in the Leopold yard. "To my surprise and delight," Frederic wrote, "each of the three boxes was

used by the ducks and successful hatches resulted in each case." He kept increasing the number of boxes in his yard until he had twenty-four. All were modeled on those used by the Illinois Natural History Survey. "The material is rough, one-inch lumber," Frederic wrote. "Outside dimensions are twelve-by-twelve inches with a height of twenty-four inches. The lid is flush at back and sides but projects about two inches at the front. It is held in place by two screen-door hooks plus an inner lid which fits loosely into the inside of the box. The entrance hole, four inches in diameter, is located four inches below the lid. The box is attached to the tree by means of a hanger bolt which is first screwed into the tree." An antique wall telephone with a speaker but lacking a receiver is what the nest box reminds me of.

By 1965 there were about one hundred nest boxes in Burlington, largely due to Frederic's efforts. In his 1966 article "Experiences with Home-grown Wood Ducks," he reports a 94 percent nesting success rate and a hatch rate of 75 percent for 2,860 eggs. As of 1988, the last full year of Frederic's life, over 80 percent of the eggs laid in his nest boxes hatched and a total of six thousand ducklings left his boxes. This, too, is remarkable when you consider that in the wild, the hatch rate is about 50 percent.

Frederic also experimented with the design of his nest boxes. Once he watched from his portable blind as a hen, surrounded by several of her ducklings, called and called to those ducklings that were still in the box. But the little fellows never appeared at the exit hole. Eventually the hen gave up and led the ducklings on the ground with her to the river. Later Frederic realized that the five, healthy ducklings who died in the box hadn't been able to climb out "since the lumber from which I built [it and] several new boxes was not rough enough to give them a secure toe hold." Thereafter Frederic prevented "a repetition of this tragedy" by laying a "gangplank" cut from a strip of old carpet and hammered in place with three small tacks, from the bottom of the box to the exit hole. As soon as he had descended his ladder after making this repair, the first of eleven ducklings leapt from the box into the lily-of-the-valley below. In time, Frederic's interventions became more direct. Margaret

Leopold Barker told the *Hawk Eye* that if any ducklings were left behind in the boxes, her father would climb the ladder, put them in a sack, take them to the river, and release them. "He was still climbing ladders when he was well into his eighties," Barker said.

For almost a half-century, Frederic studied the wood ducks at his bluff-top home on the Mississippi Flyway. He watched them arrive each early spring, dropping from the sky like a wild poem, perch in his trees, make their morning and evening flights, forage on his lawn for acorns, and depart each fall for swamps and marshes in the southern United States, Mexico, or the Caribbean. As he awaited their return during the long winters, perhaps he came to see the other months as but a fitting interlude between Aprils. In his *Condor* article, Frederic described his "study area" as "within the city limits of Burlington, extending one city block along the bluffs overlooking the Mississippi River, which at this point is half a mile wide." My "backyard Wood Duck observation," he called his passion.

While my search for wood ducks hasn't flushed from hiding a single detail of my childhood visit with Frederic, it has revealed to me why he loved wood ducks above all other birds: they are stunningly beautiful, exotic travelers that glide through the treetops on swift and silent wings like meteors. And, too, my search has yielded a compilation of facts about the object of Frederic's devotion that bristles with dichotomies: scarcity and plenty; permanence and transience; uplands and lowlands; descent and ascent; complete and interrupted incubations; balance and imbalance; synchronicity and randomness; departures and returns. The friction created by these oppositions sparks and snaps. If I harness the energy generated by the links and ruptures, the harmonies and discords in this story, could I ride it into that long-ago encounter with Frederic and into the heart of my desire? Or could I shift that encounter in time so that I may enter it now? I balance on the brink of remembering and leap.

On a bright April morning, I ascend steep, cobblestoned Clay Street that dead-ends at the top of the bluff. When I enter Frederic's backyard, I find

him sitting at the table by the back porch, gazing through binoculars at the Illinois shore. Frederic sets the binoculars on the table and motions for me to sit down. The river is at my back. What do you see over there, I ask?

