Professor Carter’s Collection: Amateur Naturalists and their Museums

Edwin Carter was an Episcopalian, a miner, and a passionate naturalist. He drifted west during the Pike’s Peak gold rush, settling down in the mining camp of Breckenridge, Colorado, where he began to hunt and stuff local game. When he died in 1900, probate examiners found more than 3,300 glassy-eyed rabbits, mountain goats, and grizzly bears patiently waiting in his one-room cabin.

At first, Carter collected randomly, indiscriminately. He dragged home bear in the morning and filled his pockets with chickadee in the afternoon. But by 1870, he began to hunt more systematically, intent on building a complete and carefully catalogued collection of Colorado fauna. Each evening, he consulted a few well-thumbed zoology textbooks, took up a stumpy lead pencil and brown wrapping paper, and scribbled down notes on the animals he had shot that day. Each animal merited a separate and individually numbered scrap of paper, which he threaded onto a loop of bailing wire. By the late 1880s, gunny sacks holding thousands of loops of these wrinkled scraps filled the corners of Carter’s cabin.

The animal bodies that banked the walls of Carter’s small abode became the foundations of the Colorado Museum of Natural History, one of the largest natural history museums west of the Mississippi. And the crumpled slips that accompanied these bodies eventually became one of the most complete records of Colorado fauna ever created. Squinting through the dim of his cabin each evening, Carter had managed to compile a scientific census so scrupulously detailed that twentieth-century biologists did not hesitate to use it in their

own work.

Carter’s passion for the natural world was by no means unique. Neither was his ongoing effort to collect and meticulously examine nature’s wonders up close. Though few committed themselves to collecting with such single-mindedness, late-nineteenth-century Americans of disparate circumstances and regions shared Carter’s impulse to explore and accumulate pieces of the natural world.

Their obsessions and compilations found their way into the natural history museums that mushroomed across the United States at the end of the century. Historians have long described wealthy philanthropists and civic boosters as the engines of museum building, but credit for the establishment of natural history museums, especially those built in the American West, should be shared with men and women like Carter. City councils and industrialists funded museums’ brick facades and purchased their showiest specimens, but amateur naturalists—and the carefully tended collections they proffered—were equally important contributors to these new museums.

Fig. 1. Edwin Carter, supervised by some of the hundreds of animal heads he mounted over the course of his life. Photograph by E. D. Peabody, c. 1899. All rights reserved, Image Archives, Denver Museum of Nature & Science. Courtesy of the Denver Museum of Nature & Science, Denver, Colorado.

“Natural Science Knows No Caste”

Americans in the last few decades of the nineteenth century used the descriptor “naturalist” frequently and flexibly, indicating just how inclusive the study of nature was at that time. The label was applied to professional students of nature, who, Adam-like, named and identified animals, plants, and minerals in order to create an encyclopedic catalogue of the myriad forms of nature. But diarists, authors and journalists also used the term to describe serious butterfly collectors, international explorers, government entomologists, woodsmen with a good eye for timber, landscape painters, bird watchers, and sportsmen with deep knowledge of the places they hunted. Nearly anyone who avidly pursued the study of the natural world, past or present, indoors or out,

could be described as a naturalist.

By their own broad standards, most nineteenth-century Americans could describe themselves as naturalists in one way or another. They had to be, given how close they lived to the land. In the 1870s and 1880s, city could not be distinguished as easily from country as it could half a century later, for as writer John Burroughs exulted, “nature, wild and unkempt, comes to its very threshold, and even in many places crosses it.” Even in the nation’s most populous cities, tracts of wilderness, farmland, and densely settled neighborhoods still nestled against one another—Brooklyn, the third largest municipality in the nation, lay just to the southwest of a large primeval forest and was still considered the vegetable capital of the United States. Weather, weeds, and pests had little respect for doors, windows and walls. Across the night skies, both citydwellers and the loneliest homesteaders could see thousands of stars. Animals—sources of transportation, food, labor and clothing—crawled, crept, flapped and plodded through crowded streets and open plains.

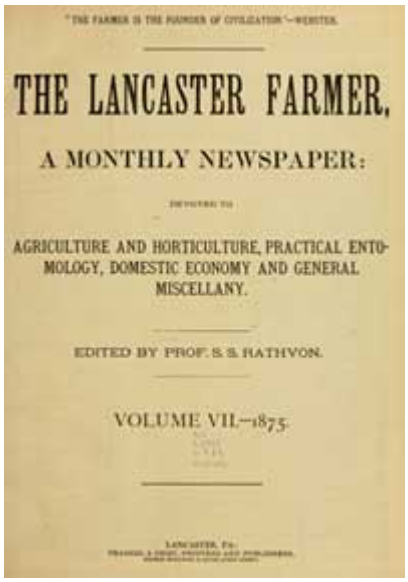
Fig. 2. Photograph of the inside of Edwin Carter’s cabin, Breckenridge, Colorado. All rights reserved, Image Archives, Denver Museum of Nature & Science. Courtesy of the Denver Museum of Nature & Science, Denver, Colorado.

