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WINGSPAN: LIVING WITH BIRDS

By

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Thesis

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in Environmental Studies, Environmental Writing

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Wingspan: Living with Birds is a collection of creative nonfiction essays that intertwine the author's personal experiences and reflections with her knowledge of the natural world and ornithology. The six essays explore themes of family, self-reflection, understanding a sense of place, rock climbing, and dealing with grief. These themes are combined with natural histories of different bird species and the author's experiences working with birds, especially as a bird bander.

*For Edward H. “Jed” Burt, Jr.
April 22, 1948- April 27, 2016*

*Professor, mentor, ornithologist, friend.
Thank you for letting me be part of your flock.*



*A flock of horned larks.
Ohio Wesleyan University Zombie Ball, October 2007.
Back row, left to right: Jack Stenger, the author, Sean Williams. Front row: Jed Burt.*

“**W**e must *see clearly,*
record fully and accurately,
and *try to understand.*”

Margaret Morse Nice,
Research Is A Passion With Me.

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Unless otherwise noted, all photographs are property of the author.

Bird List



American Crow	Oriole <i>sp.</i>
American Robin	Osprey
Barred Owl	Parakeet
Black-capped Chickadee	Parrot <i>sp.</i>
Black-headed grosbeak	Penguin <i>sp.</i>
Blue Jay	Peregrine Falcon
Blue-footed Booby	Pigeon
Blue-winged Teal	Pine Siskin
Cedar Waxwing	Red-eyed Vireo
Chicken <i>sp.</i>	Red-naped Sapsucker
Common Raven	Red-tailed Hawk
Coopers Hawk	Roseate Spoonbill
Dark-eyed Junco	Ruby-throated Hummingbird
Eastern Towhee	Sandhill Crane
European Starling	Thrush <i>sp.</i>
Flycatcher <i>sp.</i>	Toucan <i>sp.</i>
Great Blue Heron	Trumpeter Swan
Grouse <i>sp.</i>	Turkey Vulture
Gull <i>sp.</i>	Violet-green Swallow
House Sparrow	Waved Albatross
House Wren	Western Tanager
Hummingbird <i>sp.</i>	White-breasted Nuthatch
Mockingbird <i>sp.</i>	Wilson's Snipe
Mountain Chickadee	Yellow Warbler
Northern Saw-whet Owl	

Through the Window



Carolina Chickadee
Parus carolinensis

From *The Bird Book* by Chester A. Reed.
Accessed from the Biodiversity Heritage Library

In 1924 someone named Trox gave my great-grandmother a bird field guide. The inscription is sparse: “To Betty from Trox. Xmas 1924.” I haven’t been able to figure out who Trox is, but he—I decided the name is masculine—isn’t a relative, that much I know.

Betty, or Connie, depending on who was talking to her, was born in Rushden, England, in 1898, eighty-nine years before myself. Her full given name was Constance Beatrice Hewitt, named after one of the girls her mother used to govern. My father, when he speaks of his grandmother, calls her Connie.

An internet search tells me that Rushden is in Northamptonshire, and that from Missoula, Montana, it would cost me \$4,905 and 40 hours, 27 minutes to get there. Rushden lies in a valley 70 miles north of London, and the 172 foot tall spire of St.



Mary’s church, nearly equidistant from the Rusden Library and a Domino’s Pizza, can be seen from nearly any direction in town. I’ve seen a faded picture of the church in a family album, and it looks the same as in the pictures I find online. The single spire is tall and pointed like a wizard’s cap, with three windows along its height, the top-most nearly at the tip.

Connie’s bird guide is a small book, a rectangle just shorter than the length of my hand. Its cover is black, made to look like stippled leather. On the front is an embossed drawing of a great blue heron standing on one leg in some cattails next to the book’s title, *Bird Guide: Water Birds, Game Birds and Birds of Prey East of the Rockies*. There is a small crease in the front cover, and the book’s spine is worn. The pages are yellowed and a few are loose, but only one has fallen out, a result of my carelessness.

This field guide was written by Chester A. Reed, the Curator in Ornithology for the Worcester Natural History Society, according to the bio printed in the book. Reed authored many



guides, and dominated the market before the late great naturalist Roger Tory Peterson came into his own with the hugely popular Peterson Field Guide series and identification system. The Peterson system pointed out easily seen visual characteristics, or field marks, with arrows.

These arrows were also used to point out key differences between similar species. Peterson guides have multiple birds per plate, or page, and allow for much easier comparison between species. Peterson's first field guide may very well have been a Reed, given to him at school. Perhaps RTP (as my ornithology friends and I would affectionately call him) wanted to improve upon Reed's guide. In any case, RTP set the tone for field guides to follow.

Of his own *Guide*, Reed wrote, "... May it be the medium for saving many of today's seekers for 'bird truths' from the many trials and tribulations willingly encountered, and hard and thorny roads gladly traveled by the author in this quest for knowledge of bird ways." After reading Reed's *Preface*, I've decided I'd much rather be a "seeker for bird truths" than a simple "birder." It makes the activity sound deliciously thrilling and noble. Perhaps these chickadees at my feeder and I won't change the world, but on some level this does describe birdwatching, or any study of the environment—we seek the truth of the natural world in order to better understand our own. Bird watching is not just a pastime: I'm a truth seeker, bettering humanity with each minute I spend watching the birds out my window.

However, as a modern-day truth-seeker, my bird books of choice are decidedly less romantic. David Allen Sibley's *Field Guides* have been the modern standard for a number of years, and are my preference as well. Each species account consists of multiple detailed paintings, showing the bird from the side as well as in the air, and sometimes while performing a characteristic behavior. The barred owl page in *The Sibley Field Guide to Birds of Eastern North America*, for example, gives a concise description: "Common to uncommon in woods, particularly hardwood swamps. Usually solitary. Nocturnal... note dark eyes. Overall brown above with pale spots, and pale below with bold streaks."

Reed, by contrast, includes this in his brief barred owl entry: "... This species is the common 'hoot owl,' that is the terror of small children and many older ones... They spend the day in slumber, unless routed out of the dense trees where they rest, by crows or human beings. They are one of the least harmful of the family and should be protected." Other than describing the color of their eyes ("Eyes dark brown"), Reed gives no other physical description of the owl other than a height, apparently leaving the aspiring truth-seeker to rely solely on his painting—which, while accurate, can't compete with Sibley's five images of two different color morphs, a fledgling, and two owls in flight with views of wings raised and lowered. Sibley's voice is impassive, succinctly imparting information, while Reed is more conversational, sometimes adding personal anecdotes and opinions.

The best field guides, in my opinion, use paintings, not photographs. A painting can capture the variation of individuals; instead of showing the unique characteristics of one individual it highlights distinct features and field marks of the species as a whole, and can exaggerate certain colors or patterns that might be indistinguishable in a photograph. One

individual can't tell you much about an entire species. But there is value in careful examinations of individuals, and in observing the peculiarities of life.

The desk where I sit to do to this research is an old, many-times-badly-repainted kitchen table with wooden legs and a scratched and stained white metal top. This was, at one point during her adult life, Connie's kitchen table. She had my great-grandfather paint its legs to match the kitchen cupboards and appliances, in keeping with the current trend. I found the remnants of three different paint colors on the legs: industrial pea-soup green and retro teal covered by a dingy creamy off-white, though it's hard to tell if the almost-white is the intended color or if the paint is just so grimy that it no longer wipes clean. Before my mother bought a new Kitchenaid we used Great-Grandma's old mixer, covered in chipped dingy off-white paint. Growing up, it never occurred to me that painting kitchen appliances was odd. The cookies tasted the same, so I didn't think it mattered.

For my entire childhood the table was in the basement of my parents' house, and long ago it was decided that when I left home the table would be mine. It pains my mother, who is eager to both support me and declutter the basement, that I moved far enough away from Ohio to make most cast-off furniture transport unfeasible. Before I packed the table into my car for the cross-country drive from Ohio to Montana, my dad helped me carry it up from the basement and out to the driveway for a thorough cleaning. With a rag, cleaning spray, and a paint chipper, I worked my way through the layers of grime and paint and history.

The kitchen table that is now my desk sits in my bedroom in Montana, underneath a window. Its surface is cluttered with papers stuffed in an old napkin holder shaped like an owl, an aloe plant, and bits of paper with half-completed to-do lists. I often have to shuffle my lists

into piles to make room for my laptop. The table is not very big, only 25 by 40 inches, and I can't imagine my own family of five attempting to sit down here for a meal. Connie and her husband Eric only had one child, my grandad Gordon. I'm not sure how long they used the table, but I know this was Grandad's while he was growing up.

This winter, I stuck an old suction-cup-soap-holder-turned bird feeder on the window above my desk and filled it with sunflower seeds. The window is grimy, streaked with dirt and covered with water splotches. I don't want the birds to run into the glass, so I keep it dirty. The window is also high enough from the ground outside that washing it would be a production, and I'm much too busy for any of that nonsense. The feeder mostly attracts black-capped chickadees, who are industrious in removing the contents seed by seed. I haven't been able to get a very accurate count on the number of individual chickadees that visit, but my best guess is five or six. Usually they arrive in a pair or trio, one bird going straight to the feeder while the others wait in the lilac bush a few feet away.

The chickadees' hunger is insatiable, and I top off the seeds every few days. Winter is giving way to spring here in Montana, but the nights are still cold. Chickadees survive the most frigid nights by intentionally becoming hypothermic—dropping their body temperature



significantly in order to slow their metabolic rate and lower their energy requirements. But even with this advantage if a chickadee doesn't eat enough during the day it might not survive the bitter cold winter night.

The chickadees *cheep* at each other from the bush, and every so often I hear a distant *chick-a-dee-dee-dee* from the nature preserve across the street. A warning call, the number of *dees* indicate the type of threat: fewer for large predators, like a great-horned owl; more for smaller pygmy or saw-whet owls. I wonder if they've found the roosting great-horned owl I've been seeing lately. Now that the days are getting longer, I sometimes wake at dawn to the chickadee's clear whistled song: *cheese-bur, cheese-bur-ger*.



Dad tells me that Great-Grandma was a birder, and a good one. I like to think I inherited the condition genetically, but even if her English extreme-bird-enthusiast genetic contribution to my DNA wasn't the driver, she did help nudge me towards birds. Her old binoculars were the first real pair I used. They had a heavy metal casing, were missing two of the four black plastic lens caps, and after each use were always carefully put back in their carrying case made of pleather-covered hard-walled cardboard and closed with a snap. I'd often get them out of the coat closet, more interested in the feel of them in my hands than actually using them to look at anything outside. Their heft and the cold metal made them feel expensive. I tried to use them in my undergraduate ornithology class but the optics couldn't compete with more modern models, and I soon received a nicer pair from my parents for Christmas. But Great-Grandma's binoculars still have their place in the cupboard under the kitchen island with recipe books and the bird

guides, close at hand for peering out the back windows at the nesting hawks or deer that regularly come through the yard.

My dad says that Great-Grandma was a diminutive woman, 5'1" and maybe 90 pounds. Instead of letting her grandsons open doors for her, she'd march up to heavy glass-plated double-doors on a store or bank, grasp the handles in both hands, use all her strength to heave the doors open, and go charging in. "I always got the feeling that she saw the door as an obstacle to what she wanted, and she attacked it with the determination that it would not be a barrier," my dad told me.

Connie, her parents, and younger brother immigrated to the United States in 1908, leaving the steadily more-crowded Rushden. In 1891 the population was 7,443; ten years later it had risen to 12,452, and only increased from there. I've been told that the family was looking for economic prosperity elsewhere. Rushden was historically an industry town, known for its lace



and shoemaking. After the Hewitts left for America, the shoe industry in particular continued to grow and by the mid-1900s there were over 100 shoe factories. Though the records I can find online seem to suggest that Rushden was booming, Connie and her family were poor, her carpenter father struggling to support his family. I don't know any more detail than that.

When her family left England, Connie was ten. They left behind her older sister Dorothy, who lived with an aunt and finished her schooling. Dorothy was to join her family in their new country later but never did, and eventually traveled around the world as a missionary. The family

settled in Chicago where Connie's father had a hard time finding work, so they were relatively poor. Those are the bare-bone facts as I learned them, which read more like my modern Sibley bird guide than Reed's more fanciful descriptions. I find it hard to know the entirety of a species through a brief description of its plumage and habits in a book. Those words are sometimes enough, but they're not the complete truth.



Compared to Dad's, my own memories of Great-Grandma are subdued. They are brief, mostly piecemeal, and I question their authenticity. I think they're more a product of stories and pictures than my actual memories. But I do remember visiting her once in the nursing home where she spent her last years. My little sister and I were elementary-school aged, and we wore matching dresses, ones that had skirts which satisfyingly rose up around our legs when we spun in circles. Megan and I were both taking ballet classes at the time, and so we danced and twirled for Great-Grandma as she sat in her chair. I remember her smile, her glasses, her short wavy white hair. I know my grandparents were there too, and I strain desperately to picture my granddad, her son, standing behind her chair with his hand on her shoulder, smiling down at us. He died last year. But no matter how hard I try, his facial features are blurred.

A chickadee lands on the feeder outside my window. It perches on the rim, facing inward, and we stare at each other. I sit at my desk and watch as it cocks its head, bends down, and precisely selects one sunflower seed, which is immediately carried to the nearby bush. Holding the seed firmly against the branch, the chickadee hammers away until the kernel inside is

revealed, deftly readjusting the angle and grasp on the seed as it goes. I count 38 pecks, but some were so quick I think I missed a few. When done, the chickadee briskly wipes its beak on the branch, lifts its head, calls a quick *chick-a-dee-dee* and then flies away.

I look back down at Connie's *Bird Guide* with its dark cover, lying next to my hand on the desk. My own field guides take up half a shelf on my bookcase. One is just for shorebirds, two for Eastern North America, one for Western. One for Belize, one for Costa Rica, and a guide for the Galapagos. My two Sibley guides, the ones I use most in the field, have clearly gotten their mileage. Their covers are tattered, bent, and stained, held together with scotch tape. There are dead mosquitoes flattened between the pages, and a turned page reveals a decidedly non-warbler feather pressed between the entries for yellow warbler and chestnut-sided warbler. Each book has survived multiple field seasons in the bottom of my backpack, schlepped countless miles through the woods, soaked by rainstorms and spilt coffee, dried by desert suns.