Road construction, he answers. *More asphalt.*

Fewer hawks and herons and wood ducks, I suppose.

His big yard is lushly overgrown and fragrant with lilacs, lilies, irises, ferns, phlox, bridal wreath, peonies, columbine, dogwood, redbud, tulips, and wisteria. Perhaps some of these towering oaks, maples, spruces, and pines were planted by the Starkers. In the 1870s, Frederic's grandparents bought this Italianate, clapboard house with the gingerbread trim and the two-story bay windows. The big building in the back, once stables but now probably a garage, is bigger than my house. What I wouldn't give for such a bit of land. What are the delights and dilemmas, I ask, of having lived on or near the same stretch of the Mississippi all your long life?

I haven't always lived here, Frederic says. We hear a whistling in the trees. He follows it with his eyes. *And I've seen enough of the world to know that this is where I belong.*

Like Aldo, Frederic went to a college preparatory school in Lawrenceville, New Jersey. From there he went to the University of Wisconsin, the same school where Aldo became the nation's first professor of game management in 1933. War interrupted Frederic's formal education. From 1917 to 1919, he was stationed in Texas and Virginia, and he fought on the French front in Argonne. After the war, Frederic returned to Burlington to run the Leopold Desk Company with his brother Carl, just as his family expected. My father heard that Frederic was a little "tight" when it came to paying his employees, and so they didn't like him very well. Nonetheless, the family business, whose motto was "Built on Honor to Endure," endured for 102 years, closing one year after Frederic's death at age ninety-four.

What haunts the dreams of one who went away but returned for good? Are changes in a place more bearable when you're there to witness their surges and increments or when you see the overwhelming and irreversible

effects just now and then? Do you remember when this river was filled with logs cut from northern forests, where wood ducks once nested, and lashed together into wide rafts? From these oak and maple logs, your family crafted the fine office furniture that built their fortune. Is tending wood ducks your penance, your atonement?

I envy Frederic for having had a reason to come home and remain in place. I went away but could never find the means to return and stay, which is why this stretch of river haunts my dreams and my writing. Like wood ducks, I keep returning and departing. And now, at almost fifty, with my children leaving home and a restlessness growing within me, I wonder if I should remain near the home I've created in Nebraska where I have meaningful work and solid attachments, the place where my children grew up and will always think of as home, or if I dare return to this first geography, the site of my earliest attachments, and position myself as close to the river as I can get.

Aldo left home in search of the big picture and found it on a mountain in New Mexico as he watched a wolf die. But Frederic pursued the single species, seeking the general through the particular, or as William Blake said, "a world in a grain of sand" and "heaven in a wildflower." Why, with all that the world has to offer, did you choose wood ducks?

Why not? He lifts the binoculars to his eyes.

Did you stay because you loved wood ducks or did you grow to love wood ducks because you stayed? I suppose that either way, it's the act of surrender that is transformative and enlivening. What would I have had to love in order to stay? Or how would staying have shaped me and what would it have led me to love?

Your timing is perfect, Frederic says, as he sets the binoculars on the table. *The eggs are about to hatch*. He rises from his chair and walks toward the ladder leaning against the tall oak. With both hands, he pushes against the ladder to check that it is secure; then he motions for me to come near. The scene is bright, detailed, and unforgettably alive.

Sixteen

This Creek

Two Creeks

I am acquainted with two creeks.

The Haines Branch Stream, which I discovered when I was in my mid-thirties, runs through a nature center and city park just west of the Lincoln city limits. During the warmer, brighter part of the year, I walk the creek banks once a week or so. During the colder, darker part of the year, I walk the banks once or twice a month. Usually I carry a pen and notepad, a magnifying glass, or binoculars. Occasionally I walk this creek with a companion. More often I walk it alone. I prefer walking the creek on weekdays, when there are fewer if any other people there.