Work required Americans to keep a close eye on the natural world, for most still wrung a living from understanding and manipulating nature. Settlers and farmers kept painstaking records of planting and harvesting dates, crop yields or sightings of predatory animals, and the practice of daily observation inevitably provided them with insights into natural processes and phenomena, and transformed a great many into amateur naturalists. Those extracting natural resources for industrial purposes were no less attuned to the natural world. Their work often required climbing directly into or onto nature, mining or cutting or picking or bending it into some serviceable form they could sell. And the work of the household also demanded knowledge of climate, flora and fauna, for well into the 1890s, most Americans still grew, gathered and ground

bits of nature into medicines, fuel, foodstuffs, and decoration.

Late-nineteenth-century Americans turned to nature for recreation too, for it provided a universally accessible form of entertainment. Seasons provided ice to skate on, fruit to pick, and flowers to gather. Swimming usually involved mud, tadpoles, fish, or leeches. In their leisure time, Americans explored the outdoors in all kind of ways, and often brought their booty home for closer examination or as incontrovertible proof of their exploits. Children petted unclaimed dogs, touched dead birds, and adopted wild animals as pets. Parents rarely blinked when their progeny came home with pockets full of agates, birds' nests, and trembling mice, though they did expect boys and girls to restrict themselves to different provinces of the natural world. Middle-class parents encouraged their daughters to "botanize" and paint local plant life, while fathers of all means gave teenage sons rifles to bring down game for sport, bounty, or table.

Though most Americans learned about the natural world through immediate experience, they also pursued more information about it in more formal fashion. They listened intently as Chautauqua group leaders and lantern-slide lecturers discussed the natural world from a scientific perspective. They leafed through popular magazines and scientific journals, illustrated almanacs and "nature novels," to understand more about the bounty tenderly laid out on porches or parlor tables. Though science was poorly—and infrequently—taught in schools, scientists and educational reformers pushed for better instruction on the topic; by the end of the century, high school students pored over zoology, botany, physiology, and anatomy textbooks, while their younger brothers and sisters collected plants and animals for nature study classes.


THE LANCASTER FARMER,

A MONTHLY NEWSPAPER:

AGRICULTURE AND HORTICULTURE, PRACTICAL ENTOMOLOGY, DOMESTIC ECONOMY AND GENERAL MISCELLANY.

EDITED BY PROF. S. S. RATHVON.

VOLUME VII—1875.

Fig. 3. Agricultural and horticultural journals like The Lancaster Farmer casually combined popular and academic science, and counted both farmers and university-trained researchers among their readers and contributors. The

Lancaster Farmer, vol. 7, no. 8., cover and pp. 113-114. Ed. Simon S. Rathvon, printed by Pearsol and Geist (Lancaster, Penn.: Wylie and Griest, 1875). Accessed from www.archive.org; book contributor LancasterHistory.org. Click on images to enlarge in new window.


The Lancaster Farmer

This public interest in understanding and uncovering the origins, behavior and capacities of the natural environment was hardly surprising. “And why not?” wrote clergyman and entomologist Henry McCook in 1889. “The study of natural science…knows no caste.” Nature, after all, was inseparably entwined with the daily existence of most people, and its study provided many of them with a tremendous source of pleasure. “The only truly happy men I have ever known were naturalists,” mused Dr. Robert James Farquharson to fellow members of the Davenport Academy of Natural Sciences in 1883.

Though the boundaries between amateur and authority, between naturalist and scientist, remained relatively permeable until the twentieth century, science gradually solidified into a professional pursuit in the nineteenth. And as

natural history gave way to biology and Ph.Ds became prerequisites for research positions, naturalists struggled to understand their increasingly uncertain status. By the end of the 1890s, specialized training, elaborate infrastructure, and new methodologies cordoned off many topics from even the most diligent amateurs. Yet a number of amateur naturalists still maintained that anyone—even an itinerant miner in Colorado like Edwin Carter—could make important contributions to the larger body of scientific knowledge through collection and observation.

Professional field scientists hesitated to discourage this kind of thought. Well into the twentieth century, far-flung networks of amateur naturalists with deep knowledge of particular places and habitats were extraordinarily important to the production of scientific knowledge. Many professional scientists acknowledged—some readily, some reluctantly—the enormous overlap between their own interests and practices and those of accomplished amateurs like Carter. And most scientists hoped to fan, not dim, the enthusiasm of young naturalists like sixteen-year-old William Beebe, who confided to his journal that "to be a Naturalist is better than to be a King."