Last summer, I bought the Sibley field guide app for my smart phone. A few taps of my fingers give me access to not only detailed species accounts and range maps, but also songs and calls. Great-Grandma's *Bird Guide* is only slightly bigger and thicker than my iPhone, with nowhere near as much information. Reed's illustrations, while accurate, are crude compared to Sibley's exquisite detail.

I wonder how using these different field guides impacts how we look at birds. Was it harder to seek bird truths a century ago, with less-powerful binoculars and less-detailed field guides? When is more information too much? With less advanced tools, one can compensate with skill. We adapt to our environmental conditions.

I don't need to haul my paperback field guides around with me anymore, at least not every day. But their weight in the bottom of my pack is comforting, the knowledge of their

authority reassuring. I wonder which of Connie's field guides was her most treasured. I imagine she owned more than one, because no serious birder owns only one field guide. What birds did her books help her see? Did she miss the birds in her English backyard once she came to America? Or did she come to appreciate birds later in life, as I did, in her teens and twenties? What birds did she watch out the window all those years ago?

I sit at Connie's old kitchen table, the one she'd long-ago discarded, and I watch the chickadees come to my window. Squirrels leap from tree to tree in the nature preserve across the street. Her field guide sits on the corner of my desk, next to a potted aloe. The container is clear, and I can see the aloe's roots growing, pressed against the glass. First there was one thin root, which gradually thickened and branched. Other roots appeared. They grew slowly, so slowly that I didn't notice until suddenly one day I did.

Know This Place



The month after I moved to Montana, I went to an environmental conference in Waterton, Alberta. There, I heard a Blackfeet elder say this: “*We are bound by breath to honor and take care of this place.*”

The elder was speaking about conservation, and how it is important to care for all parts of an ecosystem—the watershed, the soil, the plants, the animals. Specifically, he was speaking of the Crown of the Continent region, which starts near Missoula, Montana, and stretches north to the tip of Banff National Park in Canada. This trans-boundary ecosystem is critical habitat for many unique forms of life, and not all of the region is completely protected by national parks or preserves. Not only must the biologists and government officials care, he said, so must all the people who live there. To care, the elder said, you need to be in a place, to settle in it and let it settle in you. Once this happens, you are bound by breath to honor and care for that place.

The contrast between this conviction and my own wandering life is, to me, profound. What does it mean to be bound to a place? The combination of a restless soul and work as a seasonal field biologist leads me from field site to field site, generally in a different state, every three months or so. Along these journeys, I collect natural places of solace the way others collect shot glasses or magnets. Instinctively, in each new habitat I seek out a spot where I can go to examine the internal through an inspection of the external.

I have chosen to live my life like this, though I’ve never tried to figure out why. Perhaps studying migratory birds has made me aware of my own *zugunruhe*, a migratory restlessness. Ornithologists use the word to describe birds’ anxiousness to take to the skies and leave this place for the next; the deep-wired behavior to travel long distances in order to survive.

I began my wanderings in Ohio, where I was born, and where I began to learn the complexities of life. From Ohio work led me to Oregon, then North Carolina, Pennsylvania, Florida, South Carolina. College trips to Ecuador, Costa Rica, Belize. A short two months on the other side of the world inhaling Asia, then jobs in Wyoming and Colorado, with a quick jaunt to New Brunswick between, and now Montana. The sequence matters, because each place led to the next, but in my memory time is more fluid, and remembrances swirl together in their own order. Interspersed with these structured journeys I traveled with less of an external purpose: short weekend trips and longer cross-country drives, learning the places of this country. The places that make me breathe, and those that make me hold my breath.



When I was young, I spent every day after school in the woods with the fairies and spirits of the trees. Then I think I knew the land. I knew where my dog and I would go, together in our separate worlds of scent and sight, our senses giving us very different perceptions of the same things. I knew where the hickory tree stood, the one with scars that looked like a door that would open to a secret staircase that led to a fantastic tree house in the upper branches. I knew where the S tree grew, deep in the woods, its beautifully curved trunk in sinuous contrast to the lumber-straight oaks and maples. I knew where the leaves floated in the stream, bright colors against the wet-black rocks. I knew the smell of the loam.

I knew the way the soil froze on the trail in the winter, and the way it sounded under boots, crunching, breaking. The way in summer the bluegill would lay their eggs in the gravel of

the shallow end of the pond and circle around, guarding. The way great blue herons perched like dinosaurs in the massive dead oak tree, watching from above. The way white-tailed deer ran from us into the trees, snorting and stopping to look back, knowing we weren't going to give chase.

I didn't know all the biology and the science, not yet, but I knew the land.

The woods feel different now that I've seen the rest of the world. I know where the boundaries are, where the woods turn to fields then to housing developments and highway. My world is not as vast as I once thought. I keep journeying, from place to place, away from what, towards what? I'm not a warbler; my migration follows no seasonal pattern. I won't die if I don't leave. But by leaving, does that mean I can't know a place?



I listen to the wind rustling the grasses. Flies and bees drone past with percussive buzzes. An eastern towhee calls, clear as a penny-whistle. Crows *caw* from the sloping mountains behind me. They ride a gentle wind, watching over places I'll never see.

I'm sitting on a rocky outcrop at the top of Black Balsam Knob, a mountain just off the Blue Ridge Parkway in North Carolina. The rock under my hands is dark, shot through in some places with quartz, in others sprinkled with bits of mica that shine in the almost-setting sun. Thousands of feet have passed this way, but tonight the perch and view are mine alone. My rock is an island surrounded by waves of bristling golden grasses. Crickets begin their songs, a string

section hidden among the dried stems. The towhee calls again, now beyond the far ridge. It found a partner, and the two duet quietly, eventually fading into silence.

I look up into the pure blue overhead. Clouds too wispy and removed to cause me concern frame the translucent moon suspended above the rounded profiles of the mountains. Their distance makes the world look soft. I imagine tracing their shapes with my hands, but it takes more than touch to know a mountain.

I look at the moon, then my shadow on the grass. My black shape is still, no matter how the grasses dance in the wind. I sit and listen to the moon and the mountains, and, sometimes, I think I understand what they say.



I always knew you would leave.

My mom told me this one afternoon as we were standing in the kitchen folding laundry. The dog stood by the sliding glass door to go outside for a squirrel, and the cats twined about underfoot. My brother drummed on the counter, and my sister yelled from upstairs about nothing.

My mom said this with that mix of sadness and pride and love, and I saw her eyes fill with tears. She said it, and then hugged me, and explained she knew I needed to get out into the world, that the possibilities and opportunities for me weren't here in Ohio, but out there. One

minute I was folding Dad's underwear, the next I stood frozen as my mother hugged me. I didn't know if I should cry or be relieved I didn't have to explain, because she already knew.



I slept in the car last night, bundled in my sleeping bag in the front seat. Off the main road, this dirt track might have eventually led to someone's house. The stars were brilliant, and in the middle of the night I woke to a sliver of moon shining brightly through the windshield.

Now I'm sitting in a parking lot overlooking Monument Valley. It's just before a January dawn. Night is slowly fading, bringing the Mittens rock formations into dark profile. The sky is a grayish-burnt orange dissolving into blue that gets darker and darker to merge into the starry night. Charcoal smears of clouds smudge the outline of the rock into the new start of day. Slower than my breaths, the stars vanish back into the unseen. This is the morning transition, when one should be sitting with a warm thermos of coffee, bundled in flannel and wool and thick denim, savoring the first meditative sips of day in the quiet-still cold before the sun rises completely. This time of day is full of the best promises, the ones about to be fulfilled.

My thoughts begin to spread out in all directions, tracing around and over the rock formations, settling among scraggly juniper bushes, burrowing in the soft reddish dirt. Things are harder to see equally in daylight. The light gives you the chance to focus, to choose. When the dark chooses for you, it's easier.



I have often thought about how, if something happened to my parents, I would move home, back to Ohio, to take care of my brother Eric. He's high functioning, but he's still autistic. I describe him defensively, in terms of what he can do, but there's a lot he can't. That my sister and I will have to do for him, someday.

Maybe that's why I don't want to stop traveling, because I'm scared I'm running out of time. I'm scared to go home and be faced with the realization that my parents are aging, that they, just as I, don't live frozen in time, that we all mature and change, that there's nothing we can do about it. Thank God we're not suspended in photo albums, if only because my mother's perm from the '80's is not something I'd wish on anyone for perpetuity.

I laugh because if I didn't I'd cry. I breathe and keep going.



I'm sitting on a raised deck on a tiny island off the coast of Belize. The surf and the wind in the palms behind me blend into a wild, reckless sound that makes the dark seem alive. I have a moment of profound loneliness, a deep ache echoed in the night sky. The deck shakes in the strong gusts, and the railing over the water shifts in the wind, causing vibrations that feel like footsteps, the footsteps of someone who isn't coming. I can see out in the dark to the reef and a

distant light, perhaps another caye. Behind me are lights of the other cabanas, faint reminders of the rest of the human population. Looking up, I can see millions of stars in the night sky, fainter counterparts to these electric specks. I hold my hand up, fingers wide, to give infinity perspective.

Here I sit, a minute speck, and yet galaxies span my palm. I hold nothing in my hand, and yet every molecule of air, every tiny pinprick of light, the essence of life, carries a weight at times heavy enough I can feel the pressure on my skin. I'm almost wary to draw my hand away as if without me to hold it, the heft of the skies, heavy with stars and longings, would fall.



Over the years I've learned some of the nuances of loneliness.

There's the loneliness of the mountains, and the loneliness of the trail. The loneliness of being in a tent in the woods, and of being in a car, driving the dark highway. There's the loneliness of being in the predawn forest where mountain lions roam and no one will hear you scream. The loneliness of being with a group, the outsider among friends. There's the loneliness of an unfamiliar city, of being surrounded by strangers whose convoluted lives will never intersect with yours. The loneliness of the silent phone, of the empty mailbox. The loneliness of always being the first to initiate the conversation. There's the loneliness of a cold shoulder, and of a cold bed. The loneliness of wide-open sky and gently rolling prairie, surrounded by the song

of meadowlarks so thick you feel you could be suspended in midair. Then there's the loneliness of knowing that this isn't your place, but you're here.

I've learned that loneliness usually has nothing to do with being alone.



I left.

I left my parents. I left my brother, and my sister. I left my grandparents. I left my dog, and my cat. I left all of my friends, from high school, from college, from each seasonal job along the way. I left, and I leave.

I keep them in photographs on my walls and in postcards and letters that I send like offerings. I spend a lot of time in post offices, waiting patiently to mail my words. I send essay-length rambling emails. I text. I call, and we talk for hours at a time. But that doesn't change that I left. That I keep leaving.

Do I now know them anymore than I know home? Can you know a person though hastily jotted postcards, through a phone call every few months, though a picture? How does my leaving define me to those I love?



I'm sitting in the dining room of a lodge at Annapurna Base Camp in the Himalayas of Nepal, trying to keep warm. It's other-worldly up here, especially now with the clouds rolling in, absorbing the mountains and the voids. There are avalanches on Annapurna, a few close miles away, but the fog hides everything. All I can hear is the strangely dampened sound of finality. I think of the Nothing, from *The Neverending Story* by Michael Ende. This is what I imagine that would look like: eye-achingly matte gray, impenetrable, stretching into forever.

Today was the final push to the Base Camp where mountaineering expeditions to summit the peak truly begin. Trekking along well-pounded dirt and stone-marked paths over a series of days, I made my way up to this final perch. The journey felt like a pilgrimage, and this was the final hurdle to enlightenment. My legs and knees ached from giant stone steps built into the trail. My head and stomach ached from altitude and exhaustion. The trail paralleled a small twisting stream, and with every pause I watched the tan and brown grasses along the water shift in the wind. Everything extraneous was stripped away; there was just walking, walking up to the mountains in the sky. My vision felt especially pure, as if a dingy filter had been lifted from my eyes. I was in a living meditation. It felt important to breath this all into my bones.

After I arrived but before cold and hunger drove me into the lodge, I stumbled to a ridge overlooking a steep escarpment, the ground so far below it seemed unreal. I stared too long, wondering what my body would feel as it fell. Without wings my body is more dirt than air, and I keep my feet firmly on the ground. Above me rose Annapurna, Sanskrit Goddess of the Harvest, her summit deceptively close. Beside me were monuments of stacked stones and prayer flags, cairns dedicated to those who climbed up but not back down. This is what's left: a prayer

flag battered on a remote mountain in a remote country, where only the few shall see. If I fell in this place, who would build a cairn for me?

Unbidden, my grandparents came to mind. They would never view these mountains; they would never be in this place. Is there ever a longing for places they'll never be? What can I see in the face of a mountain that I can't see in their faces? In the thin air, it was hard to catch my breath.



I'm driving through Yellowstone National Park with my family. It's July, and we're here for ten days to hike and look for charismatic megafauna, a term my brother reads from his Western mammal guide. Mom is not convinced this is legitimate scientific vernacular, understandable given my brother's abiding interest in television shows and books with names like "Finding Bigfoot" and "Mysterious America: The Ultimate Guide to the Nation's Weirdest Wonders, Strangest Spots, and Creepiest Creatures." In this instance though, I assure her he's using a legit zoological term. She remains skeptical, and the phrase turns into yet another family joke, mentioned as often as possible in conversation.

Now that my younger sister and I have graduated from college, family vacations and holidays are the only times the five of us are together. I'm the only one who doesn't live in Ohio. I'm the one who has traveled the farthest. But right now we all travel together crammed in this rental SUV, closer than we've been in months. Dad is driving, as usual; Mom navigates from the front passenger seat. Eric, the youngest, and I sit in the middle seats, and Megan, the middle

child, is folded into the back. We're silent, engrossed in different things: the road, the national park brochure, an iPad game, listening to music. Mom and Dad trained us early to amuse ourselves on long car rides, and I spend most of the time gazing out the window, afraid that I'll miss something.

Even now, though we kids are all in our 20's, Megan and Eric don't like to sit next to each other in the car for long. Megan told me once she was jealous of the extra attention Eric received when we were children. His autism defines our family and our relationships with each other.