I know something of the ecology of this creek. I remember during the rain and flood-filled summer of 1993 the abundance of ticks and

mosquitoes; the bur cucumber vine draping trees, bushes, everything with its luxuriant, tropical growth; a creek less crowded with crawling, swimming, slithering, flying, and walking creatures, since the ponds at the nature center were brimming over with water. Now I see evidence of the prolonged, severe drought of the early years of this new millennium: more small animals on the move looking for food, and thus easier pickings for the hawks and coyotes; tallgrass prairie grasses that fail to reach their full, glorious, late summer height; the abundance of grasshoppers, who thrive in dry heat; more birds at the creek since the big pond has been dry enough to walk across in good shoes for several years now and the small pond dried up just last June.

The stories I tell about the Haines feature the flora and fauna, the land, weather, and water. My role in these stories is that of rapt observer, tourist, amateur botanist, birder, or ecologist, in search of a direct encounter with wildness. But sometimes when I am walking the Haines, I see myself as but another organism: water, earth, and light animated by spirit.

I know this creek in binomial detail. I compare the notes and sketches that I make about birds or plants that are new to me with the names and drawings in field guides, or I ask one of the people who work at the nature center for a quicker, surer identification. Recently, I asked the director of the center about the tiny, delicate, brown bird with a bright red cap and pale green belly that I saw in the sumac grove near the foot bridge. She closed her eyes and rubbed her forehead. "It's one of two things," she said. She flipped through her *Birds of North America* to a picture of a ruby-crowned kinglet. A perfect match. The drawing showed the brown, red, and green that I had seen and more: a thin beak, a white eye ring, black and white wing bars. A female kinglet also may have flitted in the sumac, but in the absence of a red cap, I probably saw her as just another tree sparrow. On April 1, my first *Regulus calendula* was probably on his way to Canada, though he might linger at the creek a while.

Three hundred and twenty miles east of the Haines in southeastern Iowa near Burlington is Flint Creek, the creek of my childhood. I have known this creek for so long that I can't remember when I first encountered it.

Now I visit it once a year or so. More frequently, I return to the Flint by remembering that I waded in its waters when I was a child; that I picked wildflowers near its shores as a teenager; that I explored the bluffs and banks and caves with my children; that my paternal grandmother told stories about the landowners near the creek; that my mother told stories about taking her biology students on field trips at the creek; that my father told stories of Starr's Cave, with its rumored back entrance, with its crawl spaces leading to an unexplored pit, with its front-room walls carved full of names and dates, some from as far back as 1858; that on October 27, 2006, the day we buried my father in Aspen Grove Cemetery, one of my brothers, my sisters-in-law, nephews, niece, daughter, and I hiked along the creek and over the hills near the nature center, a fitting way to remember and celebrate our father, father-in-law, and grandfather.

When memories of the Flint overwhelm me, I visit it from afar. I riffle through my collection of old postcards with luridly colored photographs of the creek and cave. Each card is postmarked between 1911 and 1917. Or I monitor, via the Internet, the high levels of fecal coliform bacteria that in recent years have made the Flint unsafe for wading. Or I browse through a file of newspaper and magazine clippings given to me over a decade ago by someone who hoped that I would write about the creek. A photocopy of an undated article from a very old issue of the *Hawk Eye* claims that the caves above the Flint were hideouts for thieves, perhaps even for Jesse James and his gang. A handwritten copy of an article from a 1924 issue of *Iowa Magazine* claims that the caves had been a station on the Underground Railroad, a fairly common rumor about old Iowa hideaways not far from the Iowa-Missouri state line. A 1976 article from the *Hawk Eye* tells about an Iowa City spelunker who penetrated Starr's Cave the equivalent of three city blocks before becoming stuck at the end of an S-shaped tunnel. Six hours later, the explorer was rescued by a slim member of the Burlington Fire Department.

I am acquainted with this creek through broad remembered outlines and other peoples' stories. The remembered, storied creek is more real and alive to me than is the actual creek.

