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Killing Things

Listen. There is a place where the vectors of a man and a bird intersect: two miles north of the cabin, along the west bank of the Thelon River in the Northwest Territories, 350 miles northeast of Yellowknife. It happens on a bright June day as the last of the ice blocking the narrows below the cabin gives way and the river rolls on into summer. The trajectories that have brought us to this confluence are complex. The Harris's Sparrow's involves a sixteen-hundred-mile spring migration north from its wintering grounds in Kansas, the fourth in a long and fortunate life. He's a large male—almost forty grams—with a black bib that extends farther onto his belly than in most Harris's Sparrows, and he's adept at surviving the close calls that almost every adult bird will experience. Last January, while foraging beneath a feeder, he narrowly escaped from the sudden swoop of a Sharp-shinned Hawk; in early February he found sufficient shelter and food to avoid freezing to death during a blizzard that swept southeast across the Great Plains and killed several birds in his flock. He has found mates in each of his four breeding seasons, and successfully raised one brood of young—three fledglings in 1987, with one of these surviving through the southward migration and subsequent winter. In June 1986, during his first breeding season, his mate was killed by a Northern Shrike (a blur of white and gray and black cutting around a small spruce and plucking her from the ground as she foraged, his last-second warning call coming too late to allow escape, her final chip of surprise hanging in the still air like a small bell's last note) and her eggs went cold. Last year, he and his mate managed to raise four nestlings until they were eight days old. But then an arctic ground

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squirrel stumbled across the nest, which was well-hidden in a clump of dwarf birch—dumb luck, mostly—and the squirrel killed and ate the young.

This year he returned to his territory on May twenty-fifth, carrying a bit more fat than most males. Within four days of his arrival, he was mated to a two-year-old female who, by the middle of June, had built her nest beneath the branches of a thirty-inch high dwarf birch and laid her clutch of four eggs. Her partner is more vigilant than most males, and relentless in attending to his territory. He patrols its boundaries frequently, watches for predators and intruding males, hangs close to his mate while she forages. Having survived and learned much, he is good at what he does. And so, on the day that I wander into the landscape of his concern, he is quickly aware of my presence. When I unknowingly approach to within thirty yards of the nest, he does not seek cover and silence, as do most species of birds that breed in the area. Instead he rises, as is the habit of Harris's Sparrows, into the tallest branches of a small spruce. There he strings his single-note alarm call—a metallic "chink"—into a long, insistent, and monotonous monologue. With each call, his body shakes slightly. He punctuates his litany of concern with small bows and nervously wipes his bill from side-to-side on the branch where he is perched.

My path intersects his after a longer, more circuitous migration—the three-thousand-mile drive from the Midwest to Yellowknife, a week-long hiatus there, then the charter flight north and east to the Thelon. Since arriving I have established my home range, settled into a routine of research and maintenance activities. On the day that our paths intersect, I spend four hours of the morning in a vain search for nests. After lunch I grab a 0.22 caliber rifle, stuff a box of bullets loaded with birdshot into the pocket of my field vest, and put a scalpel, syringe, plastic bags, and some ethanol in my daypack. I am subdued and only tell Ken, "I'm headed up to North Grove. I'll be back in a few hours."

I walk north from the cabin, into open sedge meadows well beyond the limits of my study area and into a country populated by birds that aren't "mine." I stick to the rocky benches and the margins of spruce islands when I can, seeking out the drier ground and avoiding the muck and tussocks as much as possible. And as always, I watch for bears. I carry the unloaded rifle in my right hand, and keep my mind focused on walking; I am silent even to myself. After thirty minutes of rapid hiking I crest a gentle rise and see a stand of spruce below, ringed by dwarf birch, still leafless in mid-June. The grove sits perched above a steep bank that slopes down to the Thelon, and is bounded to the north by a large creek that drains from a broad basin

to the west. The tundra is tawny-brown, and pockets of snow lie scattered in the lee of the woods and the cutbank of the tributary stream.