Outside the car window, the lodgepole pines grow dense as dog hair, packed tight inches from each other. They make a solid, living wall of green and needles, a giant's forest of toothpicks. A mute raven soars overhead. I want to know what these trees smell like, and if their bark is as sticky as the longleaf pines I climbed in South Carolina for work or as scratchy as the white pines I climbed in Ohio as a child. I wonder what it would be like to slip between the trunks and lose myself. I wouldn't have to go very far to be lost from sight.

But how far would I have to go to find myself again?



It's hard to explain, but Ohio has always been a place that I am from, even before I left. I talk about it the same way I talk about my brother, defensively. Ohio defines me and my relationships with other places.

I accumulate scents in my memory: the scent of a North Carolina pine forest at dawn, the damp salt and sand on an October beach in eastern Canada, the gritty Utah smell of red desert rock and crushed sage, the fresh smell of green vegetation high in the Wyoming mountains. But it is Ohio I smell when I burrow my head into my pillow at night.

We say that blood runs thicker than water, that we know who we are by the people we love and our reasons for loving them. That love means never having to say you're sorry.

We say that home is where the heart is, that all who wander are not lost. That no matter where you go that's where you are.

We say that in *hongi*, the traditional Maori greeting of foreheads and noses pressed together, the breath of life is exchanged and intermingled. *The breath in me honors the breath in thee.* This breath is all it takes to be one of the people of the land.

We say all sorts of things, but *I am bound by breath to honor and take care of this.*



It is winter, and I am home in Ohio again. I go for a walk. Striding onto the path that goes through the woods to our small pond, I leave the backyard. Sprays of dirt mark where squirrels have been digging for buried caches of hickory nuts. Small oaks with pale shriveled leaves shiver in the wind. A dead squirrel lies frozen on the path. Scattered bits of fur, the tail ripped off, the

body twisted into a ball. A cold wind blows, rustling the oak leaves. Crows, two or three, call from gray trees across the pond. An urgent woodpecker taps behind me, Morse code I don't understand.

I follow the path through the trees. The snow is shallower in the woods than in the yard, here only ankle deep and marred by the bounding prints of leaping squirrels traversing from tree to tree. I stare out at the trees and I hear birds: white-breasted nuthatches, crows, black-capped chickadees, dark-eyed juncos. My bones are getting cold. Each inhalation makes the rims of my nostrils ache. My cheeks feel rosy and raw.

The pond is finally frozen solid, hoar-crystals on top of an opaque under-layer of ice, looking white and deceptively stable. Once, when we were younger and at least a couple feet shorter than we are now, Eric and I fell through the ice by the dock. The ice was solid, but not strong enough to hold our combined weight when we stood next to each other. I pulled him out. I might have been in elementary school, and he's four years my junior. Dad had a bonfire of brush cuttings burning nearby, and I dragged a crying Eric to stand by it until Dad saw us. I remember breathing hard as we ran back to the house, my short legs stretching to keep up with Dad's longer ones as he carried my brother. My lungs burned.

I don't remember the sensation of falling, the ice giving way beneath me, but I remember being cold. The water was dark, and though shallow I couldn't see my feet hit the bottom.

From the pond, I take the path back through the woods. I've never counted the number of steps, but I've been this way thousands of times. My body knows how long it feels to walk from the pond to the yard to the house. I measure the distance in body-time, in heartbeats and breaths.

There are blue jays in the big pine in front of the barn. The feeders on the deck are empty but swaying.

The Flight of the Albatross



“An albatross is bone, feathers, muscle, and the wind.”

Carl Safina
On the Wings of the Albatross

Isla Espanola is an island in the Galapagos, pummeled by oceanic winds and baked by the harsh equatorial sun. Cliffs by the ocean look down on jumbled rocks and sunning marine iguanas. The iguanas, when they are hungry, swim out into the ocean where they dive for algae. After a dive, the strange reptilian heads appear from the depths and slowly make their way towards shore, their undulating bodies visible beneath the water. Scaly, colored with splotchy grays and reds, these dinosaur mermaids are present on each of the islands in the Galapagos. The rocks upon which they rest on the ocean's edge are lava-sharp, but distant, untouchable. Millions of years ago this place was an active volcano, but shifting tectonic plates and erosion flattened and leveled, resulting in what is now one of the lowest-elevation islands in the archipelago.

A waved albatross emerges from the grassy interior of the island. The bird walks with a laborious side-to-side gait, its dark eyes comically serious as its head sways back-and-forth with every step. At the cliff edge it pauses. There, it spreads long, narrow wings. Feather and hollow bone held together with sinews and muscle, delicate but strong. Flap and one, two-quick-steps and it's off the edge, falling upward into the strong breeze. From the center of vision to the periphery the albatross glides, a distinct form becoming a miniscule dark dot. Moving, moving, blink and it's gone, dissolved into the sky.

Waved albatrosses are plain colored birds. Their heads are a creamy white, with a slightly hooked mustard-yellow bill and dark black-olive eyes. Their bills are long and stout, with two characteristic tubes called naricorns on top, from which they discharge the excess salt they consume by eating and drinking of the ocean. From the side, their head and neck make a graceful long curve, but from the front they have tufted eyebrows, the look of the mildly crazed professor. Their bodies are a dark chocolate brown, and where the neck attaches to the rest of the body the

colors have been smudged, crudely blended together into the waved pattern for which they are named. This pattern spills forward down their breasts and stomachs. Their wings are brown, darker than the body, and their webbed feet are a pale, dusty blue, the color of the sky in an 18th century oil painting.

When upright, waved albatrosses stand three feet tall, with a wingspan of seven to eight feet. They generally weigh between six and nine pounds, fed by a diet of squid, fish, crustaceans, and food scavenged from the water and bullied away from other birds. Waved albatrosses are the only truly tropical albatross species in the world, and can live for up to forty-five years.



The last day of our undergraduate class trip to the Galapagos was spent on Isla Espanola, watching waved albatrosses head out to sea to feed. It was early June and the albatrosses had only recently laid their eggs, which they incubated protectively among the rocks and matted-down dried grass. I sat on the rocks with Amanda, one of my closest friends. I don't remember thinking much as we sat there, but it meant something, something that still binds us together after years and miles and babies, distances unfathomable at times.

Years later, she brought me a small enameled albatross pin from her honeymoon in Hawaii. I put it on my field bag, which held my notebooks and binoculars and water bottle, the bag I carried to work every day for years. Now, it's on my backpack and I carry it with me to my graduate school classes. A tiny albatross, soaring across more than the distance of miles.

Amanda and I don't live in the same time zone anymore, and haven't for a long time. I send postcards and visit every time I'm back in Ohio. The internet keeps us informed, and I

watch her daughters smile and play and read the books I send them in photographs and videos. Amanda and I spent four years together, sharing dorm rooms and zoology classes, Orlando Bloom posters and late-night ice cream runs, tears, frustrations, dreams. In some ways, she was closer than a sister. There are certain things, certain truths of yourself, which you can only share with close friends. And then, once we graduated, I left. Her migrations were short, staying close to Central Ohio, where she grew up and where we went to college. I'm more of a long-distant migrant and am now, for the moment, in Montana.

One of the more common birds in Ohio is the house wren. House wrens are small songbirds, perhaps the length of an index finger and weighing ten to twelve grams, or roughly the same as two quarters. Wrens are warm brown colored birds, with bright, intelligent eyes. Their personalities are larger than their tiny bodies, and they energetically forage for insects and spiders among the tree branches. Males, in order to impress the females, will make multiple nests at the beginning of the breeding season, piling twigs into any suitable-looking crevice, be it birdhouse, old woodpecker cavity, or forgotten shoe. Their song is a rush of cheerful, energetic notes, bubbling up from hedgerows and porch rails, a song that makes me smile and think of summer.

Any student of zoology can tell you that different animals have adapted to live in different environments. Toucans, with their diet of fruit, live in the tropics. Penguins, fish eaters and swimmers, live in the cold oceans of the Southern Hemisphere. An albatross and a house wren, an oceanic flier and a bird of the open woodlands, cannot live in the same habitat.



To follow the albatross—the urge is there. To spread arms and legs, to let go. To move away into the sky, to step off the cliff, wings outstretched. To fly. Is it the flier moving and the world standing still? Or the world moving past in an eye-watering blur and the bird held in place, measurement suspended? And which way is the fall? Up, or down? Towards the stars or the rocks—similar, similar, just a difference of distance and iguanas. Either direction can be hard and cold.

Albatrosses are known for their ability to stay aloft for tremendous periods of time. They do this by employing what is called dynamic soaring, somewhat in the manner of Buzz Lightyear: it's falling, with style. The wind moves at different speeds in layers above the surface of the ocean, and by gliding between these layers an albatross can use the currents to soar thousands of miles. This requires roughly the same amount of energy as sedately paddling on the ocean or incubating their egg. Albatrosses have long and narrow wings, especially when compared to their body size. This is referred to as having a high aspect ratio. Birds with high aspect ratios must move at faster speeds to stay airborne, which for albatrosses means they need strong oceanic winds.

Starting near the water, an albatross will glide along the windward sides of wave crests, floating from the slower-moving air near the surface up higher to the faster-moving layers and then down again, losing and gaining speed and lift as it draws invisible hills in the air.

Fall up, I thought. That's all we have to do, just fall up. But it's not quite falling, is it? You're using the wind to go where you want. Not leaving your body to the mercy of natural forces around you, but exploiting those forces to do something fantastic, something so natural it

becomes an assumed part of yourself. Go with the flow, but only if the flow is going where you intend.

In order to fly, birds have adapted. Their bones are hollow, reinforced in key places to be light, flexible, and strong. Lightweight beaks replaced solid teeth, and they lay eggs, incubating outside of the body instead of internally. When the breeding season is over, sexual organs diminish in size, unnecessary until next year. Other organs transform too. Increasing in size to maximize weight gain before migration, birds' stomachs, livers, and intestines then decrease just before departure. The size of their hearts and muscles also change, growing and shrinking with the onset of the seasons.

What adaptations have I made? What parts of me are hollowed out? Which organs swell and shrink with the lengthening daylight, with the onset of summer and fall? What gives me lift, keeps me airborne? Have I learned to fully exploit the ocean winds? To ride the air currents up and over waves, so close that my wingtips trace a delicate line in the water?

I don't identify with smaller birds, those with small aspect ratios and greater maneuverability. Those who can hover, whose short, broad wings let them zip between the branches and trees of the forest, who dip and dive like the insects they chase and catch on the wing. I'm not a warbler, not a flycatcher, not a wren. I'm better at being an albatross, tall and long-limbed, better at locking my wings into place and gliding. The trick is to keep your wings outstretched. To keep them open, and know when to step off the cliff. I can't say I always get the timing right, but I try.

Writes Frank B. Gill in *Ornithology*, 3rd Edition, "... an albatross with outstretched wings will rise gently into a strong wind." An albatross with folded wings will go nowhere.



You never made me fly, I said.

I couldn't explain what this meant, not back then, and so to him it meant nothing. The truth is sometimes like that, I've found. Many tears have been shed over unarticulated truths. If I had naricorns like an albatross, the tears would drip down my bill, the salt of my body becoming again the salt of the ocean. Perhaps now I have the words, but I find that it doesn't matter anymore, years after he's gone. After I've gone. How much value is there in finding the correct words for the truths of the past?

He showed me that I have wings and helped me learn to flap them, but his flight involved short glides and bursts of maneuverability, effortlessly weaving around the trees of the forest. He was a black-headed grosbeak, with striking black-and-cinnamon-and-white plumage, a beautiful melodious song, and a bite strong enough to leave puncture wounds in my tender skin. It took me a few years and many awkward and painful landings to realize that his was not the type of flight I had evolved for. I need strong headwinds, and wide-open spaces in which to ride those winds. And, there is this: a 34-inch long albatross simply won't fit in the six-inch diameter nest of a grosbeak.



Seventeen of the twenty-two albatross species in the world are at risk, including the waved albatross, which is listed by the International Union for Conservation of Nature as

Critically Endangered. The main reason for this listing is because they breed in only one place, Isla Espanola, a single decaying volcanic island 563 miles off the coast of Ecuador. One extreme weather event and the population could be gone. That they don't reproduce quickly, laying just one egg a year, and don't reach sexual maturity until around six years of age, doesn't help. Exact population estimates vary, but all are fewer than 35,000.

But then there are the more immediate threats. Many albatrosses die from long-line fishing: attracted to the bait, they become hooked and drown. Others die from disease. Still others die from human disturbance from tourism, from oil spills, from the effects of illegal fishing, from eating plastic scavenged from the water. With one parent gone, the chicks die more slowly, from starvation, or from eating trash their remaining parent brings back as food.

They die mainly because of us.

Once you've eaten that plastic, there's no getting rid of it. You now contain something foreign inside of you, a hard, indigestible lump. Attracted to the color, or the novelty, you ate it, not realizing the consequences. Not realizing that one quick decision would change everything.

Now you're part of something much greater—the fossil fuels, the oil, the chemicals, they all build up inside until you're bloated. You almost can't help it, stuffing yourself with this junk. Then you feed it to your children, who grow up on this unsatisfying filler. Some of the spaces inside us are meant to be hollow, to be filled and then emptied, a continual cycle. But they are meant to be filled with digestible bits of the outside world, not with this hardness, this un nourishing trash.

We condemn ourselves, our children. The present, the future. We're all slowly filling up with the hard shapes of what we thought we threw away.



During the non-breeding season, waved albatrosses spend their time in the waters off the coasts of Ecuador and Peru, rarely venturing north of the Equator. Beginning in late March, the albatrosses return to Espanola to breed. The males arrive first, then the females, and they reunite after months at sea. Socially monogamous, waved albatrosses mate for life. However, there are a great number of what biologists call extra-pair fertilizations: some albatrosses sleep around, sometimes intentionally, sometimes not, and a male may be raising a chick that isn't biologically his.