The Power of Water

The Haines Branch Stream is a prairie creek that flows northeast across Lancaster County, Nebraska, into Salt Creek, so named because the water is made salty by deposits from the seas that once covered southeastern Nebraska and that now spring up or seep out of the Dakota sandstone underlying much of the area. The water in the Haines is neither as salty as seawater nor is the salt as diluted as that in fresh water. Perhaps the water in the Haines is as saline as human body fluids. I have been so thirsty when walking the Haines in the part of the year when the park drinking fountains are dry that I've been tempted to drink from its waters.

I study the creatures that thrive on this creek's salty water. One late summer afternoon, I followed a pair of belted kingfishers (*Ceryle alcyon*) along the banks of the Haines for more time than I can account for. I'd lose sight of them. Then I'd hear their loud rattling calls. Then I'd glimpse through the leaves the blue-gray birds with the rusty belts across their bellies and the bushy crests on their big heads, weaving from one bank to the other, and I'd follow them. One kingfisher hovered in the air, then dove headlong into the shallow water, spiraling on its way down to seize a fish. With their long, heavy, daggerlike bills, kingfishers dig nests where the banks are tall, bare, and vertical. They carry bullheads, shiners, crayfish, and insects to their nests where they consume the moist, soft parts and litter their nests with the bones, scales, and husks: hard pieces of condensed, salty creek water.

Like other creeks on flat, lowlands, the Haines meanders. The current striking the north bank both undercuts that bank and deflects the water downstream to the south side, where it undercuts a south-bending loop. This in turns deflects water downstream to the north side where it cuts another north-bending loop, and so on, creating a series of rather regular, alternating loops or meanders. Because the Haines is fed by groundwater, even during droughts, it doesn't run dry, though it may be a narrower, shallower creek. And after a rain that is too fast and heavy for the dry earth to absorb, the water in the Haines is fast, high, turbid, and bubbly.

In the early spring, the water in the wooded part of the creek is yellow in the middle, brown near the near shore, and green near the far shore.

I can draw from memory a fairly accurate map of about one mile or so of the Haines and its meanderings and the trees along its banks. For stretches the length of a city block or two, the sky above the Haines is unbroken by trees. In other spots, the splotches of shade cast by the trees do not touch or overlap. At the deepest bend in the creek are five, enormous, well-spaced cottonwoods, so old that slabs of bark and chunks of their branches have dropped to the ground. I often pause before them and study their beautiful incompleteness. Yet in other spots, riparian woodlands almost as dense as those lining the Flint filter or blot out the sunlight, reducing the amount of photosynthesis on that stretch of water. Some trees cling to the bank by exposed, twisted roots, the spaces between their snakish roots suggesting the entrance to another realm.

The Salt is one of the few creek systems in the country that flows southwest to northeast, uphill, it seems. The Haines begins twelve miles west of Pioneers Park in Highland Township on private property. It enters the Salt near the city limits southwest of Lincoln in a space kept open for a snarl of streets and highways that crisscross or merge into each other. The Salt enters Lincoln as a relatively clean, wild, salty creek. It leaves Lincoln as a dead, channelized creek, bearing the treated sewage of a quarter of a million people. The fifty-two-mile Salt flows into the Platte River, which flows into the Missouri, which flows into the Mississippi.

Flint Creek winds through wooded bluffs and ravines. The Grand Canyon of Des Moines County, one writer called the area. Within Starr's Cave Nature Center, the Flint flows east, then veers south. On its north bank is a wall of limestone that extends for perhaps a half-mile. In one spot, the chert and limestone upper layers were less resistant to erosion than the softer limestone beneath it. Devil's Kitchen, the concave area beneath that hard shelf, is a good place to wait out a cloudburst. Into the softer limestone thirty feet above the creek bed is Starr's Cave, my father's childhood haunt. When I remember the Flint, I see myself as a child, wading

in a sandy loop east of what is now the nature center or as an adult hiking through oaks on the uplands and sycamores on the lowlands.