"Agreeable and Instructive Recreation"

Of all the ways of relating to the natural world, collecting was one of the most popular in the late nineteenth-century United States. Collecting afforded "those whose tastes run in that direction a very agreeable and instructive*recreation*, and the means of employing pleasantly and profitably hours of enforced idleness which might otherwise be passed in far more harmful ways," explained Smithsonian ornithologist Robert Ridgway in 1887. Locating desired objects provided considerable entertainment, and once collected, those objects could be studied and swapped.

Collectors found handling the specimens they had amassed to be an intensely pleasurable emotional and physical experience. Ornithologist Frank Chapman, for instance, described the sensation as exhilarating, and admitted to longing for the pleasures of proximity. "Only the bird in the hand will satisfy that desire for intimate, exact knowledge" of the specimen, he wrote in his autobiography, a desire "which obsess[es] the naturalist." His own "intimate and constant association with specimens" was "an endless source of pleasure and information," he recalled, "tinged with the romance of exploration."

Fig. 4. Though ornithological collecting was limited almost exclusively to men in the nineteenth century, bird-watching was a popular recreation for both genders. Frontispiece from How We Went Birds'-Nesting: Field, Wood and Meadow Rambles, by Amanda Bartlett Harris. Illustrations by G. F. Barnes (Boston: D. Lothrop & Company, 1880.) Cairns Collection of American Women Writers. Courtesy of the Department of Special Collections, Memorial Library, University of Wisconsin-Madison.

Best of all, collectors could use objects as springboards for stories, telling tales about how they had obtained particular specimens through adventurous travel or trade, serendipity or scientific discovery. "To spend a night with him," Chapman wrote of a naturalist friend whose interests had taken him to South America, "was almost like a journey to the Amazon. Swinging in a Brazilian hammock with a skin of the Hyacinthine Macaw in my hands, listening to [his] thrilling account of how he had shot this rare bird, the pages of Bates and Wallace acquired a more vivid meaning, and here was firmly planted in my mind a desire to visit the tropics."

Collecting was not only personally gratifying, but was also critical to the professional study of science in these decades. Collections of natural specimens had ballooned in the eighteenth century thanks to the influence of Linnaeus, and swelled again in the mid-nineteenth century, as professional and amateur scientists began to map out the distribution and variation of species in order to trace the physical paths of evolutionary change. Diligent amateur collectors had an excellent chance to expand scientific knowledge, by adding to existing information on the demographics, behaviors, and habitats of existing species or by sending to professional scientists specimens still in need of official "discovery" and scientific nomenclature. Well into the twentieth century, scientists at the Smithsonian and other museums depended at least in part on enthusiastic amateurs to send them the data and specimens they needed for their research. Carter himself donated four ptarmigan eggs to Harvard's Museum of Comparative Zoology in 1879.

Fig. 5. Aided by chromolithography, publishers rushed to produce illustrated volumes on nature and natural history for children. Prang's Natural History was one of the most popular of these series. "Great Blue Heron: Wading Birds," lithograph (20.5 x 13 cm). Lith. and published by L. Prang & Co. Taken from Prang's Natural History Series for Children, vol. 2 (Boston, 1878.) Courtesy of the American Antiquarian Society, Worcester, Massachusetts.

Whether inspired by pleasure or scientific ambition, the impulse to collect bits of nature proved as widespread in the United States as the impulse to study it, and the activity proved similarly democratic. Anyone with access to the out-of-doors could build a collection. In 1875, for instance, a struggling Pennsylvania farmer named Theodore Day, who "never had the means to get what I wanted [and] work[ed] hard for a living," described to his Smithsonian correspondents his "native insects + 150 specimens" as well as the stones and minerals that he had collected in seven states, though he lacked the cases in which to store them. Day also confided that he yearned to "travel some and collect mineral[s], stone, flowers, etc…butterflies, beetles, etc."

People who identified themselves as serious naturalists—amateur or professional—often collected on a much larger scale. Though not especially prosperous, Alfred Webster Anthony, a western mining engineer and avocational naturalist, amassed a collection of 10,000 birds over the 1870s and 1880s. Ferdinand Heinrich Hermann Strecker, a Pennsylvania tombstone carver, accumulated some 50,000 butterflies through travel, trading, and purchase. Despite his ailing health and eventual death at the age of 26, young Duncan Putnam, grandson of the second governor of Illinois, gathered 25,000 insect specimens, representing 8,000 different species.

Collecting had been a habit in the antebellum era, but it became a national addiction in the decades after the Civil War, one enabled by easier travel, more leisure time, and the development of a social and economic culture of collecting. Natural history societies and specimen clearing house catalogues offered specimens for trade or sale throughout the 1870s and 1880s. Ward's

Natural History Establishment in Rochester, New York, was the most prominent of the lot, but Charles K. Reed of Worcester, Walter F. Webb's Natural Science Establishment, the Black Hills Natural History Establishment, and a number of other specimen dealers also advertised in science periodicals until the end of the nineteenth century.