Starting in mid-April, each pair will lay one egg on a suitable-looking patch of ground, which the male and female will take turns incubating for two months. After the eggs hatch, the parents will fly hundreds of miles to hunt for food to feed their chick. Like all birds, albatrosses have two stomachs. The upper stomach, the proventriculus, breaks down the food into oil and proteins. The nutrient and calorie-dense oil is stored for energy and to feed to the chick. Back at the nest, the adult will regurgitate up to four-and-a-half pounds of this pre-digested liquid into the chick's hungry mouth, leaving them stuffed brown downy balls, hopefully sated until the next feeding, which could be days later.

In addition to providing nutrients, the oil is also a means of defense for the chicks. When threatened, they will in turn regurgitate it onto the intruder. Partially-digested and appallingly odorous, the oil sticks to fur and feathers causing loss of insulation and water-proofing, which in an aquatic environment can prove fatal as evidenced by the number of wildlife affected by oil spills.

By late December the chicks have reached the size of adults, and by early January they have fledged, or left the nest. These young albatrosses won't breed until they are about six years old. Though they will land on the ocean to eat, albatrosses only return to land to mate, spending the rest of the time on the wing, out at sea. Alone, the waved albatross travels extensively, running the air currents, surviving and waiting.



When I wrote you those emails, this is what was written between the lines.

Tell me about the sea.

Tell me the sounds it makes, the waves smooth or rough. Tell me the sound of your body moving, and of your breath against the salt breeze. Tell me the heartbeat of the ocean, the pulse of your life within the pulse of the water. Tell me there is life here.

Tell me the wind, its taste in your mouth, its touch on your body. Tell me how fast it wears down your feathers, how soon you become tattered and unable to fly. Tell me what's left after the wind scours all away.

Tell me where these currents of air take you. Tell me you'll come back to meet me, here on solid ground, and we'll know each other after time and miles apart. Tell me that separate and together, the swells and the depths, we will be as constant as the ocean which sustains us. Tell me enough to make me stay.

Tell me about the sea.

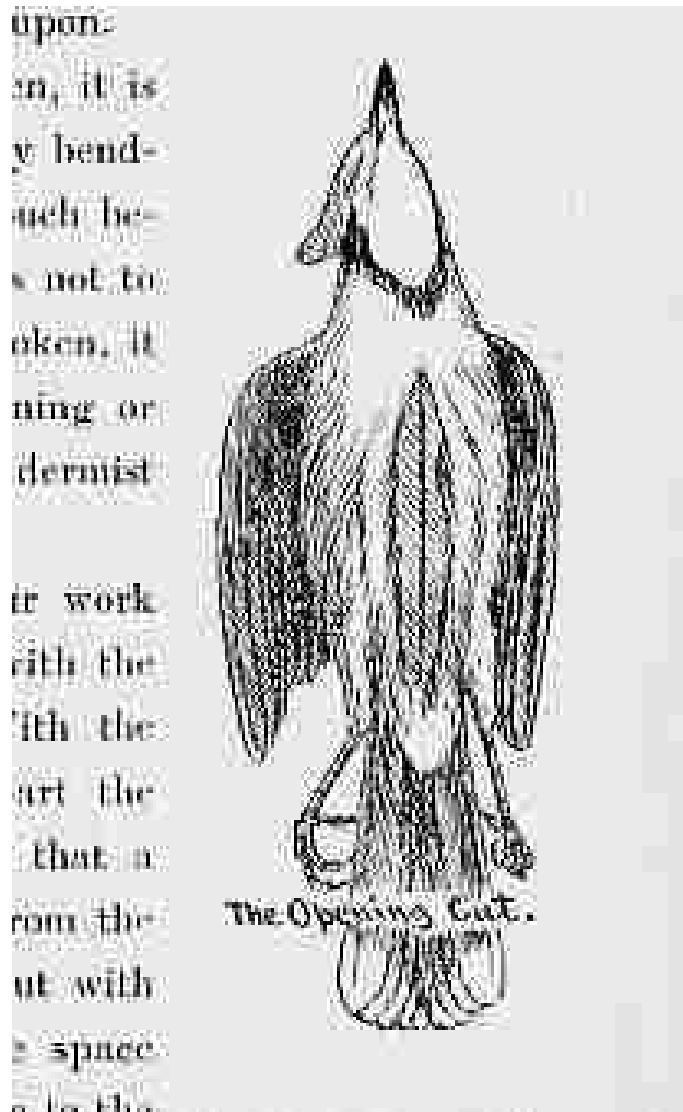


When I pose for pictures, I sometimes stand with my arms flung open, showing off my wingspan. There's something exhilarating about the pose. Perhaps it has to do with opening up the chest, expanding the alveoli and bronchial tubes and lungs and allowing in more oxygen. The pose is a primitive biological statement, exposing vulnerable organs, telling the world that I am not afraid to be attacked and eaten. With my arms open, my silhouette changes. I make myself larger, taking up space in the horizontal as well as the vertical. Not only do I spread my arms but I spread my fingers as well, increasing my surface area as much as possible. I want all *this* to soak in, to permeate every pore.

This pose is not about dominating or conquering the external world. Rather, it's about exulting in the intense sensation of being alive and feeling that, if you can be here, and you got here by the tenacity of bone and muscle, anything is possible. It's about staying aloft as long as you can, and knowing how to exert the least amount of energy to move the greatest distance. It's about knowing how to ride the currents.

How long does one moment last until the next? A picture cannot capture the vitality of the actuality: the feel of the salt air on your face, the ruffling of feathers, the breath of an albatross as it steps off a cliff. The warmth of a friend beside you as you gaze out at the ocean. The thoughts of someone, waiting. There is only an idea left, a memory of a feeling. A sense of wonder at the perfectly regulated moment when albatrosses fly.

I Put My Faith in Birds



From *Guide to Taxidermy* by Chas. K. Reed and Chester A. Reed
Accessed from the *Biodiversity Heritage Library*

This is how you catch a bird.

First, get up early. The exact time depends on your morning rituals. It's helpful to know, to the minute, how much time you take to get ready, and how good you are at getting dressed in the dark. Odds are your bunkmates won't be banders, and so will not appreciate your turning on the lights at 3:45 a.m. Following proper banding protocol, you must be in the field with your gear set up by a half-hour after sunrise. Coffee is recommended.

Once you have more or less cleaned, clothed, and fed yourself, you will head out to the banding station. This means a drive in the dark, fumbling through early morning radio stations and fighting the urge to fall back asleep. After arriving and unloading the equipment, you will set up your nets. This is how you will catch the birds, with mist nets. Not, as people might think, with butterfly nets, or by sitting in the willows and using Spiderman-reflexes to grab unsuspecting birds as they fly past.

A mist net is made of a very fine mesh that stretches twelve meters long between slender metal poles. Standard lengths of electrical conduit pipe, such as those bought at any hardware store, work nicely. The mist net is not one flat surface like a volleyball net but rather is constructed of four long pouches, like four giant hairnets, layered horizontally. When a breath of air opens the net slightly, each pouch is in the shape of a J, one on top of another. Because the net is so fine, made of fiber thin as button thread, the birds cannot see it against the foliage. They fly into the flat part of the net, which stops them, and then they fall into the pouch below, where they are trapped. This type of netting is called passive mist netting, because once you set up the nets, no further work is required of you to capture birds. From now on, your only duty is to check the nets and to remove the birds.

After all ten nets are set up, you must check them for birds every half hour, no exceptions. If the weather is cold or drizzly, check more often. When they become tangled in the net, feathers mussed, birds are at the mercy of the weather. Down, be it in a jacket or on a warbler, does not hold warmth when wet and compressed. On frosty mornings, stick your fingers in your armpits, or against your neck, to warm them before handling a bird. You cannot wear gloves, because your fingers need to be nimble. A yellow warbler isn't much longer than an index finger, and has legs thin as grass stems. Imagine trying to untangle two toothpicks attached to a wriggling, snapping bundle of feathers from a tangle of fishing line. Warblers, being insect eaters, have fine slender bills which barely pinch when they bite. It's almost cute, how ineffectual they are at inflicting any pain.

Chickadees, meanwhile, can be feisty little bastards. Their bills are small but stout, used to break open seeds. They also use these bills to hammer at cuticles or any small cut on your finger you might not have realized was there. Or, they'll grab a mouthful of net and not let go. It takes practice and patience to know just how to coax the mouth of a chickadee open, like knowing how to feed a baby. You try to convince them it's what they want, not what you want for them, and you take advantage of the instant they open their mouths to protest.

Chickadees will also clench their feet around fistfuls of net, like the grip of a stubborn toddler. If you massage their knobby little feet, sometimes they will straighten their toes and the net can be smoothed off. If you can, try to save the feet for last. Sometimes if you hold the bird's body out from the net, the tension will cause the bird to let go. Many times though, the chickadee is holding the net in a way that is pulled tight around its body, and the feet will have to be coaxed first. Chickadee toes are perhaps the diameter of pencil lead, with long, curved claws. These are perching toes, and will grasp around your fingers when the bird is in the bander's grip: the

chickadee's black-and-white head secured between index and middle finger and its back against your palm to prevent struggling and potentially straining a wing. Chickadee claws are sharp, and sometimes leave tiny pinpricks where they almost break the skin.

After you extract the bird from the net, place it in one of the small cotton drawstring bags you hopefully remembered to stuff in your pockets. Each bird you remove from a net will be placed in one of these bird bags for safe transport to the banding station, where you will process the bird. Each individual gets its own bag; we don't need any scuffles. If it's a cold morning, you can tuck the bagged bird in your shirt to keep it warm. Usually they lie still, but sometimes they flutter, and you can feel their wings beating against your chest.



I like birds.

That's how I identify myself, how I introduce myself to others. I'm *that* person—the one who is easily distracted by the sparrows in the parking lot and by the hawk on the telephone wire. I stop mid-conversation and stare outside, caught by the motion of wings.

I collect bird stories from the people I meet. Everyone has one. I've heard about hummingbirds buzzing red sweaters, blue jays hiding acorns in gutters, and ravens leaving the decapitated head of an escaped parakeet in a bird bath. I talk bird banding at the bar, and bird identification on the ski lift. I own, and wear, a T-shirt with a map of migration pathways on it, and have curated a substantial collection of bird earrings.

Growing up, I never thought I would devote most of my adult life to chasing birds, both for fun and employment. I've monitored nestling woodpeckers in South Carolina, driven from

Colorado to New Mexico to spend two days watching thousands of migrating snow geese and sandhill cranes, and spent a hot, mosquito-and-horsefly-infested summer surveying birds across the state of Montana. I was paid for the survey work, but on my days off I'd drive to wildlife refuges and spend hours looking at pelicans, ducks, grebes.

While I enjoy simply observing birds, my favorite jobs involve bird banding. A small, individually numbered aluminum band, like a Social Security numbered bracelet, is crimped around the bird's leg with a pair of pliers. Unless a human removes it, or the bird's foot is somehow amputated, that band is on for life. For some birds, especially smaller ones like warblers, that might only be one or two years. Larger birds tend to live slightly longer: a robin might live to six, a blue jay perhaps seven.

Researchers band birds in order to monitor populations. By banding, releasing, and recapturing birds, be it with mist nets or by hunting, biologists can determine survival rates and learn a great deal about a population's size and dynamics, especially in relation to changes in the environment. Banding data also reveals a great deal about bird migration: where the birds go for the wintering and breeding seasons, the routes they take, the places they stop to rest along the way. There are more sophisticated technologies to track movements now, but in the late 1500s, when metal bands were first used as identification tags on royal hunting falcons, GPS and satellites weren't even a blip on the radar.

The first banding record in North America comes from the venerable John James Audubon, who in 1803 tied silver strings around the legs of phoebes in his backyard to identify the young when they returned the next year. It took almost 100 years after Audubon before a Danish biologist developed a formalized banding system which became the model for modern banding.

But why do I band birds? Because I'm contributing to the greater pool of scientific knowledge? That may be a partial answer, but on some level I'm just yet another selfish, pleasure-seeking human, doing something because it makes me happy. I find meaning in banding and studying birds, though what that meaning is I don't know if I can explain. I don't even know why I like birds. I tend to neatly side-step the question, dancing close but never exactly answering. Articulating my passions is a challenge, because for me these actions tend to defy words. I band birds because it's what I do.

I don't remember the first time I held a wild bird. It's puzzling. I know where I was: central Ohio, in my ornithology professor's backyard. It was the fall of my first semester of college. Our professor had been banding for years with his students, part of a larger study of bacteria and fungi on bird feathers. Before each bird was banded, it was rubbed with a set of petri dishes to collect microbes, a different dish for head, wing, tail, and abdomen.

I remember the techniques required for sampling: the twist of a dish on the head of a house wren, using my thumb and forefinger to spread the wing like a fan to brush on the petri dish. But what I don't remember is the first bird I handled. Was it a sparrow, or a chickadee? Did it struggle and bite, and did I loosen my fingers too much and allow it to escape? I know now what a small songbird feels like against my palm, the softness of its tiny body and the way its delicate feet grip my pinky. I know now the feel of bird poop sliding down my palm and arm, like a blob of runny jam. But that first time, I don't remember.

Before that class, I hadn't paid birds much mind. My mother had bird feeders on the deck and I knew the common visitors, but they held no special appeal. If anything, I was more interested in what I found to be exotic: capybara, hedgehogs, giant river otters, zebra. All mammals, and not ones I could find in my Ohio backyard. For me these animals were two-

dimensional, existing in books and nature documentaries so far removed from my life that they could almost have been mythical. But then I held a wild bird.

I remember a song sparrow, brown-striped body in my cold hands, dark eyes watching me intently as I poked and prodded. My inept fingers fumbled, and the sparrow bit me, a sharp, unrelenting pinch to the web between my index and middle fingers. I gasped. This bird was warm and alive, an entire life trapped between my fingers, biting me for all it was worth. Beauty leads to appreciation, but pain makes things real.

Our class banded four times that semester, and I became further intrigued by birds. I found myself studying degrading parrot feathers, which eventually led to an independent study on the geographic distribution of parrot coloration. But the parrots I studied were specimens in museums, inanimate and stuffed with cotton. I handled their preserved bodies, quantified colors and surface area, compiled them into lists and tables. Some days I could barely stand it. I wanted to be outside, and to know birds not just by the properties of their feathers but by the feel of their movements in my hands. I wanted to see their whole lives, not just the remnants neatly catalogued and arranged in a drawer. There is only so much we can learn from the dead; we must look to the living for the rest.