I descend to the edge of the grove, stop and load the rifle, check the safety. The sun is deliciously warm on my face, and I remove my windbreaker and stuff it in my pack. I start east, toward the river, hesitate, and for some unconscious reason reverse my course and skirt the west side of the trees. I work around a finger of spruce that projects toward the creek, which is running full with meltwater. I flush a robin, then a tree sparrow, but see no Harris's Sparrows. A Blackpoll Warbler sings once from the grove, and is quiet. And then a black-bibbed bird rises from the ground into the tallest branches of a small spruce, his path a sudden arc that cuts across my peripheral vision.

He is exposed, obvious, backlit against the afternoon sky.

While I was a doctoral student, I spent my summers sunk in the wilderness of northern Canada, where I studied a small songbird, the Harris's Sparrow. Following each field season I returned to the University of Kansas and my graduate student hovel, which was located one floor above the museum of natural history's bird and mammal research collections. As it does today, each collection occupied one half of a floor, or "range," with most of the space given over to housing study specimens. On the bird range these specimens include whole animals in alcohol, skeletons, and study skins. The total number of specimens in the bird collection now runs to about 100,000, while there are about 165,000 on the mammal range.¹

The study skins in the bird collection are stored in white metal museum cases, which are stacked two high, in long, tight rows. Each case in this white steel forest is twenty-eight inches wide, forty inches tall, and forty inches deep; inside are trays containing rows of perfectly aligned specimens, each with its own identifying tag and accession number. Each study skin is stuffed with cotton and lies on its back, with the bill almost parallel to the body axis. The wings are folded against the flanks, and a few of the breast feathers are fluffed over the edges of the wings to give the bird a more "natural" appearance. The legs are crossed below the ankles and secured with thread; the tail feathers are fanned slightly, and a data tag is attached where the legs cross. A small bit of cotton protrudes slightly from each eye. The number of specimens stored in a case varies, depending upon the size of the species that it contains. A case of small songbirds holds roughly four to five hundred study skins, each in its characteristic pose, the symmetrical arrangement of bodies reminding me of rows of corn in a neatly planted field.

Many individuals have contributed the specimens that fill the bird and mammal ranges, but a few stand out as prodigious collectors. Among ornithologists, Max Thompson added about 7,000 specimens to the bird collection, and James Rising another 3,900; Richard Johnston, my dissertation advisor, contributed over 3,000, most of these House Sparrows obtained during his classic 1960s study of rapid evolution in the species. Phillip Humphrey, a former director of the museum, collected 2,500 specimens. As impressive as these numbers are, they come nowhere near to the totals accumulated by several mammalogists. J. R. Alcorn, a professional collector who sold specimens to museums around the country, has 18,140 mammal specimens in the collection—although his field catalog, which lists almost all of the specimens that he collected during his long career, continues to 28,110 and includes birds, reptiles, and amphibians. E. Raymond Hall, director of the museum from 1944 until 1967, had a field catalog that ran to 9,292, although many of his specimens are deposited elsewhere, while thirty-four others contributed more mammals to the collection than did Hall.

Although now there are more stringent regulations about what, where, and when one can collect, new specimens are constantly being added to the trays that layer the storage cabinets like strata of sedimentary rock. The ornithological study skins in these trays shimmer with vibrant colors—the metallic, iridescent greens and deep red of a male Broad-tailed Hummingbird; the exquisite, turquoise blue of a Lazuli Bunting; the brilliant, electric orange of a Blackburnian Warbler; the delicate blend of brown and black flecks along the back of a Harris's Sparrow. There is also a fascinating and aesthetic symmetry to the arrangement of the specimens, which are grouped by taxonomic categories reflecting evolutionary relationships. A tray of North American orioles, family Icteridae, genus *Icterus*, contains a myriad of brightly colored birds, especially among breeding males. Members of the same species and sex resemble one another closely, although there are subtle variations among birds of even the same sex, age, and reproductive status—brighter orange in the belly of one male, less extensive black on the head of another. Closely related species are placed next to each other, an arrangement that helps one *see* the evolutionary relationship between them. For example, Baltimore Orioles, *Icterus galbula*, are placed next to Bullock's Orioles, *Icterus bullockii*, mirroring the way that their breeding ranges overlap in the western Great Plains, where they sometimes hybridize. There are ecotones on the trays, gradations of forms blending into one another: similarity and variability, species after species

laid out in row after row, tray after tray, cabinet after cabinet, their arrangement depicting the flow of life and time.