The widespread popularity of collecting allowed nature enthusiasts a way to make a living—or at least pocket money—while indulging in their personal passions. Farmers' sons and other young naturalists sold to neighbors or local merchants whatever they had captured, collected, shot, skinned or stuffed. Sufficiently high demand for specimens also financed voyages to distant lands, for young men easily sold what they had accumulated abroad, paid back their investors with the proceeds, and made a healthy profit to boot.

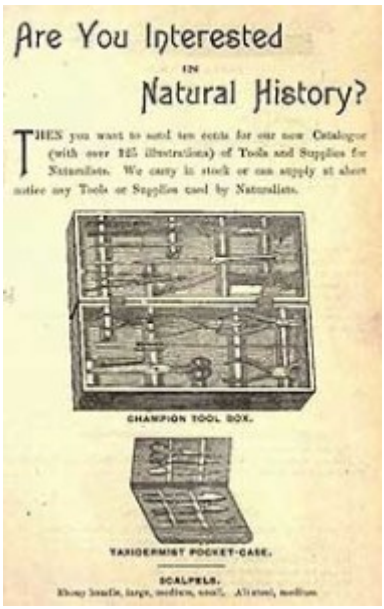


Fig. 6. "Are you interested in natural history?" Advertisement from an issue of C. J. Maynard's The Naturalist's Guide. (Boston: Cupples and Hurd, 1887) pp. 9-11. Accessed from www.archive.org. Click to enlarge in a new window.

Edwin Carter found such joy in collecting that he too structured his life and work around it. The prospecting and tanning that filled his summers played second fiddle to the wintertime pleasures of tramping through the woods, observing, tracking, and taking game. Accompanied by a burro and his dog, Bismark, who pulled a small sled with food and supplies, the tall, thin miner roamed the hills in snowshoes, watching the small movements of the birds in trees and the way the snow dropped from the branches when brushed by scurrying animals. Carter could scan the horizon for hours, looking for any sudden motion in the trees or grass. Once he located an animal or bird, he watched even more closely. Each spring, for weeks on end, he would take his field glasses and lie in the sage studying the strutting of sage-grouse on parade, to memorize their movements.

As residency allowed certain benefits of long-term observation, a rural locale could be a real advantage for a collector, allowing even the most isolated

hinterland naturalists to change scientific understandings of the geographical distribution of organisms. “Results of importance may be derived from the labors of isolated individuals who have no other assistance than books,” wrote Smithsonian secretary Joseph Henry in 1871, and, indeed, serious amateurs living in the nation’s emptiest regions collected, identified and observed thousands of new species during the nineteenth century.

Carter himself doggedly accumulated vast quantities of the same species in order to compare specimens’ dimensions, shape and color, to track demographic and ecological trends, and to explore theories of natural selection on a very small scale. While the uninitiated saw the area’s animal life as static, Carter perceived the changes wrought by season, migration, disaster, or human presence. To understand how ptarmigans’ plumage changed from season to season, he shot one every day for a full year. He observed that the antlers of deer found in regions where the mine tailings formed acidic dunes were more likely to be misshapen.

Fig. 7. “The Carter Museum in Breckenridge, Colorado,” photoprint mounted on matboard (14 x 22 cm), c. 1890s. Courtesy of the Western History Collection, X-917, Denver Public Library.

He quietly told neighbors of his intention to compile a complete record of Colorado wildlife in 1870, and by the 1880s, he gave himself over to this ambition entirely. He collected almost full time, supporting himself by selling mounted ptarmigans and fur rugs to locals and tourists. By the 1890s, he had lost track of how many specimens he had in his home. “I hear of no other collection that excells it except perhaps the Smithsonian,” he wrote his brother in 1890. “My aim will be to make it the best in the world.”

His commitment to cataloguing his specimens was just as ambitious. A few well-used textbooks and pamphlets on taxidermy and natural history and his own experience allowed him to identify, by scientific name, the birds and mammals in his brace. He was meticulous in his record-keeping. Once Carter’s sacks of identification slips had been tidied into a specimen catalogue by Colorado ornithologist Robert Rockwell (an effort made easier by Rockwell’s mother, who ironed every wrinkled paper strip so that they might be readable), naturalists realized the collection was the single most authoritative reference on the state’s wildlife that yet existed. One of the nation’s leading ornithological

journals, the *Condor*, eventually credited the shy miner with collecting a handful of new species.

Fig. 8. “Interior View, Carter’s Museum, Breckenridge, Colorado,” photograph. Courtesy of the Western History Collection, X-914, Denver Public Library.