“Let’s go find an eagle,” my dad said.

It was one of those spirit-and-heat-sapping gray Ohio Saturdays in early January, and my family and I sat in the kitchen, lingering over coffee and the newspaper. My dad read an article about bald eagles in nearby Cuyahoga Valley National Park, and on a whim we decided to go see

for ourselves. My younger brother was also conscripted for the venture, primarily to prevent him from spending yet another day inside watching television.

We grabbed our wool hats and binoculars, jumped in the truck, and drove to one of our usual starting points along the river trail. Out the window, the bleakness of the sky, snow-covered ground, and woods blended together. In the winter, it's easy to forget that the world is not always varying shades of gray and cold. There was one other car in the parking lot when we arrived, and we followed the trail south, towards a sewage treatment plant.

Within five minutes we saw our first bald eagle, perched on a bare oak branch over the Cuyahoga River. The water was brown and sluggish-looking, the white foam along the edges frozen. The water no longer catches on fire, but I've never been tempted to wade in. I assume the presence of eagles indicates the water is healthy enough to support the wildlife here, so it must not be heavily polluted. Birds are biological indicators, winged barometers of an ecosystem's ability to function. If there are birds, things are okay.

We watched for a few minutes, passing the two pairs of binoculars between the three of us, before the eagle flew downriver. We decided to follow along the trail. Dad and my brother trudged on ahead as I paused near a pile of sunflower seeds someone had thrown onto the path. Black-capped chickadees pressed delicate footprints in the snow, and a nearly Techni-colored northern cardinal, bright red against the gray woods, watched warily. I followed in Dad's tracks, stepping in each footprint like I did when I was little. His feet are slightly pigeon-toed, and I rotated my boots a few degrees to fit exactly within his prints.



Of all the birds I've handled, robins are my least favorite.

For many, they are signs of spring, a promise that things will be growing again, that winter is finally over. Robins can be readily seen on lawns, their neatly pressed suits of brown and red feathers in sharp contrast to the bright green grass. I don't know where the idea of robins as harbingers of spring came from, since most of the robins in North America are present year-round. The name "robin" doesn't quite make sense either. These American birds were named by Europeans after the familiar robin of their English backyards, which also had a red breast. However, apart from their rufous chest feathers, these two species are not closely related, the Europeans being classified as chats, Old World Flycatchers, and the Americans as thrushes. There are so-named "robins" in many places that were colonized by the British Empire, none of which are closely related to the European robin but all of which have red on their breasts. Maybe a familiar name makes an unfamiliar place feel less alien.

Robins are, as we banders call them, turd birds. Their Latin name is *Turdus migratorius*, which seems apt because they poop all over the place: migrating turds. Robins are large birds, large enough that I can barely fit my fingers around their bodies when they're in the bander's grip. This is how I compare birds now, by how big they are in my hand. To someone used to working with tiny warblers and chickadees, robins are huge. A 25-cent piece weighs 5.8 grams; a yellow warbler 8.5; a robin 76; and an apple 164. A robin is as big as nine warblers, and weighs less than an apple. Warbler poops are at most petite button-sized blobs. Robin poops are dollops that cover a fourth of your palm. If a robin has been eating berries, its poop stains purple or red, like blood. Your hands, your shirt, the bird bag, your data notebook: you've either been mauled by a weasel, or you've been banding a robin.

Robins also yell. A lot. Which wouldn't be much of an issue, just an annoyance, except that in order to yell they must open their mouths. And when they do that, somehow their tongues will get caught in the net. Some bird tongues are shaped like arrowheads, with two long points near the back of the throat. The net can become looped around these points, and untangling requires the utmost delicacy. Tongued robins are frequently bloody when we get to them, having sliced their tongues on the net. Thankfully, these wounds are usually minor.

I wear a small Swiss army knife on my belt when I band, and sometimes I use the scissors to cut the net. The toothpick, and sometimes the tweezers, come in handy to slide loops of net off caught tongues. In my experience, robins most often have this problem, but I have also had to untangle yellow warbler and black-capped chickadee tongues. Nothing makes my fingers feel clumsier than trying to slip a single strand of thread off the tongue of a creature smaller than my thumb.

Black-headed grosbeaks are fierce birds. They actively defend their territories, issuing intensely upset dog-toy squeaks if you come too close to their nest. Grosbeaks belong to the cardinal family, and, like other species of *Cardinalidae*, have thick, powerful, seed-crushing bills. It's best not to let their mouthparts anywhere near the skin between your fingers. Usually grosbeaks pulse their bite, so there are constant waves of pain and the pinch never goes numb. I try to give them something else to chomp on while I work with them, but in my experience they'll spit it out unless it's squishy, like flesh. Pencil erasers work the best.

To release a bird after I've caught it in my net, I hold it in the banders grip but with my palm down, the bird's feet toward the ground, and loosen my fingers. I hold my opposite hand

underneath in case the bird falls instead of flies. A released bird might use my lower hand to launch off, but they rarely perch long, eager to escape and get back to their lives.

One particular female black-headed grosbeak, however, did not fly away. Instead, from where she rested in my palm she bent down and clamped onto the flesh of my index finger, just below the first joint. A quick bite, I acknowledge, I probably deserved. But this female didn't let go. Five seconds, ten, she still held on. I nudged her gently. Nothing. I tipped my palm slightly, hoping to throw her off balance, to get her to let go and fly away. Nope. Further and further I tilted, until she was hanging from my finger, still refusing to let go. As she bit she pulsed her bite, as if trying to extract her ounce of flesh. At an impasse, and in pain, I began to pry her beak off my finger. Finally, after nearly a minute, she flew off.

My parents first saw me band birds in Wyoming, three years ago. That banding station regularly had visitors, mostly school groups who were spending a week or longer in an immersive environmental education program. Other groups came too: Elder Hostel, military families, and once a group of U.S. Senators made an impromptu stop on the way to a fundraiser luncheon. After showing one senator's wife in her pressed skirt and pearls how to hold her hands, I placed a black-capped chickadee in her waiting palms. There it sat for a half-a-second, pooped, and then flew away.

Confident in my abilities and knowledge, I no longer batted an eye at the prospect of dealing with our visitors, be they kindergartner or senator. I started watching faces as I placed birds into visitors' hands for them to release. Children are more open in their emotions, but if you look closely there is awe in everyone's face, even those of us who have been handling wild birds for years. The nuances might be different, but our reverence all stems from that same child-

like wonder at the natural world. But my parents—I was nervous. I wasn't just showing my mom how to apply a filter on her new smartphone camera. This was sharing who I was, not just a skill I had Googled.

At first I was too excited, wanting to tell my parents everything I knew about these birds all at once, the words spilling and burbling like the jumbled too-quick song of a house wren. But by the end of their visit, ten days later, I'd slowed down. I was able to explain to them what, exactly, I'd been doing each time I left home to band birds. I showed them how to release a bird, and I watched their faces as I placed pine siskins and western tanagers into their waiting palms.

My mom, more open in her expressions, was clearly thrilled. For better or worse, I've usually been able to read her emotional state. My dad, always harder to read, was mostly silent. He and I process experiences similarly, not that we'd ever discuss something so personally self-aware. In his face I think I saw this: the awareness of a connection with nature encapsulated in a bird briefly touching your hand before flying away, back to its life that will never again intersect with yours. I thought I saw the fleeting desire for wings, and for the ability to momentarily see the world from a radically different perspective.

On my parent's last visit to the banding station, the nets caught a red-naped sapsucker, a medium-sized woodpecker about the size of my fist. After I had banded the bird, I crouched next to my dad and held the bird to his jeans, something we occasionally did if visitors were wearing thick pants. Once I loosened my fingers, the sapsucker jumped to my dad's leg, perching as if on a tree trunk. The bird paused, and ruffled its feathers. My mom took a picture of my dad standing there, a slightly bewildered smile on his face, staring at the red-naped sapsucker clinging to his calf.



Hummingbirds are the smallest birds in North America.

They are so tiny that banding them requires a special permit and special bands, basically pieces of tinfoil with numbers pressed in them. The best way to hold a hummingbird is like a cigar, delicately between three fingers, exerting the barest amount of pressure to keep their wings still so they don't hurt themselves. Hummingbirds will sometimes make a mewling sound, like a weak newborn kitten, as you gently untangle their bodies. It's hard not to coo to them, to reassure them. I frequently talk to the birds I handle, the Little Ones as I call them.

“Oh Little One,” I say, “How did you get this tangled?”

Sometimes, after I untangle a hummingbird from the mist net it will sit in my hand, miniscule feet tucked up into its chest, resting. Perhaps it is cold, or stressed, or just needs to catch its breath and get its bearings. If I shift my palm it will roll around, like a cigar butt with a bill. Dark eyes looking around, diminutive breast heaving as if it had just run a marathon, its colors changing in the light— an illusion of iridescence, a change of perspective. The feathers of the throat, purple at one angle, appear black if I shift my hand. After breath-holding seconds when time seems to stand still, the hummingbird's wings will again start their blurred movement and the bird will buzz out of my hand. A pause, and the world resumes.

One morning, I wasn't fast enough. It was too cold, my fingers too clumsy, too slow. The hummingbird was too tangled, too small. I put it under my vest and my fleece, against my T-shirt, but its wings had stopped fluttering.

I laid the tiny body beneath a tree, tucked away from the path. The insects and other decomposers would find it soon enough. I wanted to say something, but I didn't know the right

words to say over a dead hummingbird. Over a creature that died because of me. A bycatch of science. I tucked the grief away, dammed up with all the rest, waiting for a time when I didn't have to be strong, when I didn't need to keep it concealed under my shirt. Those moments never seem to come, and so my grief remains a lump hidden away, a small feathered body beneath a tree without words to send it off.

Sometimes, our nets catch insects. Most common are dragonflies, bees, wasps, and butterflies. If I can, I untangle the dragonflies and butterflies. If a butterfly is caught in one of our mist nets, gently pulling apart the net will likely send them on their way. They've usually just perched for a moment and are not actually tangled. Dragonflies, however, will have the net wrapped around their body segments, where their head attaches to their thorax. I've learned how to grasp a dragonfly like a hummingbird, like a cigar or a pencil, to untangle them. I've even cut the net for dragonflies, something usually reserved only for the most tangled of birds. The larger dragonflies can bite, delivering a sharp startling pinch that I never expect. I find it easy to forget that dragonflies are predators, hunters, and that they have the mandibles to prove it.

The hymenoptera, the bees and wasps, are the worst in mist nets. If you get to them fast, you have a chance to get them out easily. But if they've been there a while, even five or ten minutes, they somehow become impossibly tangled, with dozens of loops of netting wound around their body segments. The only option is to cut a hole in the net or to cut the wasp: a snip to separate the thorax and abdomen, another to separate the head. Once you make that cut, the legs and antennae will move for a few seconds before they realize they are no longer part of a whole wasp.

I've had to harden myself to this, to tell myself this is part of doing the job, part of doing science. Strained wings, bloody gashes, broken legs, amputated feet. Death.

Where do we draw the line? Is there a line? Does it mean something that I take such care with a hummingbird but I callously dismember a bee? Do we shun invertebrates, with their exoskeletons, their hemolymph, and their compound eyes? Or is it that we place higher value in an animal with a body plan more like a human, with a backbone and red blood and two eyes and a way of looking at the world that we understand?

This is how the world works, I tell myself. Cut the wasp.

When I am sad or worn down, I go outside and look for birds. I don't do this consciously. I leave my binoculars and field guides at home and I go for a walk. My preferred routes are in the woods, or those with views of mountains. Depending on my inner levels of turmoil, I may have to walk a long way before I begin to notice birds. But eventually, and sometimes suddenly, the birds are there. A woodpecker, tapping on a tree trunk as it looks for insects. Chickadees and nuthatches calling and hopping from branch to branch, a merry crew of avian acrobats. I flush a grouse, and we both curse in surprise.

At these moments, I'm not interested in what species the bird is, just that it's there. Giving a bird a name starts to restrict its reality, which is usually what I'm trying to escape from. I don't need to interact with these birds; we are simply present in the same moment. I don't need to know anything about this creature other than that it is alive.

No moment is exactly the same; savor each for what occurs at that precise time, be it good or bad. This is the way it is right now. Not in the future nor the past, but right now.

Some things defy labels, and some don't have labels, at least in any human language.



This is how you process a bird.

First, determine the species. The bird in your hand is small, its feathers shades of white and black and gray. Strikingly, it has a black cap and a thick black stripe through its eye, like a bank robber's mask, that contrasts with its white cheeks and the white stripe above its eye. Tiny black bill, black throat, gray back and wings. Pale whitish belly, grayish legs. You've got a mountain chickadee.

Now, put the band on the bird. Each band, made out of aluminum, is imprinted with a unique nine-digit number. Mountain chickadees take size 0 bands, the second-smallest size. Hold the chickadee in the bander's grip, neck between index and middle fingers, back against your palm. Using your thumb and pinky, hold the bird's left leg out from its body so you have clear access for your pliers. Using the tip of the pliers, spread the band slightly apart, enough that it will fit around the chickadee's leg. Place the band in the opening on the end of the pliers. Now, place the band around the leg and, using the pliers, close the band.

Next, figure out the age and sex of your chickadee. With some species of birds this is easy, because males and females will have different coloration. For example, older male yellow warblers are bright yellow with rusty streaks on their breast; females are duller, without the streaks. Male and female chickadees, however, look the same. But since it's the breeding season, we can look for sexual characteristics. Blow on the chickadee's abdomen to spread the feathers for a closer view.

All birds have cloacas, the orifice from which waste is expelled from the body. If they are male, this is also where the sperm comes out. If they are female, eggs. It's a multi-purpose opening. During breeding season, the males' cloacas will be swollen with sperm, at its most extreme looking like a tiny onion. Be warned, it is sometimes challenging to tell the difference between a slight cloacal protuberance and bird about to defecate.

Keep blowing on the bird's stomach. Do you see the bare patch that looks like a giant blister? That's a brood patch. During breeding season, most females will have a brood patch, a section of exposed skin on the breast with blood vessels close to the surface. To incubate their eggs, females develop these patches for skin-to-egg contact. Feathers are designed to hold body heat close to a bird's body, not to radiate it, so in order to incubate eggs a bird must get its feathers out of the way.