And if I open a cabinet that contains the museum's series of Harris's Sparrows, which now runs to 384, I can compare individuals from the large sequence of winter birds to those few specimens from the breeding grounds. I can use my calipers and measure beak and wing lengths, look for evidence of molt, and record information on mass, reproductive condition, and age. I can consider larger questions of ecology and evolution, and the relationship between form and function. And if I am in the right mood, I might contemplate the connection between the living Harris's Sparrows that I know from the Thelon and the dead ones that reside in these cabinets, the interwoven paths of the collectors and the collected, the ways in which attitudes about life blend into those about death, and my small role in the process that built this wonderful and beautiful and important and sad collection.

In 1931, when George M. Sutton journeyed north to Churchill, Manitoba to find and describe the "first" Harris's Sparrow nest with eggs, he took his collecting kit with him. On June 16, after weeks of searching, Sutton finally found the nest that he was after, one that his memoirs make clear he had dreamt about since he was a boy:

[...] while marching across an all but impassable bog, I frightened from a sphagnum island underfoot a slim, dark-colored bird. It made no outcry, but from the explosive flutter of its wings I knew it had left a nest. I searched a moment, parting with my hand the tough, slender twigs of flowering Labrador tea. And there was the nest—with four eggs that in the cool shadow had a dark appearance. The mother bird, by this time, was chipping in alarm. I looked at her briefly with my glass. A Harris's Sparrow! I raised the gun, took careful aim, and fired. Marking the nest, I ran to pick her up. Upon my return, the male appeared. I shot him also, for I knew the record would not be complete unless I shot both parent birds. To say that I was happy is to describe my feelings all too tamely. I was beside myself. Shooting those important specimens had taken control. I had been so excited I had hardly been able to hold the gun properly. As I knelt to examine the nest a thrill the like of which I had never felt before passed through me. And I talked aloud! "Here!" I said. "Here in this beautiful place!" At my

fingertips lay treasures that were beyond price. Mine was Man's first glimpse of the eggs of the Harris's Sparrow, in the lovely bird's wilderness home. (122)

Although Sutton's elation apparently had more to do with "Man's first glimpse" of a Harris's Sparrow nest with eggs than with shooting the parents, the first time that I read his account I was appalled by what I saw as his cavalier attitude towards collecting. Yet I knew that Sutton, one of the preeminent ornithologists of the mid-twentieth century, deeply loved birds, and that I was judging his actions from across the divide of time. For it wasn't until the 1960s and 1970s that collecting became less common among professional ornithologists—a function of the growth in environmental activism, increasing concern about declining bird populations, and a disciplinary shift towards research questions less devoted to taxonomy and documenting distributions. Prior to the 1960s few ornithologists would have questioned the need to collect specimens; most would have viewed it as essential to the discipline, and even today the practice remains crucial for certain types of ornithological research.

Fast-forward to 1947, and Farley Mowat, a young zoologist and aspiring author hired to accompany Dr. Francis Harper on an expedition to, in Harper's words, "investigate, inventory and catalogue the wildlife of the southern District of Keewatin in the Northwest Territories of Canada."² They based their operations at Nueltin Lake, an isolated area practically "unknown to science." And "science," as embodied by Harper, was in the form of an old-school zoologist with a PhD from Cornell, circa 1925, awarded for his studies of the fauna of northern Alberta and the southern Northwest Territories. Harper had participated in two collecting expeditions to the region, in 1914 and 1920. In the intervening years he dreamed of returning to the North, but was unable to do so until 1947. Almost from the start of their two-person expedition, Mowat and Harper did not get along, and Harper "dismissed" Mowat after less than six weeks in the field. The two were like sodium and water together, mostly because of personality differences and conflicting expectations about Mowat's role on the expedition. Mowat felt as though Harper had given him permission to act as a semi-autonomous entity, while Harper expected "devotion to common scientific cause," a cause consisting primarily of collecting specimens. Mowat later described collecting trips as "little more than high-grade plundering ventures devoted to slaughtering everything non-human or non-domesticated that came under the gun, in order to produce 'study skins' for deposit behind sealed doors in endless rows of steel cabinets" (5), and from the start his

enthusiasm for the collecting tasks that Harper set him to was less than complete. This feeling grew over the weeks before their final split, which came after Harper ordered Mowat to shoot a Ruddy Turnstone, a brightly colored shorebird. Mowat did the deed, but afterwards vowed that he would “give over being a butcher in the service of science” (100)—although a few days later he did present a Harris’s Sparrow nest with five eggs to Harper, as what was only a temporary peace offering.