Carter’s determination to comply with the highest scientific standards was as notable as the scale of his collection, and reports of his loving commitment to scientific precision attracted the public’s interest as much as the contents of his cabin did. Though Carter was “a man of practical, rather than theoretical information,” explained one local writer, compiling and cataloguing his collection had transformed the former miner into a “zoological student” with considerable expertise. Coloradans eagerly claimed Carter as an indigenous scientific savant; those unsettled by science’s professionalization and specialization cited Carter as living proof that a naturalist could continue to stand, if not with, at least alongside, professional scientists.

“Mutual Scientific Interest”

Rightfully proud of his collection, Carter began to guide visitors through his home in the 1880s. The rough-hewn building stood several feet taller than most of the other structures in town in order to accommodate its spectacular contents. All the way up to the rafters, twelve feet above the floor, Carter hung more than 200 heads of elk and deer, buffalo and bighorn. Visitors brushed past thousands of specimens, including at least six full-standing buffalo mounts, forty grizzlies of all ages and color, numerous mountain lions, birds, eggs and nests of every shape and sort, even small mammals, all the way down to a tiny weasel suckling its young. Reporters enthused over Carter’s “splendid full-grown mountings of elk and deer, with branching antlers, so life-like in form that the visitor almost expects to see them bound away on his approach.” Limp and heavy bison, bear, and wolf skins banked the corners, claws and teeth indicating how powerful they had once been.

Carter’s displays were decidedly vernacular, an amalgam of personal taste, scientific principle, and showman’s flair. He made a point of exhibiting every range of color and size within a species, and, guided by scientific impulse, helpfully included deformities and freaks, “to show the departures from the

true type," explained one guidebook. He had a sense of humor as well, and scattered a few oddities among his specimens to prove it. This personal touch succeeded—his guests seemed to find the bear that appeared to be swigging whiskey from a jug quite amusing.

Fig. 9. Though Carter catalogued his specimens along scientific lines, their display was dictated largely by caprice and personal taste, as one of his bird cabinets makes plain. "Bird display in the Carter Museum," photograph. All rights reserved, Image Archives, Denver Museum of Nature & Science. Courtesy of the Denver Museum of Nature & Science, Denver, Colorado.

He never charged admission, asking only appreciation for the animals he had assembled in the cabin's dark confines. In diaries and letters, Coloradans and tourists confided that they were touched by Carter's absorption in his collection. The press marveled at his encyclopedic knowledge of the natural world and his unwavering aim to build a complete collection of Colorado fauna. Visitors and reporters alike began to refer to the bearded naturalist as "Professor Carter," an affectionate expression of respect for his deep knowledge of Colorado wildlife.

Both he and his visitors called the cabin a museum, a word still elastic enough to refer to a space of any size filled with objects intended for study. By the 1880s, the Carter Museum had become a tourist attraction, and Carter regularly led Denverites on day trips and Easterners come west for dry air and cooler climates through his home. State boosters lauded the collection, declaring it a local treasure. Guidebooks and local newspapers urged travelers to see it, declaring it worth a trip on the scenic route of the Denver, South Park, and Pacific. Colorado's governor and Denver's mayor made a special visit in 1892.

Though Carter's museum was exceptional in its scale and public popularity, small private museums were not at all unusual in this period. Many Americans proudly curated and displayed personal collections of natural specimens to

friends or curious visitors. Enthusiastic amateur naturalists placed stuffed birds and animals on mantelpieces, bookshelves or barn rafters. Hunters invited remarks on their prowess by mounting and hanging their kills in their studies. Genteel matrons placed geodes, bird eggs, conches, and pressed plants in glass-fronted whatnots specially made for the purpose of assembling parlor museums.

Fig. 10. This natty visitor to the Carter Museum poses with one of the naturalist's more dynamically posed mounts. On the back wall, Carter has created a theatrical tableau, arranging animals in front of a mountain landscape, complete with a crescent moon dangling from the ceiling. Photograph courtesy of History Colorado, Buckwalter Collection, Scan #20031518, Stephen H. Hart Library, Denver, Colorado.

Like collecting, organizing and displaying natural history specimens were wonderfully social pursuits, and provided regular sources of companionship for many Americans. "Among the strongest ties that bind men together is that of mutual scientific interest," wrote Iowan naturalist W.H. Barris, and throughout the 1870s and 1880s, like-minded folks gathered in fields, farmhouses, and front rooms to contemplate and discuss the intriguing detritus of the natural world. This mutual interest resulted in the development of a collegial, if competitive, network of collectors, and in the foundation of hundreds of small scientific associations in the 1870s and 1880s. Membership rolls in these societies swelled with the growth of towns and cities and the rapid settlement of Western territories. Collectors—both those people actually recovering objects, and those people amassing, categorizing, and displaying them—felt engaged in the pursuit of universal knowledge, and shared common cause amidst the social upheaval resulting from the development of new communities.