Now that you've sexed the chickadee, it's time to determine its age. Look at the condition of the feathers, and at the molt pattern. Birds molt, or grow, their feathers in specific patterns, which can be used to figure out how old they are. Your chickadee's feathers are a little worn, but she's not currently molting. This, combined with the fact that she has a brood patch, indicates that she's an AHY, or After Hatch Year—a mature adult. A Hatch Year bird is one that was born this breeding season—a juvenile, and therefore not old enough to breed.

You've finished the hard part, the identification, and now all that's left are the quick physical measurements. First, the wing chord, which you will measure by slipping your ruler under the chickadee's wing, and measuring from the bend to the tip of the longest flight feather. Last, the weight. Turn your scale on, and then select, from your assortment of differently-sized lengths of PVC pipe, the tube that has the appropriate diameter for the chickadee. Not too small, for obvious reasons, but not too large either, so that the bird could twist around and escape. Slide

the chickadee headfirst into the tube, and place the tube on the scale. After you've read and recorded the weight, pick up the tube and slide the chickadee out with a gentle finger to the rear, like a push-pop.

Over time you will learn how tight to hold your fingers, how to handle the pliers, and where to blow on the feathers to look for the cloaca and brood patch. Eventually it will take you less than two minutes to band and process a bird. You will know the slight color variations, and the difference between truncate and rounded secondary coverts, and how the difference varies between sparrows and thrushes. You'll be able to distinguish gray from "grayish" and "blackish" flycatcher legs. Over time, your hands and eyes will know these things.

You will also learn how to move quickly and efficiently, and how to untangle a bird in mere seconds. At first you are hesitant, desperately afraid of injuring a bird, but eventually, if the bird isn't terribly tangled, it will take you only the space of a few heartbeats. These songbirds are delicate but hearty. You will know, just by feel, how much to manipulate each one. Safety is important, but part of safety is speed. The more quickly we untangle the birds and get them banded and processed, the more quickly they can get back to their daily lives, to feeding themselves and their young.



I banded my first bird 10 years ago.

I don't know how many birds I've taken out of nets since then, but my best guess is a couple thousand. This isn't that many. The stations where I've worked have been small, generally with only 10 nets open at a time, and only band five or six days a week. Some of the

bigger banding stations run 70 nets, 7 days a week during peak migration, and they process hundreds of birds a day. These stations are usually on migration pathways, in strategic places along the routes birds follow as they head north and south during migration to and from the Northern Hemisphere.

Some of the busiest stations are located where birds will gather before crossing large bodies of water, like the Gulf of Mexico. Many songbirds fly in non-stop flights over the Gulf, including tiny ruby-throated hummingbirds. This fact still amazes me. Ruby-throated hummingbirds weigh perhaps 3 grams, with a wingspan of 3 or 4 inches. Despite their small stature, they'll fly 500 miles, non-stop, across the open waters of the Gulf of Mexico, a feat that takes about 20 hours.

Imagine possessing a body evolved for such undertakings. Imagine such constant life movement. Imagine that impulse, the drive to commit such a monumental, life-threatening task. Imagine flying, skimming the water's surface 200 miles from land, buzzing past the startled faces of oil rig roughnecks and sailors. Moments of ordinary beauty in the most unexpected places. With creatures such as these hummingbirds in the world, I don't need to look to the unknown to be awed. Not when there are so many knowns that are this miraculous.

Birds help me remember to look for the new even as I learn from the wisdom others have already discovered. We all have our own ways of deciphering the world around us, two of which are religion and scientific inquiry. But I need to put my observations into my own words in order to understand—the language of the scientific journals, like the language of the King James Bible, is not how I make sense of the world. I need to hold the birds myself, to feel their wings flutter under my shirt. This physicality forces me to think about the creature I am holding, about what is

to be gained from my actions, and about the potential pain and suffering I'm willing to inflict on another living being. Priests translate religious texts; biologists the natural world. Both pursue the unknowable. There are aspects of life we may never know; truths we may never comprehend. Or, maybe we're not yet capable of understanding the data because we haven't invented the right analytical tools. We keep accumulating data with the faith that even if we can't figure it out right now someday someone will.

I don't replace a higher religious power with birds, but I see these facets of my life as intimately interwoven, one thread bound so closely to the other that I can't tease them apart. But my faith in birds and religion don't always neatly align—nor do I want them to. The mysteries of each give my life purpose, show me how to be a better person, and how to make the world a better place for other living things. Why then do I need to be able to definitively articulate and compartmentalize?

Each bird I handle is beautiful. It is a rare privilege to hold them in my hands, even the robins and grosbeaks. To know their feathers against my palm, their feet against my calloused skin. To blow aside their feathers and glimpse their pale stomachs; to hold them trapped in my hands while I stare into their eyes. I know the birds I handle in ways that no one else ever will, unless they are caught again.

Sometimes I feel that I'm caught in a cloud of a thousand birds, like a murmuration of starlings, and all I can do is stand and watch as they swarm around me in mesmerizingly complex shapes. A cohesive flock responding as one but with no leader, sinuously pulsating and shifting, no bird touching another, close enough that I can feel the air from their wings as they pass inches from my face.

My sister and I once paused outside a store in Ohio to watch a never-ending flock of starlings flow across the sky like a river—the dirty Cuyahoga River in bird form, twisting, flowing, melding into the horizon. Thousands of birds, moving fluidly as one.

“Where are they going?” she asked me.

“I don’t know,” I said.

We stood in silence on the sidewalk, our eyes to the sky.



Cedar waxwings possess a certain sophisticated style.

Their feathers look like chrome, silky and shiny. Brown crested heads blend seamlessly into gray bodies. Over their eyes, a black bandit’s mask. The tips of their tail feathers are bright yellow, the amount varying with age and sex. Older males have the most yellow. Their most unique characteristics are the small tear-dropped shaped waxy secretions that can form off the ends of their wing feathers. Again, older males will have the most, sometimes up to seven tips on each wing. No one knows for sure what these waxy tips are for, but they are probably a way to advertise health and age, to attract mates. Usually in large flocks, cedar waxwings are frequently found gorging on berries, their high trilling whistles calling back and forth between the trees.

Once, after a day of banding, we had a cedar waxwing that didn’t fly away. Perhaps it was too stressed, or had strained a wing. The waxwing was a Hatch Year, born that summer and already fully feathered and fledged, so maybe it was just overwhelmed. Instead of flying, the waxwing jumped from the bander’s hand to the ground, where it slowly hopped into the

undergrowth. After a few minutes, one of the other field technicians picked it up and placed it in a nearby tree. This was the last net check of the day, and we left the cedar waxwing while we packed up our nets and gear. When we were done, I came back to check on it. The bird was still there, perched on a low branch next to our banding station. I picked some berries from a nearby bush, thinking to entice.

Softly, I murmured, “Hey there Little One, why haven’t you flown away yet? Come on, here’s a berry for you.”

The bird could barely hold the branch, but when I offered a berry between the tips of my fingers it scrambled away, nearly falling out of the tree. It kept its careful gaze on my fingers, every once in a while looking up at my face. After a few tries, I balanced the berry between my index and middle fingers and offered it, palm up, to the cedar waxwing. Gradually the waxwing ate. I fed it maybe ten berries this way, slowly, patiently. The cedar waxwing cocked its head to follow my movements as I shifted to pluck more berries.

“You’re a little pig, aren’t you?” I murmured as I offered another berry.

After 15 or 20 minutes I left, the waxwing noticeably perked and alert in the tree. I had to finish my work day. I didn’t want to leave. But I walked away.

I don’t know what happened to that cedar waxwing, but I like to think it flew off, that it survived. I like to think that all birds we catch and band survive. That they all make it to their wintering grounds in Central or South America, that they all will come back next summer, that they will successfully find mates and raise nestlings who will fledge and continue the cycle. I know, for most birds, that this will not happen.

Many songbirds die in their first year, because they are young and inexperienced. Others die on migration, or on their wintering grounds. They might starve, or drown in the Gulf of

Mexico if they read the weather wrong, or be eaten by a cat in someone's backyard or a hawk in a field, or get sick. For a small songbird, the risk of dying each year is about seventy percent. The scientist in me knows these things, knows that many of the birds I've touched will die within the year. They will all die, eventually, as will I. But this knowledge doesn't stop my actions. The warblers continue to mate, to migrate, to sing. I continue to study these birds, to wake up early and set up nets before sunrise to catch them.

We continue, all of us.



At my granddad's funeral, there were blue jays in the flower arrangements. They were fake of course, made of painted Styrofoam and feathers, but the field marks were reasonably accurate. The florist knew my grandparents, and promised my aunt that she would make the arrangements special for Granddad. I realized, seeing those birds, that if Granddad was a bird he'd be a blue jay, and not just because his natural plumage consisted mainly of blue plaid button-up shirts.

Jays are gregarious, and have strong family bonds. I usually see them in groups of three or four, sometimes more. Intelligent birds, they mate for life, and have complex social structures. They have been known to imitate red-tailed hawks in order to scare away other birds from feeders. I always felt that blue jays did this because they could, a joke on other birds.

Granddad was a mechanical engineer, though I never knew him as that, just as a grandfather who rolled around on the floor with his twelve grandchildren, took them for long tractor rides around the backyard, and wrote limericks and puns. One of his favorite jokes was to

carry around a small box and invite us to see his “diamond” pin. Inside the box were a shiny silver dime and a safety pin. He and Grandma were married for 60 years.

At the cemetery, it was silent. Six of my male cousins set the coffin in front of the chair where my grandma sat, under an awning. The snow was falling heavily, heavy enough that the roads were nearly impassable. Family and friends huddled together under the awning in an L-shape around the coffin and a row of four chairs. I couldn't make eye contact with anyone. I couldn't stare at the polished wooden coffin, especially not when the priest began the service and symbolically sprinkled ashes on the end. I wanted to stare out at the trees but they were behind us, and I couldn't stand with my back to the service. Now was not the time to seek comfort among the trees.

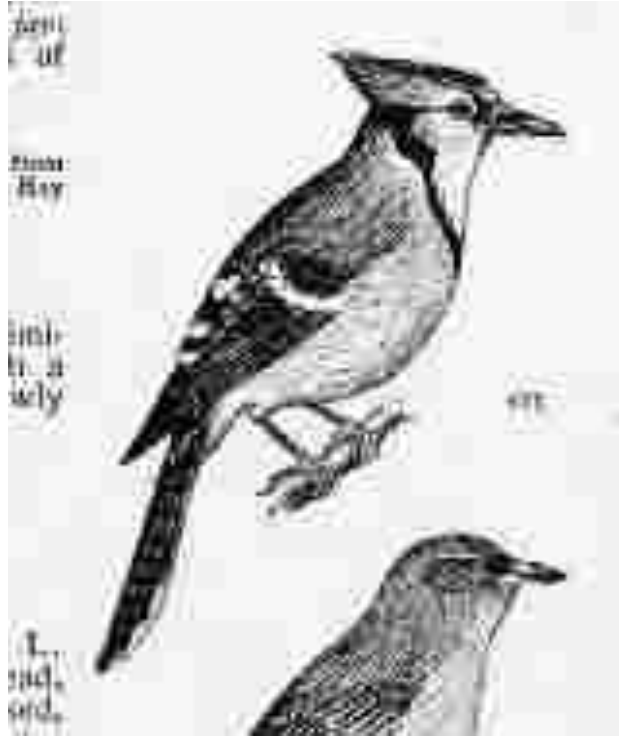
The snow falling beyond the awning and the snow already deep on the ground muffled the day. The weather didn't fit, not really. Grandad wasn't a cold snowy day. He was the spring, when new things grow and you find the unexpected popping up out of the ground, when little marvels constantly reveal themselves to the world. Or that is how he was. I suppose the Alzheimer's turned him more into this snowy expanse. It came down gradually over the years, and in the end the grandfather I knew was buried, all but his smile.

As I stood there, unable to will back the tears, there was a moment of silence, a pause before we turned to go back to our cars. I heard a blue jay call from the tree line.

I found more comfort in that blue jay than in anything the priest said that day.

I put my faith in birds.

How I Abide



From *Color Key to North American Birds* by Frank M. Chapman and Chester A. Reed.
Accessed from The Biodiversity Heritage Library.

The night before my grandfather died, I went to Wildwood Brewery in Stevensville, Montana. Two friends and I had been rock climbing at Mill Creek Canyon, which is located in the Bitterroot Mountains. The weather that day was more spring than winter, even though it was mid-February. Ravens soared the blue sky above us, and we soaked up the warmth from the sun and the rock. My friends and I decided to end our satisfyingly long day of climbing with a stop for a beer, as we often did. It was a Monday night, President's Day, and, unbeknownst to us, Movie Night.

Wildwood is housed in a barn assembled of hand-hewn beams salvaged from Wisconsin and insulated with straw. The brewery equipment takes up most of the interior, and the smell of yeast lingers in the air, faint enough to be pleasant. Three or four beers were on draft that night, three dollars apiece. The six patrons all looked towards the door when we walked in. A TV screen next to the bar played *The Big Lebowski*, and the movie was about halfway through. We whispered our orders to the bartender, moved to a table near the back and watched the rest of the movie, slouching in our seats in order to peer around the heavy wooden beams that stretched across the bar.

We left just after the last scene of the movie, where the Dude and Walter are standing on a cliff edge, spreading the ashes of their friend Donny over the ocean. Walter eulogizes at length, and then opens a coffee can and throws Donny's ashes out into the wind, which blows them back into the Dude's face.



The next morning, around 8 a.m., my dad called. Granddad died last night, he told me. He was on his cell phone, on his way to my grandma's house. I don't know who called his mother that morning with the news, if it was family or a nurse. I didn't ask. My aunt, my dad's sister, spent the night with Granddad at the assisted living home, and was there with him when he died.

I found it fitting that it was a Tuesday. My dad worked from home those days, and every Tuesday at 10 a.m. he would take Grandma to visit Granddad. She didn't like driving through the roundabout near the home, and would drive to our house so my dad could drive her. For the past couple years whenever I was home I'd join them. Grandma would fill the ten-minute drive with news of my cousins and other relatives spread across Ohio and the Midwest. We have a large family, twelve of us grandchildren alone, so there were always updates to share.