Harper returned from six months at Nueltin Lake with 113 mammals and 117 birds, which meant that he collected specimens at a rate of about one animal per day—a good number of deaths, but hardly the product of a “slaughter” from a “high-grade plundering venture”—and small change in terms of J. R. Alcorn’s or E. R. Hall’s lifetime collections. How should I react to Harper’s collection, and Mowat’s revulsion? Although I sympathize with Mowat’s passions, I also believe that Harper’s actions were driven by an equally intense desire to describe and understand the natural world. I have always been drawn to the exploits of the early biologists who explored northern Canada, and returned with specimens documenting the region’s flora and fauna. These were collected, prepared, and transported under arduous and sometimes life-threatening conditions, and they represented something important to those who did the collecting—men like Dr. John Richardson, surgeon-naturalist with John Franklin’s 1819–22 expedition to the wilderness north of Great Slave Lake, who almost perished of starvation during the journey; Roderick Ross MacFarlane, an officer with Hudson’s Bay Company, who between 1859 and 1893 collected over 5,000 specimens from the Canadian north; George Sutton, who spent much of 1929 and 1930 studying the birds of Southampton Island in Hudson Bay, traveling by dog sled and living among the Inuit; and Edward A. Preble, who undertook several lengthy and difficult collecting trips in subarctic Canada.³

Preble’s 1900 journey, which he made with his brother and two assistants, is emblematic of what a scientific collecting trip into the northern wilderness entailed. The men left Winnipeg on June 14 and returned there on September 22, having completed a journey by sailboat and canoe of over 1,200 miles.⁴ Their route took them to Hudson Bay by way of the Nelson and Hayes Rivers, York Factory, and Fort Churchill. From Fort Churchill, Preble proceeded for two hundred miles up the west coast of Hudson Bay, before backtracking to York Factory and ascending the river system leading to the height of land that accessed waters draining toward Lake Winnipeg. The journey involved brutal portages; long sections of upriver travel, much of it, as Preble wrote, “through difficult water” (11); and

arduous, perilous travel along the coast of Hudson Bay, with its strong tides and capricious winds. Preble and his brother collected more than 180 birds, 370 mammals, and thirty one frogs and hauled them to Winnipeg, along a route that few modern-day canoeists, with their lightweight, waterproof tents and clothing, and indestructible plastic canoes, would even contemplate. Men like Preble, MacFarlane, Sutton, and Richardson were tough, committed, competent, and fascinated by the species that they collected. They took their work seriously, felt that it had great value, and made tremendous physical sacrifices to see it through. I admire their accomplishments, both in terms of their scientific discoveries and difficult travels. In some ways, I would like to emulate their work, and look upon the early years of biological exploration in the North as a golden age. Yet my efforts pale before theirs, and certainly the collecting that I did—a total of eighteen birds—was insignificant in terms of numbers, and done for a different purpose.

I collected Harris's Sparrows because I wanted to document the species' diet during the breeding season, and I could not do so by relying on observations of their foraging behavior. Nor would it have been convenient to capture birds and flush their stomachs or administer an emetic—methods with their own costs, in dead or traumatized birds. I wanted to understand their diets because I was interested in how Harris's Sparrows respond to the shifting food base and nutritional requirements that accompany the transition from spring to summer, and from their arrival on the breeding grounds to feeding a nest of rapidly growing, voracious nestlings. Ignoring arguments over the worth of the data that were included in my dissertation and a later journal article—data bought and paid for with the blood of birds—I believe that specimens provide valuable biological information, which cannot be obtained in any other way and often may be important for conservation. In the case of birds, specimens are crucial for studies of taxonomy, distribution, evolutionary relationships, geographic variation, anatomy, reproductive biology, molt and plumage sequences, sex and age characters, development, and toxicology. Without specimens, it may be difficult to identify and designate "units of conservation concern," a process based on identifying morphological and genetic differences among populations. The distributional information obtained from specimens is also valuable in identifying biodiversity "hotspots" and priority areas for land acquisition. Although some of the above information may come from live animals, much of it is best obtained from museum specimens.