The constellation of American scientific societies stretched from Atlantic to Pacific in the late nineteenth century. From 1860 to 1900, Americans established more than 64 scientific societies per decade. Though naturalists

maintained 36 active scientific societies in the United States in 1865, by 1878, at least 141 local and state societies studied natural history in one form or another. By 1884, more than 200 societies had officially devoted themselves to the investigation of science and nature.

Scientific societies tried to ensure the larger public could also experience, even vicariously, the joys and travails of discovery, encouraging citizens to come see their collections and attend related lectures about the gathering of these specimens. The California Academy of Sciences, the Brooklyn Institute, and dozens of other scientific societies made their full collections available to both the studious and the curious in the 1870s and 1880s, lining their walls with specimen-stuffed display cases and drawers. “A large collection has the effect of attracting great attention, and the wandering thousands who are drawn by its exhibition to visit it daily or weekly, enjoy an innocent pleasure that is well worth providing,” observed one member of the Boston Society of Natural History.

Fig. 11. The date of this newspaper cartoon betrays the city’s eagerness to acquire Carter’s collection. The image was published in 1897, two years before the old man agreed to transfer the contents of his museum to Denver’s own. “Denver To Have the Carter Collection,” Denver Republican, 1897. Courtesy of the Western History Collection, DPL X-11395, Denver Public Library.

These societies compiled natural history collections for purposes of regional development as much as for purposes of individual satisfaction and reassurance. Though their members hoped to contribute to broader scientific knowledge by collecting, societies also compiled large collections in faith that their studies of the natural world would eventually contribute to the economic prosperity of their respective regions. “While it is doubtless true that to the earnest student of science the discovery of new truths is its own sufficient reward,” Davenport Academy of Natural Sciences member Charles Putnam wrote in 1886, “still, it is fitting that we should give appropriate consideration to the economic values of these science studies.”

The study and display of such collections also promoted local and regional identity. Americans had a long tradition of collecting and studying the natural phenomena of their particular localities, writing descriptive, sometimes defensive, histories of place. These histories and the collections of regional

geology, flora, and fauna that followed them helped to create unique identities for the smallest rural hamlets. This was particularly true in the the American West, a region extensively surveyed but only recently settled. The study and display of local specimens guaranteed that towns like Breckenridge and Denver, too new and raw to have a well-respected record of human accomplishment, could claim a significant natural history. Such communities rarely hesitated to parlay the stories of their environmental pasts into narratives grander than those possessed by their urban Eastern counterparts.

Fig. 12. “What the Animals Said as They Were Wheeled up Sixteenth Street,” The Denver Evening Post, Wednesday, June 13, 1900, p. 4. Courtesy of the Western History Collection, Denver Public Library.

“The Invaluable Collection of Professor Carter”

The efflorescence of public interest in the natural world in the 1870s and 1880s, combined with a widespread conviction that the study of natural specimens benefited society as a whole, also resulted in the creation of new public museums devoted to the preservation, study, and display of natural history. Loose local coalitions of amateur naturalists, philanthropists, politicians, and civic boosters joined forces to found such institutions or, at the very least, make scientific societies’ displays more welcoming to a broad public.

Public museums required objects and buildings, and passionate naturalists played on the aspirations of politicians and philanthropists to gain funding for both. In New York City, young naturalist Albert Bickmore persuaded the city’s wealthiest to found the American Museum of Natural History by expounding on the grandeur and economic importance of the natural history museums of Berlin, London, and Boston. Pricked by insecurity, department store magnate A.T. Stewart, lawyer Joseph Choate and banker J.P. Morgan hastily assembled a board of trustees, snapped up several magnificent collections from around the world, and commissioned an ambitious building to house them. Boosters in second- and third-tier cities were equally susceptible to this kind of prodding. To overcome their cities’ well-deserved reputations as muddy backwaters, local politicians and museum patrons commissioned fireproof brick

museums.

Regardless of the size of the museum or the surrounding city, curators relied on collections of amateurs. In smaller, newer places, local collectors frequently agreed to stock museums' shelves for free, wanting only the small public glory—and storage space—these squat new buildings provided. But even museums in the nation's largest cities readily accepted the precious finds of children and the donations of local hobbyists, and curators courted the larger collections accumulated by more serious naturalists. Strecker's collection served as the nucleus for the Field Museum's *Lepidoptera* collection, for instance, and still makes up a quarter of its holdings; Webster eventually donated most of his collection to the Carnegie Museum, though portions of it also wound up at the Smithsonian, the American Museum of Natural History, and the San Diego Society of Natural History.