What little I know of the Flint's natural history comes from the WPA guidebook to Iowa and my field guide to fossils. The limestone into which water eroded the creek's channel was deposited during the Mississippian Period about 325 million years ago. Colonies of crinoids, or sea lilies, cuplike, many-armed and many-branched creatures akin to starfish, were rooted like plants to the floor of the warm, shallow sea by flexible, waving stems. Fossilized crinoids were as abundant in the limestone wall near the creek as they were in the limestone walls lining the cobblestone alley behind the Marietta Street house that I lived in until I was eleven. During the nineteenth century, Charles Wachsmuth, the world's leading authority on *Crinoidea camerata*, also lived on Marietta Street, though one block south of my house. After his death in 1896, his crinoid collection was removed to the Smithsonian Institution. But the crinoid stems, little stacked tires or doughnuts, that I extracted from the crumbling alley walls, were so abundant that I, the child who saved almost everything, left them where I found them.

Slowly, constantly, the water in the Flint widens its channel through the limestone, exposing more details of the past, wearing the bluff into cobbles, pebbles, sand, and dust, bearing away the calcium carbonate, the basic ingredient of limestone, shells, and bones. Beside me as I write is a chunk of this limestone studded with hard, white bits that I can't identify and two fan-shaped cavities, molds created by the fluted shells of brachiopods, small invertebrates that dwelt on the floor of the seas that once covered my two homes in the center of North America.

As a child, I didn't think of creeks and rivers as having headwaters and mouths, origins and vanishing points, beginnings and ends. I only knew of middle sections. I still don't know where in Des Moines County the Flint comes into being or precisely over what kind of country it flows before reaching Starr's Cave. But yesterday, while looking at a map of Burlington in an old telephone directory, I learned that the Flint ends—or rather, it becomes something other than the Flint—where it flows into

O'Connell Slough and farther downstream enters the Mississippi's main channel. Just north of St. Louis, where the Missouri and Mississippi rivers converge, the waters of my two creeks meet and blend.

The Necessity of Water

"A great deal of the behavior and physiology of terrestrial organisms is concerned with how to get water, how to retain water, how to economize in the use of water," writes cultural biologist Marston Bates. And for good reason. The human body is mostly water: 70 to 80 percent for babies, 50 to 60 percent for women, 60 to 70 percent for men. Most water is held within body cells; but too, water is the principal ingredient in blood plasma, lymph, cerebrospinal, and tissue fluids, and water is the medium in which metabolic reactions take place. Some organs, brain and lungs, for instance, are 80 percent water. Life is, Bates says, an aqueous solution.

A creek doesn't end at the creek banks: it extends into the water-absorbing trees, grasses, sedges, and rushes growing on its banks. On a prairie, more birds, mammals, amphibians, reptiles, and big woody plants live near the creek than away from it. Those organisms that do leave the creek's banks bear away in their feathers, fur, mouths, or bellies tons of creek water and creek-made protein.

Yesterday I walked the Haines Branch, both the part that flows in the nature center and the part that flows past the playground, sports field, and picnic areas in the park. Like most of my walks at the Haines, this one was full and good. A slimy-shelled snapping turtle (*Chelydra serpentina serpentina*) poked its hooked beak out of the water; then it submerged and scavenged on the bottom, churning up clouds of mud before it disappeared beneath a fallen tree decaying in the water. As I descended a flight of wooden stairs from the bank to the water's edge, I frightened a mammal, too fast and brown for me to identify, who raced from the water's edge into the rustle of fallen, brown oak leaves. On a moist, wide shelf a couple of feet or so above the water was a stand of last year's cattails (*Typha latifolia*). Like old armchairs, the ragged flower spikes were losing their stuffing. A muskrat (*Ondatra zibethicus*) with plant stems