Except for threatened or endangered populations, which are protected by law, collecting specimens will have no significant effects on

local populations, let alone regional or global ones.⁵ The few thousand bird specimens added to museum collections each year, which rarely include more than ten specimens of a single species from a locality, will not impact populations of a targeted species, especially when the magnitude of other sources of mortality is considered. In the case of songbirds, and depending upon the species, natural adult mortality rates vary between ten and fifty percent annually; thus, in a population of 5,000,000 adults, anywhere from 500,000 to 2,500,000 individuals may die of natural causes during a year. Beyond natural mortality lie effects due to human agency. In the United States, for example, window collisions may kill upwards of one billion birds a year, while domestic cats may kill somewhere between eighty million and 640 million—hence a biologist friend's bumper sticker, "The only good cat is a flat cat." Deaths from human-induced habitat loss are difficult to estimate, but in the tropics alone as many as 150 million birds per year may die from destruction of rain forests and other habitats.

Because scientific collecting will have no measurable impact on all but the most endangered bird populations, which in any case are protected, any objection to the practice must be based on a moral principle: the right of the individual animal, as opposed to the species, to exist. This moral objection may be countered by utilitarian arguments about the larger worth of collecting specimens. I don't know how either side can really "win" on this issue. It's difficult to balance the utilitarian worth provided by scientific specimens against moral arguments about the taking of animal lives; how does one choose? I happen to think that collecting specimens, if done in a responsible way, can be justified. I have little sympathy for the attitudes of animal rights advocates, other than their basic concern for the pain and suffering of animals. I dislike their moral certainty, ideology, and arrogance, and yet I remain uncomfortable with my own actions, and those of other collectors. Grant that millions upon millions of birds die each year from natural causes and human actions. Grant that relatively few birds are collected each year. Grant that specimens increase our understanding of the anatomy, physiology, ecology and evolution of birds, and that this knowledge could not be obtained in any other way. Grant even that information obtained from ornithological specimens can have valuable applications for conservation. I still remain uncomfortable with scientific collecting. I am not entirely at ease with the attitudes and practices that have provided the specimens deposited in natural history museums throughout Europe and North America. I am not at ease with the 265,000 bird and mammal specimens housed at the museum where I once worked, nor with the

eighteen Harris's Sparrows that represent my small contribution to the collection.

It is not necessarily a matter of the deaths themselves; I believe that these can be justified, as much as we can justify the death of any creature that we are responsible for killing, either directly or indirectly. No. It would be too easy to condemn, from a distance, the deaths that have accrued through the actions of field biologists—deaths promulgated “in the name of science,” deaths that, at least in today's regulated environment, are often as “humane” as possible—while at the same time ignoring or acquiescing to the deaths for which we share a collective responsibility—the lost lives represented by the slabs of prepackaged meat that we purchase at the supermarket, or the invisible deaths connected to the cars that we drive and the homes in which we live. Again, no. It occurs to me that I am most bothered by what I suspect is the refusal of those who collect the specimens to acknowledge, and through that acknowledgement partially atone for, the deaths for which they are responsible. I wonder if J. R. Alcorn ever was haunted by the magnitude of the 28,110 specimens that he collected, and if any of the deaths recorded in the pages of his field catalog ever intruded on his conscience. Did he, in his dreams, ever see ghost armies of mice, shrews, or voles? I wonder if George M. Sutton ever cast a sad and wistful glance over his shoulder at the Harris's Sparrows that he shot at Churchill, “here, in this beautiful place.” I wonder if E. A. Preble ever contemplated the female Gray-cheeked Thrush and two newly fledged young that he collected “in a dense willow thicket July 13” (129–30), at York Factory, Manitoba. And I imagine a young ornithologist, passionate about her work in the jungles of South America and vitally concerned about providing the knowledge necessary to conserve tropical species dwindling towards extinction. I wonder if there are any webs of regret as she removes an antwren tangled in a mist net and places her thumb and forefinger on either side of its sternum and squeezes the breath and life out of the bird. And I wonder if Chris Norment truly confronted the moral complexity of his actions as he aimed his rifle at a Harris's Sparrow perched in a spruce tree and then squeezed the trigger. Did he ever consider the data that came from the eighteen stomachs of the birds that he shot, or from the skeletons that were prepared from the remains, and reflect upon the tradeoffs involved in the equation: this much data for this much death?