Most of my family lives in or near Ohio, where I grew up, where I spent most of the first twenty-two years of my life, and where I have not lived for the past five. At last count, I've lived in nine different states, including Montana. Seasonal field work studying birds allows me to spend three months here, six months there, travelling the country to seek out new places and experiences. When I wasn't being paid to chase birds I had internships at nature centers, teaching school children about alligators or manatees, or how to dissect an owl pellet, or how to identify a maple tree. These jobs too only lasted a few months, and then I'd be gone, on to a new place.

Sometimes, instead of looking for another job, or when I couldn't find another job, I'd take weeks-long road trips with my best friend, a photographer. Our destinations varied, but our style of travel remained the same: arrive, look around a while, and move on. Sleep in the car, or on a mat on the dirt, eat cereal and milk from the cooler; rock climb, hike, or drive during the day. We covered a lot of ground that way, and I sent a lot of postcards back home to my family. Then, last year, I decided it was time to settle down for a while and earn a graduate degree.

Committing to two years in Missoula for graduate school seemed monumental at the time. I didn't remember what it feels like to reside in one place for so long.



I started rock climbing my first year away from home, as a freshman at a small college in central Ohio. By my senior year I was driving four hours one way nearly every fall weekend to climb at the Red River Gorge in Kentucky. The Red, as we called it, is a world-class climbing area, one that nearly every climber speaks of in reverential tones. Since then, I've climbed in ten states across the country, on desert towers and squat boulders, on classic routes polished smooth by countless other climbers and on newly established ones covered in moss and grit. Sometimes I dance gracefully up the rock, other times I bash myself bloody on its sharp edges. I like routes that are crimpy, with holds thin as pencils, just big enough for fingertips. These routes require more balance than strength.

I notice birds as I climb—ravens patrolling the cliff-line, turkey vultures appearing from nowhere over the top of the rock face, peregrine falcons circling and calling. Small birds buzz back and forth midway up the wall, level with our faces. Those are violet-green swallows, I tell my friends. They humor me, but quickly get back to the business of climbing. As I watch the birds soar above us, I sometimes envy the swallows and falcons for their agility and seemingly effortless efficiency. But would climbing hold such appeal if we could fly?

Rock climbing combines the mental with the physical in a way that's hard to find in our modern society. Climbing requires two people, one who climbs and another who belays, the two connected by a rope. The word belay evolved from the Old English word *beleggan*, which means

to surround, or to adorn, or to invest. Figuratively, it referred to encircling, or coiling around something. Now, the word is used by rock climbers to mean, “To tie oneself, as a stationary member of a roped party, to a firm rock projection... in order to secure oneself and to afford a safeguard to the moving climber.”¹ This stationary member, the belayer, is responsible for making sure there is as little rope as possible between themselves and their climber. In this way, if their climber falls they can provide protection by holding the rope to prevent any further slippage, which leaves the climber suspended just below where they fell off the rock. Climbing ropes are dynamic, or stretchy, to prevent them from snapping when exposed to the sudden forces of a person falling. Belayers use special belay devices in order to be able to hold the rope once it is weighted, though in the early days of climbing belayers simply wrapped the rope around their hips, using their bodies to provide friction to stop the rope from running through their grasp if their climber fell. Decking, or falling off a rock face all the way to the ground below, rarely ends well.

I try to go into every relationship, climbing or otherwise, with the expectation we’ll belay each other. We will each fall, sometimes on the same route, sometimes on different ones, but we’ll catch one another. “You’re on belay,” I say to my climber after they tie into the rope and my belay device is set. “I got you.”



¹ From The American Alpine Institute climbing blog: <http://blog.alpineinstitute.com/2010/02/climbing-word-origins.html>.

I knew I didn't need to be there for Grandad. He had other family there, my aunts and uncles and cousins, my parents and siblings, who were with him until the end. My dad had called me Sunday night, two days before, to tell me that hospice was there. Maybe weeks, maybe days, the nurses weren't sure. I asked if I should come home, and Dad said no, not yet. I had classes, school work to do, and he didn't want me to fall behind. My being there wouldn't make a difference to Grandad. These justifications echoed the hollowness I felt in my heart, but I couldn't say anything, and so I stayed in Montana.

Grandad had Alzheimer's, and hadn't known my name for years. I'm not sure when I realized this. He kept a small notebook in his shirt pocket, and was constantly taking down notes in pencil. It was only a few months ago that my dad told me it was because Grandad couldn't remember things. As a teenager, I was too wrapped up in my own reality to notice or question Grandad's notebook. As he wanted it, I'm sure. Grandad was a retired mechanical engineer, though I only knew him as a benevolent figure who played dolls or trains on the floor, and who had a pun or limerick for every occasion.

I wonder how those notes changed over the years, and how they differed from the notes he'd write as an engineer. If his precise handwriting slowly got softer, shakier. Does it take as long to forget how to write as it did to learn? I wonder if he found comfort in watching my cousins and me laugh and play, watching us live our lives around him, even if he couldn't remember who we were.

Two days after the Tuesday morning phone call from my dad I flew home for Grandad's funeral. After such a mild winter in Missoula, it was strange to stand in the Ohio cemetery during a Winter Weather Advisory. The snow fell thick and fast, large flakes melting on my already damp cheeks. I shoved my gloved hands deep into my pockets and hunched my shoulders,

though I'm not sure if it was against the cold. Just like at the service, I spent most of my time staring at the ground three inches past my boot-tips. I find it easier to keep my mind blank if I don't look at the faces of those around me. It's an absence of thinking, where everything extraneous is willed away. The world spun on around me, but all I saw was the wet splotch of snow on the toe of my boot. As I watched, it seeped into the leather, dampening my sock.

The sound of a blue jay's loud *jeer* jolted me from my desolation, and I remembered how to blink. My ornithological training kicked in and I wanted to run into the woods, to study the bird and see where it goes. I wished desperately for wings.



When I rock climb, the world narrows to the immediate. All that matters is directly in front of me: the rock under my fingers and toes; the rope tied to my harness; my belay partner on the ground beneath me, taking up the slack in the rope as I climb then lowering me safely down once I reach the top. One of the reasons I keep climbing is because of that intense focus. It's one of the only times I allow myself to be so single-minded, to exclude the rest of the world. I only have to worry about myself and my partner, no one else.

Climbing is a full-body challenge, as much a mental puzzle as a physical one. It's about seeking, about finding and following a route up the rock, and figuring out the precise combination of strength and balance needed to progress upward. Trust needs to override fear: trust in the strength of your fingers, in the grip of your shoes, and in your own ability. Trust too in your belayer, that they will catch you if you fall, and keep you from hitting rock bottom. Trust that they will keep you from dying.



My last memory of Grandad is from January, when I was home for winter break. He was completely reliant on his walker, his slippered feet taking slow, measured steps, each a concentrated effort. The short distance from the living room to the sunroom, where we would sit to visit, left him drained.

I brought pictures from the summer, when I was working in Wyoming banding birds. Grandma told me he especially liked looking at smiling faces, so the pictures were mostly of me, on top of mountains with my arms held high, or holding different birds, yellow warblers and red-naped sapsuckers and mountain chickadees, squinting in the sun. Grandma sat next to him on the couch and helped him turn the pages of the photo album. She'd read the caption I'd written at the bottom, then look up at me and say, "That's Lauren, your granddaughter, and she's right there."

"What a pretty lady," he'd say with a broad grin, looking into my eyes.

"She's smiling."

I never knew if he was talking about my smile in the picture or the grin on my face as I watched him.

After our visit, Grandma and my dad helped Grandad shuffle slowly back to the living room, where he had an easy chair to watch television with the three elderly ladies who also lived in the home. Wanting to be out of the way, I stood near the front door behind his chair. Grandma fussed over him, adjusting pillows, straightening his glasses, ordering him to sit up and scoot back. Right before we left she bent and kissed the top of his head.

"I love you," she said.

I couldn't see his face as he looked up at her.



When I climb, I rarely look down at my belayer. Occasionally, if I'm having trouble figuring out the route I'll look down for advice and encouragement, but usually when I'm focused I don't. I know my belayer will be there, when it matters and when it doesn't, to offer support and safety. The belayer won't keep the climber from falling, just from falling all the way to the ground. They let you learn from your mistakes, try and try again until you get it. The best climbing partners trust each other implicitly. They hold each other's lives in their hands, a responsibility and honor that's rarely articulated, but deeply felt. They can communicate without words, with just a look.



One of the pictures I showed Grandad that day was of me on the summit of Disappointment Peak in the Teton Mountain Range in Jackson, Wyoming. Behind me, mountains extend far into the distance. The sky was that fake-looking, obnoxious shade of blue that characterizes most outdoor adventure photography. I stood with my grin stretching wider than my arms, a white dollop of sunscreen on my nose and wisps of hair blowing from under my helmet into my eyes. A smudge of dirt streaked across my cheekbone, and my clothes looked like I'd slept in them, which I had. My eyes watered from the wind.

I had climbed the mountain with a friend, a day-long affair that required we start before sunrise. The peak is called Disappointment because of its location directly in front of the Grand Teton. From the valley floor it appears that the two peaks are linked and that a person could get to the top of the Grand, the tallest peak in the range, via Disappointment. It's not until you're on the summit of Disappointment, staring into the thousand-some foot drop to the glaciers and rocky debris that separate the two mountains that you see they're not connected.

Experience has taught me to carry things with me on my adventures: a first-aid kit, water, a raincoat, snacks. Sometimes a notebook and pen, sometimes bear spray. Tucked among these things are the names of those who are lost to me: loved ones who have died, friends I've lost touch with, old loves. If I could fly like a tanager or a warbler, I'd disperse them across forests and grasslands, along rivers and mountains. There is not enough space inside me to carry them all at once. Having eaten and digested these names, I'd carry them with me for a time then leave them in new places. In fertile soil, with enough sun and water, they will grow. When I return this way again, I will eat their fruit and be nourished.

But my digestion is not as efficient as that of a bird, and with only legs and arms to rely on dispersal is slow. The wind catches the names before they are planted and blows them back into my face. Perhaps, if spread enough, diluted among the places of my life, the memories kicked up by the breeze won't be choking, suffocating. I honor as I know best, but the memories still fill my nose and mouth.

My eyes sting with the dust of love and Disappointment.

Scattering Blue



BLUE JAY.

From *The Bird Guide* by Chester A. Reed.
Accessed from the Biodiversity Heritage Library

I found a blue jay feather resting under a tree at my eldest cousin's wedding reception. The feather was near the barn that housed the live band, between the tent sheltering the dinner tables and the building with the bathroom. Slightly curved and long, it was probably a flight feather from the bird's wing. I only saw the feather in passing, a flash of iridescent blue with black bars. I was two steps past, on my way to the tables and my glass of wine, when it registered. My step hitched for a moment, but I kept walking.

It was August, and family and friends were gathered just outside of Ohio's Cuyahoga Valley National Park, not far from where most of my cousins and I had fledged. Most of my immediate family lived less than an hour from my parents' house, about 40 minutes from Cuyahoga Valley. With twelve of us cousins on my father's side, every holiday and birthday was boisterous. There was always someone your age to play dolls or trains, and, with a few of the adults joining in, we had two full baseball teams. Now grown and with the youngest of us graduated from college, we've dispersed from our natal grounds. Some stayed close in Ohio, others went to Illinois, Wisconsin, Texas, Montana. But every year, be it for major life events or holidays, we migrate back to Ohio.

That Christmas, my aunt gave my grandma a rosary. It had been nearly a year since Grandad died. He'd spent the last few years of his life in a nursing home, the Alzheimer's too advanced for him to live safely at home. The rosary beads were imbedded with the dried and crushed flowers from Grandad's funeral service, flowers I had helped my aunt gather. Or rather I had intended to, but, when the time came after the service, the tears I thought had been exhausted in the mountains behind my house in Montana broke loose. I sobbed into my father's shoulder as we stood in front of his father, exhibiting emotions I'd never seen either man display, though I

knew they'd felt. My sister plucked four or five bright stems from the arrangements, the red, orange, and yellow lilies and roses bright against the polished wooden coffin lid.

The beads of the rosary were a pale dusky blue resin flecked with tiny specks of the dried flowers. The color reminded me of the wing patch on a blue-winged teal, or the feet of a waved albatross. Blue, my aunt explained, because Grandad's eyes were blue, and because he always wore blue plaid button-up shirts. We passed the rosary around the room, everyone's hands cupping, admiring. When it got back to Grandma she held the beads lightly in her hands another moment before putting them back into their small velvet pouch.



Blue jays are striking birds. At first glance, you notice the blue. They have a plain, bright blue head with a crest, and will raise and lower this crest depending on their aggression level. When smoothed to a point, like a slick-backed mobster's haircut, the jay is calm. Nothing has them riled up; no predators are nearby, nothing is threatening their family or their food source. When the crest is raised, feathers standing up like a shield, the jay is agitated, yelling at some affront either real or imagined. A black line extends from the base of the crest under their chin, like a necklace, and then up the other side. Another black line runs from their bill through their eye to the black behind the crest, and there is a splash of white, like mime's makeup, above and below this line.

The feathers on their wings and tail are a slightly iridescent, darker blue, barred with black lines. Each wing, when extended, has two stripes of white: one near the middle, the second along the bottom edge of the wing. There is white along the outer tail feathers too, only visible

when the tail is spread in flight. Underneath, a blue jay's chest and stomach are a creamy gray, blending to white near its legs. Their legs are a slate-gray-black, with four long toes on each foot, each toe with a strong, curved claw. Thoreau called them "delicately ornamented," and Audubon "physical perfection."

Growing up, I didn't pay much attention to blue jays. They were relatively big and easy to identify, and therefore not quite as interesting or challenging as the other birds. Colorful, yes, but common. It's funny what we take for granted as children, and how biological splendor in the backyard doesn't get a second look.