In Denver, throughout the 1880s and 1890s, both amateur naturalists and civic leaders aggressively advocated for the establishment of a natural history museum and the purchase of Carter's collection as its foundation. The city already possessed a fine opera house, a grand hotel, and a train station with an impressive stone clock tower. Dozens of mansions crowned Capitol Hill and ringed the city's verdant cemeteries. A natural history museum would be an obvious addition to these accomplishments, affirming the city's position as a regional capital and proclaiming the progressive nature of its citizenry. Such a museum would not only benefit local researchers and residents with an interest in nature, it would put Denver on the national map. Americans would know that Colorado was no barren wasteland, but a place both refined and democratic enough to provide excellent public museum for its residents. The museum would also, trustees hoped, eventually become a center for information about the area's considerable mineral resources and raise investors' interest in the region.

Fig. 13. "Museum of Natural History, City Park, Denver," photoprint by Louis Charles McClure (19 x 24 cm), between 1908-1919. Courtesy of the Western History Collection, MCC-1935, Denver Public Library.

As Carter's collection lay less than a hundred miles away, its purchase seemed

an obvious step to the city's boosters. Not only was it enormous, it was well known, and promised to attract national attention and funds to the future museum. After visiting Carter's cabin in 1898, Connecticut railroad magnate J. Kennedy Tod was so inspired by the old man's life work that he promised a thousand dollars to help the city secure what Tod described as "the valuable—nay, invaluable—Colorado fauna collection of Professor Carter."

When Carter finally agreed to sell his specimens in 1899 for the considerable sum of $10,000—about $270,000 in today's money—the conditions he set made it clear how deeply he cared about preserving and sharing his collection. He would give over his animals only if the city would erect a fireproof building with sufficient display space, and if he could maintain the collection as a salaried curator for the rest of his life. As snow turned the mountain roads quiet, all parties relaxed into agreement. It seemed as if Denver would have its museum and Carter would have his indoor job.

Then the elderly naturalist fell ill. His illness came as no surprise. To prevent specimens from rotting, nineteenth-century taxidermists routinely coated specimens with a pasty mixture of arsenic and soap, and poisoning was an accepted occupational hazard. Carter, who regularly polished the feathers and hides of his mounts with the preservative and slept each night among their toxic bodies, had survived previous bouts of arsenic poisoning. In 1892, he nearly died after rubbing two pounds of arsenic into a buffalo bull that he had acquired for $500—a mount he later described as his masterpiece. But this time, Carter was frailer and the poisoning more serious. The arsenic, a friend informed the city's museum committee in November, "is now doing its deadly work with him and I am fearful his demise is near." In December, Carter traveled to Galveston, Texas, hoping the lower altitude would improve his health. It did not.

Fig. 14. Though Carter's own museum featured a tableau of mountain goats, most of his specimens could never have made it into this group even if they had survived the moth damage. Where Carter has stuffed his mounts with straw and wire, then propped them upon wooden boards, by the 1900s, taxidermists for the Colorado Museum draped specimen skins over plaster musculature, posing the mounts to demonstrate behaviors typical of the species, as made evident by the

contortions of the center goat scratching behind his ear. “Interior View of the Colorado Museum of Natural History, Denver,” glass photonegative by Louis Charles McLure (21 x 26 cm), between 1901 and 1910. Courtesy of the Western History Collection, MCC-1084, Denver Public Library, Denver, Colorado.

In early February of 1900, he died of apoplexy induced by poisoning. At the behest of his fellow Masons, his remains were shipped back to Colorado and laid out in the still-unfinished State Capitol Building. Though the practice of laying in state in the Capitol was far more common a century ago than it is today, such grand surroundings were an honor, certainly, a tribute to Carter’s contributions to the young state’s future natural history museum.

Yet Carter’s inconvenient death threatened to upend the plans for the museum. No contract had been signed, no checks written or deposited. Worse yet, Carter left no will. The city’s panicked museum committee, stacked with merchant-kings, mine owners, and local politicians, sent its secretary, United States Senator E.W. Merritt, to Breckenridge to pay some very rapid respects, then take the collection back to Denver before relatives contested Carter’s verbal agreement or Denver’s right to his collection.

When the senator arrived in Breckenridge, he didn’t bother with the funeral but instead rolled up his sleeves and began dragging specimens toward the boxcars waiting on the rails of the Colorado & Southern. “It would have looked a little more decent to have deferred the action for at least 48 hours after the burial of the man,” a disapproving Breckenridge newspaper later wrote. Word soon reached the county judge, home sick in bed, and he stopped Merritt’s team from moving the collection to Denver by issuing papers naming a local banker its temporary custodian. After five months of negotiation, Carter’s relatives, estate administrators and the museum committee settled the affair. The city and its not-yet-built museum would receive the corpses of more than 3,300 animals, some mounted, some still waiting for Carter’s arsenic and straw.