It's curious, but what I think about from time to time, when I am feeling least comfortable with collecting, is not the actual act of killing animals. Rather, I contemplate the language that biologists use—that I purposefully have used in this discussion—when

describing their roles in the deaths of animals, whether in the context of collecting specimens in the field or during laboratory-based research. (And laboratory biologists are responsible for many more deaths each year than are field biologists, even if these mostly are “only” animals raised solely for research purposes.) This language suggests a fundamental refusal to deal directly and honestly with the deaths that result from our actions. Commonly used verbs such as “euthanize,” “collect,” “take,” and “sacrifice” are indirect and evasive, and fail to capture the essence of what we are doing; they are the scientific equivalents of “collateral damage.” Each represents the systemic refusal to fully acknowledge and confront death—an ironic situation in a discipline that so highly values accurate description and measurement. Each verb denotes something about our attitudes toward the natural world, and science itself. And by virtue of their inappropriateness, these verbs deny us the possibility of atonement and apology. Better the direct and explicit language of the hunter, and his or her inability to avoid direct responsibility for the deaths of animals, the person who can only “shoot” and “kill” whatever prey he or she is stalking. And so I have tested several commonly used terms as descriptors of my own actions, and laid them next to the bodies of the Harris’s Sparrows that I shot.

“I collected eighteen Harris’s Sparrows.” This is the most common word used to describe the act of killing animals to obtain specimens, and it is the term that I used in the technical paper that I published on Harris’s Sparrow diets. To collect means to bring together; it is from the Latin *legere*, to gather.⁶ Humans love this process—to accumulate the objects of our passions. We collect coins, stamps, pottery tea cups, Japanese woodblock prints, sports memorabilia, nineteenth-century glass bottles, rare books, postcards, toy soldiers, porcelain statuettes, and a myriad other inanimate objects. We collect the peaks that we climb, visa stamps in our passports, rivers that we paddle, races that we run. And in our use of language we make no distinction between a dead Harris’s Sparrow—once a living, breathing creature of heart and blood, sex and sense—and an embossed spoon from Grand Canyon National Park: good to carry home, toss in a drawer and forget about, or alternatively place, carefully and lovingly, in a plush box for all to see.

“I took eighteen Harris’s Sparrows.” This term was used more frequently in the past. For example, in the monograph on his 1900 investigation of the Hudson Bay region, E. A. Preble reported that “a small series [of White-crowned Sparrows], including adults of both sexes and young birds not long out of the nest, was taken July 12 to 14” (121). My dictionary lists thirty-two different meanings for the verb,

which is from the Middle English *taken*.⁷ The first definition seems most appropriate: “To get into one’s possession by force, skill, or artifice,” but we use the word in many ways.⁸ The Montreal Canadians take the Stanley Cup; we take naps, walks, vacations, notes, breaths, seats, bribes, pitches, offense, Calculus, and craps. A storm can take lives, just as a biologist can, but in the context of collecting specimens, the operative idea seems to be the act of getting something, such as a bird, “into one’s possession.” I employed force when I took Harris’s Sparrows, but I am not so certain about skill (I am a poor shot), and I don’t think that artifice applied, either—I had to approach the birds slowly, but they generally were doomed by their stereotypical behavior, which impelled them toward the tops of trees, where they made loud and obvious targets. What bothers me most about describing the “taking” of a Harris’s Sparrow is that the term ignores the transition of an animal from life to death; the verb evades entirely the issue of killing.