A year after I graduated from college, I spent six months in Erie, Pennsylvania, working as a field biologist banding migrating songbirds. In the fall, these birds—tiny hummingbirds, warblers, thrushes, orioles—moved south from Canada to cross Lake Erie, on their way to their wintering grounds in Central and South America. In the spring, the birds headed north, to breeding grounds in the boreal forests or on the Arctic tundra. My coworkers and I set up nets to capture these migrants. Once caught, we would identify and band the birds, releasing them unharmed with a bright metal band clamping around their leg, a permanent identification bracelet.

We sometimes caught blue jays in our nets, some of the largest birds we were equipped to band. The jays would barely fit in a single hand, nearly four times larger than the warblers or chickadees more often caught in our nets. We recorded basic information for each bird we banded; their age, sex, weight. Adult blue jays have black barring on their wing feathers, while the young birds are unbarred, and a duller shade of blue. I'd also study their eyes, looking for the

subtle ring of gray around the iris of the younger birds. Blue jay irises are brown like smooth melted chocolate, and bottomless.

To hold the birds, we use what is called the bander's grip: the bird's head between our index and middle fingers, back to palm, wings held closed and still by the rest of the fingers. This immobilizes the bird so they can't thrash around and get hurt, and also gives easy access to the leg for banding. When held in this manner, birds often grasp your pinky with their feet. Blue jays will dig their sharp claws into skin with unnerving strength, and it takes a firm touch to pry your finger from their grip.

There in Erie I learned about blue jay trances. Going to their "happy places," we called it. The other banders showed me that if you stroked a blue jay on its stomach while holding it in the bander's grip the jay would slowly go stiff. You could release your hold and the bird would lay flat in your palm, unmoving. Or, if its feet had been gripping your finger, you could dangle the blue jay upside-down, bat-like, from your thumb or index finger. There it would hang, unmoving, blinking occasionally. After a few long minutes the jay would suddenly twitch and fly away.

The next time I paid any particular attention to blue jays was at my grandad's funeral, five years later. It was February, and I traded my usual jeans and flannel for crisp black pants and a white shirt, the only clothes I had that were what my mother would consider appropriately dressy and also warm. Missoula, Montana, where I lived, was experiencing a mild winter; Ohio a harsh one. The day of the funeral service the snow fell thick and fast, piling up on the sidewalks, the cars, the roads. I borrowed a pair of my sister's black dress boots, having failed to pack

coordinating footwear. I didn't have any thin dress socks, only thick wool, so I wore a pair of Halloween socks I'd left in the dresser in my childhood bedroom. The socks were bright orange, speckled with white and yellow stars and witch hats. I think Granddad would have approved.

Standing in front of the open coffin before calling hours, I stared at the small, decorative blue jays in the flower arrangements. Later, at the cemetery, I heard blue jays calling from the nearby woods. I couldn't watch the priest with her ceremony and ashes, couldn't watch my father or uncles or aunt or grandmother, but I could look out at the trees, steadfast in the falling snow, and listen to the blue jays.

Blue jays are not especially uncommon birds in this part of Ohio, the northeastern corner where the Crooked River twines through forested hills. Though they can be found in any wooded area in the state, blue jays tend to prefer the edges, the liminal habitats where forest gives way to farm field or meadow. Resident birds, they are loyal to their natal habitats in a way I am not. A year before the wedding, and six months before Granddad's funeral, I moved to Montana for graduate school. Before that I was living in Wyoming; before that Colorado; before that a list of other states, East and West. For someone who studies birds for a living, this is normal. Three months here, maybe six there, working with different species and different projects, following the birds and the funding. I've spend the last few years traveling in crooked lines across the country, but I always find my way home.

Despite years of research, blue jays remain somewhat of a mystery. In the winter some migrate and others stay put, a partial migration. There are no hard-and-fast rules for their behavior, and sometimes a bird will migrate one year and the next it won't. Usually it's the younger birds that migrate, but some adults do too. Others stay, year-round residents. They stay

at home, with their families, in familiar territory. There's no way to tell which blue jays will stay and which will go.

I grew up in a house surrounded by trees and farm fields, and my mother has had bird feeders since before I can remember. I don't know when I first learned the shape or call of a blue jay. They are large birds, larger than a robin but slightly smaller than a crow. In their family groups of three or four they would monopolize the feeders and deck railing, their boisterous chatter and dominating presence forcing the other birds to keep their distance. Blue jays are corvids, cousins to crows and ravens. Corvids are known for their intelligence: for their ability to cache hundreds of acorns and find them again months later, for their ability to make and use tools, for their ability to recognize human faces.

A blue jay's call is unmistakable, a piercing and harsh *jeeer*. They're the crass person yelling across a room and not caring who hears them. Sometimes jays will imitate predatory red-tailed hawks, probably to scare other birds away from the food, minimizing competition. Blue jays do produce more musical sounds, like what is called the pumphandle call, a *WHEEdle-ee* whistle that almost sounds as if it belongs on a wind-up toy; and the whisper song, a quiet song of contentment comprised of whirrs, clicks, and whistles, sung when they are alone and relaxed.

Alexander Wilson, a nineteenth century Scottish-American ornithologist, described blue jays as being, "... distinguished as a kind of beau among feathered tenants of our woods, by the brilliancy of his dress; and like most other coxcombs, makes himself still more conspicuous by his loquacity, and the oddness of his tones and gestures."

I can't imagine Grandad ever dressed like a coxcomb, not with his penchant for blue plaid and apparent disregard for the rest of his appearance. He was always presentable, but never

what you'd call a dandy—though I'm sure he'd have a cheesy pun about it if he could, probably something about a 'beau' tie. The only tie I remember Grandad wearing featured the image of Donald Duck. He'd use a clothespin for a tie-clip, and would usually greet us grandchildren in his Donald Duck voice, which then prompted five or six of us to spend the next ten minutes puffing up our cheeks and drooling all over ourselves in attempts to also imitate Donald. I seem to remember my eldest cousin being the best, sometimes even better than Grandad. I was impressed by this, and I wonder how much they both practiced. The things we do for the entertainment of others.

When I think of Grandad, I remember a white beard and a smile. There were the Santa Claus years, when his normally closely-trimmed beard got a bit wild, and the unruly facial hair made him look like he'd just come from a long tramp in the woods. He always wore button-up shirts, usually a soft blue plaid, nothing like the starkly contrasting blue and black and white of a blue jay. Flipping through family photo albums, the assembled grandchildren get taller, their faces more defined, their hair longer or shorter, their clothes reflecting the current era: the 80's, the 90's, the early 2000's. But Grandad's blue plaid remained constant, never out of style—not that he would have cared. The changes over time in our albums remind me of the similar changes in my field guides: the paintings are unmistakably a chickadee or a blue jay, but as they become more modern the illustrations become more detailed. Or perhaps it's that I know what field marks to look for now. Sometimes, when I study family photographs, it's like looking at species accounts for ivory-billed woodpeckers or passenger pigeons. I know, deep down, that they're gone. But I still yearn.

I have an old book of puns, written by Bill Keene, that Grandad wanted me to have years before he died. A small slip of paper with my name written on it is taped to the cover. As a child, I took to writing out jokes and puns in the cards and letters I'd write my grandparents, my repertoire and subject matter expanding substantially once my parents had a computer with internet access. I wasn't clever enough, nor patient enough, to come up with my own jokes, as Grandad did. But those were my offerings, sometimes I think because I didn't know what else to write.

It wasn't until after I graduated from college that I started writing rhyming poems about animals for Grandad. The poems were mainly about birds that I had held or studied, and were accompanied by pictures of me holding them. When I gave him the first book, he was still able to read, to turn the pages on his own. The rhymes made him chuckle as he read them slowly aloud. I couldn't tell if he actually understood them, or if he simply enjoyed the idea of the rhymes, the way they sounded and felt in his mouth.

About a year after the first book, a trip to Asia inspired more poems and I put together a second volume. When I told my dad, he paused. Grandad's not reading anymore, he said. I hadn't been home for a visit in a few months, but this didn't surprise me. On a good day, Grandad could articulate some of the words, and could repeat the rhyming pairs. Other days he could barely hold the book up while my grandma turned the pages. But rhymes still made him smile, so I kept writing them.

Of the 27 or so poems I wrote, none involved blue jays. One of the first was simply titled "Woodpecker:"

How much wood has a woodpecker pecked?
Only the usual amount, I suspect.
They're looking for insects under the bark—
What'd you think, that they'd bang up their heads for a lark?

I covered an odd assortment of specific species: Cedar Waxwing, Northern Saw-whet Owl, Blue-winged Teal, Blue-footed Booby, Raven, Roseate Spoonbill, Cooper's Hawk, Sandhill Crane, Trumpeter Swan—all birds of which I had pictures. Others poems were more general: Goose, Chicken, Woodpecker, Mockingbird, Owl, Penguin. I sometimes think of compiling my poems into a book and trying to get it published, with watercolor illustrations by one of my cousins. I haven't talked to her about this, and I haven't worked on seriously compiling a manuscript. And I haven't written any new poems since Grandad died.



A couple years ago, while waiting for a flight to Ohio in the Denver airport, I wandered into one of the gift shops that line the terminal and bought a pair of blue jay earrings. I was not particularly drawn to blue jays, not back then, though blue has always been a color I gravitate towards. Buying those earrings was an impulse, one I didn't question at the time and one I don't question now. I don't wear crosses or other religious symbols, but I do wear birds.



In bird feathers, there is no blue pigment. The color blue comes from black, which comes from the pigment melanin. This pigment is produced by the birds when they oxidize an amino acid called tyrosine, and acts as an antioxidant. Melanin, in varying concentrations, makes feathers black, brown, grey, tan, or reddish brown—earth tones. The more melanin granules in a

feather, the darker the color. When these granules are arranged in a certain way, tucked neatly between tiny air pockets in the feather barbs, they are seen as blue. If those same feathers are ground to powder, the resulting dust is black. Blue isn't real, in a way. It's just a trick of the eye, a bending of light. Coherent scattering they call it, the way the light particles bounce off the structure of a feather, reflecting into our human eyes as blue. A structural color, instead of purely a pigmented one.

Feathers with melanin in them are strong. Many birds, even ones that are primarily white like gulls or snow geese, will have black flight feathers. These feathers, on a bird's wings and tail, are directly responsible for the bird's ability to fly. They take a lot of wear-and-tear; worn down from airborne particles, brushed against bushes and trees, dragged on the ground. Melanin also protects against bacteria that would break down feathers. I studied parrot feathers in a lab once, and I watched as the black feathers in their flasks of feather-eating bacteria remained seemingly unchanged while the white feathers disappeared, dissolved into the bacteria-laden medium. Melanic feathers, especially the blacks and browns and blues, hold up best.

Feathers grow in tubes, circular sheaths, which break apart as the feathers push up through the skin. When feathers unfurl from their sheaths to cover a bird they are dead, like mammal hair or fingernails. Each year, often multiple times a year, a bird will molt these feathers and grow new.

When memory starts to unfurl, when the Alzheimer's sets in, coherence scatters. Things that were once easy are now lost: how to drive a car, how to tie your shoes, the names of your grandchildren. But Granddad wasn't a blue jay, and I can't pretend that his coherence scattering was beautiful.

When I want to write about blue jays, I have access to reams of information. Field guides, encyclopedias, scientific studies, all seconds away from my fingertips on the internet. When I want to write about Grandad, I rely on memories, faulty at best, and on stories half-remembered from childhood. Stories I wrote for myself from pictures in old albums, piecing together threads of memory with photographic evidence. I can learn from the research that's already been done. But there will be no further line of questioning, no further hypotheses to be tested. There are still questions, but there will be no definitive answers.



One winter years ago, while home from college for Thanksgiving break, I built a snowman on the deck. It ended up being chest high, maybe three feet tall. I used seashells, mementos from years of family vacations to the coast of North Carolina now piled in Mom's flower bed, for eyes and buttons. Broken sticks for a mouth and nose, two longer branches for arms, and snapped twigs for a spiky hairdo. I stuck a suet feeder on one arm and a Frisbee full of sunflower seeds on top of its head. Then, I went back inside, stripped off my damp layers, made hot chocolate, and sat at the kitchen table in front of the window and watched. Birds came quickly through the falling snow—juncos, chickadees, cardinals. Birds of my childhood, of Ohio, of home.

I took a picture of a single blue jay, perched in the Frisbee full of bird seed on the top of my smiling snowman. The blue jay is out of focus, blurry through the sliding glass door, but you can see the mouthful of sunflower seed, the bright blue back, the black collar and dark eye. The vivid blue bird, balanced on the snow, about to fly away.



Coda

When I Am Ash



“Mountains are giant, restful, absorbent. You can heave your spirit into a mountain and the mountain will keep it, folded, and not throw it back as some creeks will. The creeks are the world with all its stimulus and beauty; I live there. But the mountains are home.”

Annie Dillard

When I die, I want to be cremated, reduced to ash, my molecules transformed completely to something new. Then, when I am ash, spread me in these places:

Leave me in Ohio, in the woods behind my parent's house where the trilliums grow and where the hickories drop their nuts. Let the blue jays spread their shadows over me, and the deer step softly through me.

Take me to Oregon, to the old-growth forest in the mountains, where I can listen to hermit thrushes at dawn, their song gracefully falling through the mist.

Spread me on the top of Black Balsam in North Carolina, so I can finally be blown away in the weather and know what it feels like to ride the storm.

Leave me in Nepal, on the mountains at the top of the world, where I sat and listened to avalanches and thought of home.

Take me again to Utah, to the desert, and climb me to the tops of sandstone towers. Put my name one last time in the climber's log book, absorbed into the sun-weathered pages. At night, let the wind carry me through Delicate Arch that I may mingle with the Milky Way.

Spread me in the sandhills of South Carolina, deep in the pines, around the base of a woodpecker tree. Let my ashes mix with those from the burns and signal regeneration.

Leave me in Wyoming, where I can touch the Tetons. Let the aspens shade me and the river soothe me. Hide me in the willows, with the nesting warblers and the moose, so I can learn how to be one of them.

Take me again to Nova Scotia, to a moody cobbled beach along the northern coast where I can hear the sea.

Spread me in the Galapagos along the grassy cliffs, where I may repose with the iguanas and watch the albatrosses fly.

Then, leave the rest of me here, in Montana, where I've found the mountains that finally feel like home.