in its mouth and its flat tail stretched flat behind it on the water, swam to the opposite bank and disappeared. As always, I found a fresh clutter of the white-tailed deer's (*Odocoileus virginianus*) cloven-hoofed tracks on the trail atop the bank and tree stumps sharpened like pencils by the beavers (*Castor canadensis*) that lived in the creek there several years ago. Clumps of silver maple (*Acer saccharinum*) flowers, yellow-green petals within red-purple bud scales, rode downstream, past a tire, a clot of rags, a chunk of a brick wall, and a deflated, Mylar balloon. One of the nature center staff said she had seen mergansers (*Mergus merganser*) earlier in the week. I had hoped to see one of these sleek-beaked ducks diving for fish, but what I got were a pair of common mallards (*Anas platyrhynchos*), resting on the mud bar, with their feet tucked beneath them like cats. A dark, waving snake in the shallow waters broke up into three, dark, waving fish. Gray, lichenlike salt deposits crusted the far bank.

The allure of running water, what it carries, what it carries away, draws me to this creek that is not mine.

I cannot speak with certainty about the shape of the Flint or the color of its water, and I remember little of its creaturely life. But I can list the succession of humans who resided on the land near Starr's Cave for the past century and a half. If I were to draw a map of this creek, it would more closely resemble the subjective maps of early American surveyors, who enlivened their abstractions of a place with representations of people, events, buildings, and markers than the more objective, precise depiction of the creek in the Burlington and vicinity telephone book or on a Des Moines County Conservation Board trail guide.

The Sac and Mesquaki Indians probably didn't live near the creek, though they did quarry flint there. Shoquoquon, or Flint Hills, they called the area. After the Black Hawk War of 1832, southeastern Iowa was cleared of Indian titles and opened for acquisition. William H. Starr, a German immigrant, was the first Euro-American to own the land. I suppose that for Starr, running water and plentiful building materials were the chief selling factors, since the land near the Flint River, as it was then called,

was too hilly for large fields. By 1860 Starr had built a house near the creek, and he cultivated two small fields, one of which he planted with corn; in the lowlands east of the creek, he terraced a vineyard. Starr used his limestone barn, which still stands, as a blacksmith shop and perhaps as a winery. After Starr, or perhaps the Starrs, though I've never read mention of any other family members, the Herrill-Reids lived near Starr's Cave. The undated obituary of Martha Herrill Reid that I found in my file about the Flint says that she lived near the creek for seventy years. For a half-century following her husband John's death, she and her children farmed the land. Perhaps the Herrill-Reids lived in the house that Starr built or perhaps they lived in one of the three houses north of the creek, as shown on an 1877 survey, and so were Starr's neighbors. Around 1910 Edward Frank Dunn, the owner of Dunn's Hotel across from the train depot in downtown Burlington, bought 360 acres of farmland and woodlands near the creek. Dunn was a dairy farmer but later switched to cattle, and he raised sheep. According to his granddaughter, Patricia Dunn Briscoe, whose handwritten notes I found in my file about the Flint, Edward and Dolly Dunn added several rooms to the house that Starr built, as well as a marble fireplace from the old Burlington fire station when it was torn down.

In 1920 Edward Dunn and some of his neighbors sought to sell their land to the state for the purposes of a park. That same year, Dunn escorted members of a committee "of public spirited citizens" to the site so they could see the wonders of the place for themselves. One of the members of this local advisory committee was Carl Leopold, Aldo Leopold's older brother. Another was J. J. Fleming, the ancestor of a little boy that I babysat for when I was in high school. Another was E. P. Eastman, the founder of Chittenden & Eastman Furniture Company, whose warehouses filled two blocks in downtown Burlington and the man after whom a wing of the old hospital, since torn down, was named. There my father's mother, my mother's father, and two of my great-aunts died. There, my brothers, my son, and I were born. In 1921, as a way to promote the park plan, Burlington held its annual Fourth of July picnic at Flint Creek and Starr's Cave,

featuring activities planned by the Boy Scouts and the American Legion. I like to imagine my great-grandparents, grandparents, and great-aunts enjoying the festivities.