“I euthanized eighteen Harris’s Sparrows.” Field biologists generally don’t use this term, thankfully, but laboratory researchers do: “We euthanized one hundred golden hamsters.” Often this is done by placing animals in a container and adding carbon dioxide or ether. One dictionary defines the noun as the “act or practice of ending the life of an individual suffering from a terminal illness or an incurable condition,” while another indicates that the word is derived from the Greek *euthanatos*, or easy death.⁹ Whether we are talking about lab rats or Harris’s Sparrows, the word seems inappropriate—that is, unless the animals were used in an experiment that injected them with a virulent pathogen or toxic chemical, in which case the death might end an animal’s suffering. I doubt that any of the Harris’s Sparrows that I collected suffered from a terminal illness or incurable disease, though. As far as “easy deaths” go, I suppose that it depends upon the method of choice, although scientific organizations such as the Ornithological Council have guidelines for the “humane” care and death of laboratory research animals, or animals killed in the field. These guidelines are meant to minimize pain and suffering, but when collecting birds in the field, this may depend upon an individual’s skill with a gun. I tell myself that most of the Harris’s Sparrows that I collected died quickly and suffered little, as they plummeted directly to the ground after being shot and were almost immediately still—although I am unsure about the two birds that fluttered off into thick brush, and which I never found, or the gut-shot female whose neck I was forced to wring, because she did not die quickly. But I know nothing about how “easy” any of their deaths were.

"I sacrificed eighteen Harris's Sparrows." This is the most interesting euphemism for ending an animal's life, and is another word used by laboratory biologists rather than by field biologists. I also understand that those who work with lab animals often use a slang variant, "sac," as in "We need to sac those thirty mice." This slang version may have developed because we tend to shorten and familiarize frequently used technical terms, but I wonder if "sac" may have arisen partly out of a subconscious desire to create more distance between humans and the animals they kill. Perhaps lab biologists are uncomfortable with the act of killing, and "sac" somehow settles more easily in the conscience than "sacrifice," no matter how necessary the animals' deaths might be for medical or biological research.

Whatever the genesis of "sac," the root word, "sacrifice," is the most enigmatic of all the terms meant to avoid direct acknowledgment of cause and effect. My dictionary gives as the first definition of sacrifice, "The act of offering something to a deity in propitiation or homage, especially the ritual slaughter of an animal or person."¹⁰ A second definition is, "Forfeiture of something highly valued for the sake of one considered to have a greater value or claim."¹¹ Sacrifice is derived from the Latin *sacer*, or sacred—something that is holy, or worthy of religious veneration—which is a curious way to think about science, given its focus on the natural, rather than the supernatural, world.¹² Humans sometimes sacrifice animals in the context of religious worship—goats, lambs, and calves. Mayans and Aztecs once sacrificed the hearts of humans to propitiate the angry gods. God asked Abraham to sacrifice Isaac, but relented at the last moment. We offer symbolic sacrifices of rice, spices, or money, which are often placed upon altars. Soldiers are said to sacrifice their lives (if we are to believe the rhetoric) for their country or some other, greater good, or for their comrades.

So—when a scientist kills an animal, is he or she presenting something to a deity in propitiation or homage? Participating in a ritual slaughter for some holy purpose? The lab manual from my undergraduate cell biology class called for rats to be "sacrificed," so that we could extract enzymes from their livers. Our instructor did this by whacking the animals' heads against a lab bench—quick and effective, although the action hardly calls to mind any sort of ritual worship. ("In the name of Our Father, we offer this rat...") And when I shot Harris's Sparrows, I wasn't offering a sacrifice to the gods or participating in the practice of the holy, any more than J. R. Alcorn's 28,110 specimens were meant as homage to some scientific deity. It might be more appropriate to assert that sacrificing

animals during scientific research means forfeiting “something highly valued for the sake of one considered to have a greater value or claim.” Perhaps, the “higher claim” part of the above statement is defensible in the context of medical research, education, or accumulating knowledge that enhances our understanding of, and assists in conserving, the natural world. Still, I wonder if the lives of the individual animals lost to scientific research are “highly valued.” Were the lives of the rats used in my cell biology experiment highly valued? Were the lives of the millions of birds that reside as specimens in museum collections throughout the world highly valued? Were the lives of the eighteen Harris’s Sparrows that I collected highly valued? And if so, how?

“I collected eighteen Harris’s Sparrows.”

“I took eighteen Harris’s Sparrows.”

“I euthanized eighteen Harris’s Sparrows.”

“I sacrificed eighteen Harris’s Sparrows.”

These sentences fail to accurately describe and acknowledge what I did when I ended the lives of those birds. I want language that is more direct, doesn’t confuse the issue and will not be misunderstood: “I killed eighteen Harris’s Sparrows.” Even more accurately I might write, “I shot and killed eighteen Harris’s Sparrows.”

Or sometimes, in my most bitter and uncertain moments, just after pulling the trigger on my rifle, finding the dead bird (or gazing into the uncomprehending eyes of a wounded bird before wringing its neck) and cutting the stomach from its warm carcass and placing it in alcohol: “I blew the fucking shit out of eighteen Harris’s Sparrows.”

On the Thelon I lived with the knowledge of my deeds—that I had purposefully killed eighteen individuals of a species that I deeply respected, knew intimately, and loved. I lived with conflicting sentiments—anger, sadness, and belief that the deaths of these birds could be justified and that the research collections housed in natural history museums throughout the country were valuable and should continue to grow. I could justify my actions on an intellectual level, yet I desired some sort of absolution—even as I believed that none was truly possible. The best that could be hoped for was an honest appraisal of what I had done, an acknowledgement that began with the use of direct and truthful language: “*I killed eighteen Harris’s Sparrows.*” This language could not atone for the killings, but there is some importance in accepting responsibility for the deaths of those birds, giving thanks for the knowledge they provided, and accepting the cost of this knowledge—while admitting that the objects in

museum cabinets represent something more than “specimens,” inanimate things perpetually devoid of life. Perhaps, it is as the poet John Haines has written about his life in the Alaskan bush: “I cannot trap and kill without thought or emotion, and it may be that the killing wounds me in some small but equally deadly way. Life here is equally in sunlight and frost, in the thriving blood and sap of things, in their decay and sudden death. It can be hard and cruel sometimes, as we are prepared to see it clearly. I put the beast to death for my own purposes, as the lynx kills the rabbit” (82).

For my own purposes, with thought and emotion, wounded in some small way: Thus, on a beautifully warm day in early June, when the air was suffused with light, in the moment before I took aim and pulled the trigger of my 0.22, I admitted that I was about to kill an animal with its own history and personality, an individual who was something more than an “average” Harris’s Sparrow, a bird that was not interchangeable with any other bird of the same age, species and sex. And so I offered up a silent prayer, a quiet apology for what I was about to do. I hoped that there was some value in my confession, in confronting the length and breadth and depth of my impact on the world and on the lives of animals, and the impact of their deaths upon me. I understood that I was doing more than collecting, taking, euthanizing, or sacrificing Harris’s Sparrows; I was doing more than just killing “things.”

As I turn to face the Harris’s Sparrow, the songs of warblers and white noise of tumbling meltwater disappear. The wind and sun on my face are no longer sensible and my world narrows. I hold my breath and sight down the barrel of the gun. There is a sudden buckle of sound and air, and in the brief moment when I feel the kick of the gun against my shoulder the lives of a man and a bird are connected, bound together by a thread of metal.

NOTES

1. All information on the scientific collections at the Museum of Natural History, University of Kansas, was supplied by the mammal and bird collection managers, Thor Holmes and Mark Robbins.

2. Harper’s quotations are from his personal letters, which are housed in the Department of Special Collections, Kenneth Spencer Research Library, University of Kansas. See Norment, 72–75.

3. See E. A. Preble, “Roderick Ross Macfarlane, 1833–1920” (207).

4. Descriptions of Preble's 1900 expedition are taken from E. A. Preble, *A Biological Investigation of the Hudson Bay Region*.

5. Data on bird mortality, and arguments for the scientific importance of collecting bird specimens, are from Remsen, 145–80.

6. "Collect." *Webster's Ninth New Collegiate Dictionary* (259).

7. "Take." *The American Heritage Dictionary of the English Language* (1763).

8. "Take." Def. 1. *The American Heritage Dictionary of the English Language* (1763).

9. "Euthanasia." Def.1. *The American Heritage Dictionary of the English Language* (615); "Euthanasia." *Webster's Ninth New Collegiate Dictionary* (429).

10. "Sacrifice." Def. 1a. *The American Heritage Dictionary of the English Language* (1530).

11. "Sacrifice." Def. 2a. *The American Heritage Dictionary of the English Language* (1530).

12. "Sacrifice." *The American Heritage Dictionary of the English Language* (1530).

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