In 1924 local business owners paid ten thousand dollars to the Iowa State Board of Conservation toward the purchase of the land. The local committee suggested that instead of buying the 329 acres that Dunn and other landowners were offering, the board should limit the park to 230 acres, mostly Dunn's property. By then so many of the trees near the creek had been cut for lumber that a park plan would have had to include tree plantings. For reasons I can't discern, plans for the park were scrapped and the ten thousand dollars never accounted for. Edward Dunn died in 1939, but his property remained in his family. In the 1930s and 1940s when my father and his buddies rode their bikes north on Highway 61, turned east on Sunnyside Avenue, north on Irish Ridge Road, and descended such a steep hill to the creek that they probably stood on their brakes the whole way down, they were trespassing on Dunn's property. Dunn didn't mind if the boys fished and swam in the creek, but he didn't want them on his land.

It wasn't until 1974, my senior year of high school, that the dream of preserving the creek and the caves became a reality. The state of Iowa purchased 142 acres from Herbert and Alice Dunn, the son and daughter-in-law of Edward and Dolly Dunn, and gave management of the preserve to the Des Moines County Conservation Board. I was vaguely aware that an old red barn across from Starr's Cave had been a nightclub. But I didn't know anything about the creek becoming a preserve. When my boyfriend and I waded in the creek or parked his blue, '66 Chevy Impala in tall, privacy-creating brush beneath the Irish Ridge Road bridge, it was the same old creek to me.

In 2007 the Des Moines County Conservation Board began creation of the Flint Creek Recreation Trail to link the Mississippi River and Big Hollow Recreation Area, eight miles north of Burlington. Money donated to my father's memorial fund will purchase picnic tables, park benches, and a new trail map and kiosk for the part of the trail that passes through the nature center.

I have never had a solitary hike at Starr's Cave Nature Center. Always, I've hiked there with relatives. Always, there were people on the trails, people at the picnic area, people in the nature center building, people waiting to use the portable toilet, people in or near the creek, people climbing the long ladder to Starr's cave. Nonetheless, I'm lonesome when I'm at the Flint, since so many of those who people my memories of the place now exist only in memory.

The Memory of Water

A three-page article in the June 30, 1988, issue of the British journal *Nature* offered one man's proof that water remembers. In 1984 Dr. Jacques Benveniste, an immunologist and then research director at the French National Institute for Medical Research, began experimenting with basophils, human white blood cells involved in allergic or immunological reactions. Basophils possess tiny granules containing substances such as histamine, which is partly responsible for the allergic response. The granules can be stained with a dye and then degranulated by the antibody immunoglobulin E (IgE). Benveniste discovered that basophilic degranulation continued to evoke a biological response even when IgE had been so highly diluted that not a single molecule of it remained in the water. Benveniste concluded that "transmission of the biological information could be related to the molecular organization of water." In other words, information transfer occurred even though the molecules possessing it were absent because the biological information had been "stamped" into the water structure through vigorous agitation.

John Maddox, the editor of *Nature*, published Benveniste's research but followed it with an "editorial reservation," in which he claimed that there was "no physical basis" for Benveniste's conclusions. Though scientists at several universities replicated Benveniste's results, the team of investigators sent by *Nature* (Maddox, the magician Randi, and antifraud investigator Walter Stewart, not one of whom is an immunologist) weren't able to. The journal refused to publish Benveniste's own replication of his results. I suspect that the chief reason that the memory of water theory

was so controversial is because it is the basic premise underlying the effectiveness of homeopathic remedies. According to the homeopathic "law of the infinitesimal dose," the more one dilutes a drug, the more potent it becomes because it gains structure through the "succussing process," the repeated process of diluting and vigorously shaking it. Despite the growing number of people in recent years who have sought and have been healed by homeopathic treatments (I am one of them), just as many, if not more, still consider it quackery. In the end, Dr. Benveniste lost government support for his research, his laboratory was shut down, and his reputation destroyed.

I am not qualified to judge Benveniste's research methods. But I can say that his conclusion is, if not credible, at least desirable. Water cycles: it has been everywhere countless times. The puddle at the end of my driveway may contain a water molecule that once eroded a molecule of limestone from the cliff edging the Flint. And some of the water molecules in the Haines may circle the earth a couple of times before falling onto or seeping up into the Flint. If water bears memories of where it has been, then by drinking it, I can take into myself the water's memories of having evaporated from soil surfaces; of being transpired as water vapor through the tiny pores in leaves; of being absorbed by the dry sky or held in clouds; of falling on yards and fields, feedlots and streets, roofs and faces; dropping onto the ground; running into the creek or filtering into the ground and rising again through roots or as seeps; being borne away in feathers, fur, blood, organs, and cells; being broken down into hydrogen and oxygen for photosynthesis by spirogyra, buckbrush, big bluestem, poison hemlock, and hackberry; being rippled by wind as the water is carried from this creek to the next.

I can drink of the Haines and remember tropical seas, glaciers, salt springs, bison, bison hunters, floods, bur cucumber, droughts, grasshoppers, prairie fires, cottonwoods, kingfishers, and me, with my unquenchable curiosity, walking, walking its banks. I can drink of the Flint Creek and remember colonies of crinoids; the Sac and Mesquaki chipping chert from the limestone; a cornfield, a vineyard, a pasture, the trees being cut

and carted off; Aldo Leopold cutting school and riding the streetcar to the creek where he too waded in the water and hunted for arrowheads; the trees returning; my father and his friends sloshing through the "crick" and climbing into the cave or hunting for geodes; my brother and me wriggling our toes in the creek-bottom sand, our legs, thin, brown, and covered with fine blond hairs; our young, trim father, whose own childhood wasn't so far away, smoking a cigarette or skipping flat stones or holding our baby brother in his arms; my children and me breathless and thirsty after climbing the hills near the creek.

Drink and remember.

This Creek

At one of my creeks, I am so outwardly focused that I forget myself or see myself as just one of many organisms hosted by the creek. At that creek, nothing exists but the present moment. At one of my creeks, I am so focused inward that everything in the landscape is attached to a story which in turn is attached to another story and another. I can't see that creek clearly for my part in the stories or as the gatherer of the stories. The creek that I want to drink from is one that I know with depth and breadth, wholly, intimately, inside and out, past and present, through me and in spite of me. Where shall I go to find such a creek?

I've only been acquainted with the Haines for a decade and a half. Though I can learn the human history of that creek and listen to the stories of those who know it well, it is not my history. The most highly charged part of my past is borne in the waters of the Flint. Yet, I've spent most of my life away from it. Unless I change where and how I live, I cannot engage in the waiting, watching, and searching required to know the nature of the Flint.

But if I blend the waters of the Haines and the Flint, then it is a single creek that carves its way through the center of North America and my heart. I know this creek because I've sifted through archives and libraries for clues as to its history; I've talked to people who know it well, and I recognize their history as mine. I know this single creek because I've sat

by its banks and made myself like blotter paper, receptive, ready to see and hold whatever it offers. I remember crinoids waving in its waters; I remember crinoids being buried by layers of sediments. I remember creek-watered cottonwoods leafing out and trembling in the wind, their tiny, tufted seeds carried by the creek to bare mud where they germinate. At summer's end, their yellow leaves drop into the water and sink to the bottom or drift downstream. I remember breaking the land near the creek for houses and fields and nature centers; a citywide, Fourth of July picnic; long summer vacations spent swimming and fishing in this creek; long, solitary winter hikes along its banks. I remember slipping out of my shoes and socks and wading the creek. As I drink the waters of this single creek from my cupped hands, I relish the flavors of the distant eras, the local habitats, and the many diverse lives over which and through which it flows.

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