Denverites strolling downtown on June 13 that year encountered a peculiar sight. A mile-long parade of wild animals on platform wagons wound uphill from Union Station to the domed, white State Capitol building. A big buffalo and a mountain lion led the procession, “joggling stiffly with the motion of the vehicle,” as one reporter noted. Coyotes, panthers, bears, badgers, elk, deer, mountain sheep, antelope—”all afflicted with the same queer, conscious catalepsy”—followed, jolting as they moved past the hanging cigar signs and the six-story Tabor Grand Opera House. The wagons turned off Broadway, onto Colfax Avenue, before depositing the glassy-eyed stuffed zoo at the doors of the brand-new state capitol building. Then the wagons unceremoniously dumped the Carter collection in the capitol’s basement, to await the completion of the city’s museum building.

Sadly, by the first September of the new century, the Carter collection, dumped in the Capitol building’s basement, had disintegrated into a moth-eaten heap of hides, heads and horns. Denver residents doubted such items could be used to

“encourage and aid the study of Natural Science,” despite the promises of the museum’s charter. Nationally respected naturalists and taxidermists, asked to inspect the collection, admitted skepticism about its possible rehabilitation for display or research purposes. Salvaging even part of the collection would require “the personal supervision of some up-to-date naturalist who is also skilled in the art of taxidermy,” trustee Frederick A. Williams wrote. Even then, he added, “it will take a number of years to put the collection in good shape.”

This report did not faze the museum’s trustees. Many of them had, through will and work, scratched their way up from poverty into enormous wealth, and they brought the same hard determination to their civic duties. Composed of passionate collectors, hunters, naturalists, city boosters, and many who fell into all of these camps, the museum’s trustees remained committed to building a center of scientific research and education. Some trustees donated their own valuable collections of minerals or mammals. Others promised to give more money, and pressed their friends and business partners to do the same. Trustee John Mason, a department store magnate and devoted amateur butterfly collector, magnanimously agreed to oversee the development of the museum’s collections in his spare time. Mason had a vague but ambitious plan for his tenure—his list included rehabilitating Carter’s collection, expanding the museum’s mineral holdings and acquiring some of the large mammals rapidly disappearing from other states in the American West and Alaska.

The task proved more difficult than he had anticipated, and Mason became overwhelmed by the “onerous duties that are inseperable from the position.” To complete and arrange the Colorado Museum’s haphazard natural history collections so they would be useful to both researchers and lay public, board members concluded, they needed to hire a full-time director with professional experience in scientific collecting and museum work instead of an enthusiastic amateur naturalist.

Had Carter survived, he himself would have failed to meet the emerging qualifications to direct or even hold a curatorship in a good natural history museum. He would likely have been treated as a historical curiosity, rather than as an expert with valuable knowledge of the fauna and ecosystems of the Colorado Rockies. Or perhaps not. After all, his catalogue remained valuable for researchers interested in the region well into the 1920s, and field scientists and museum curators continued to rely upon diligent amateurs for decades after Carter’s death. The first generation of curators and administrators in Denver were no snobs, but they were eager to build an institution that met the museum world’s emerging professional standards. It was unclear what role people like Carter should play in the increasingly striated, specialized worlds of science and museum work.

Carter himself became a Colorado legend for reasons that had little to do with his actual contributions to zoology or even to the establishment of the Colorado Museum. He became an icon of a time past or perhaps one simply

imagined, one where even a bearded miner living in the wilderness could add to scientific knowledge through a Victorian combination of determination, self-discipline, and love for nature. Whereas mid-nineteenth century researchers like Spencer Baird had based their research on Colorado zoology upon reports by explorers like Zebulon Pike and surveys obtained by the Pacific Railroad, by the 1870s, a handful of zoologists "journeyed thither, collected their material, and then returned to their homes in the East, there to arrange, publish, and discuss before learned bodies, their new-found knowledge," according to ornithologist Frederick C. Lincoln. Others, "held by the primeval 'call of the wild,' remained to study and observe more closely the creatures they found about them," and Carter, Lincoln maintained, was among them. Carter was no scientist, but tourists, boosters and a willing press lionized the naturalist as a person swayed by an even higher cause. They gladly trumpeted his work as a profound and glorious oddity, one that testified to the spirit of Colorado, or democracy, or humanity, depending upon what was needed for their story at the time.

Sadly, little of Carter's collection actually made it into the museum's halls. Ravaged by insects during their tenure in the Capitol Building, outpaced by new methods of taxidermy, most of his mounts no longer met professional standards for display specimens. Even if they had remained intact, they would have been deemed unsuitable as scientific or display specimens—while a bear holding a jug of whiskey might have appealed to the visitors of Carter's own museum, the museum workers at the Colorado Museum of Natural History considered such mounts to be grotesque symbols of an amateurism they were eager to escape. Nonetheless, the few specimens that made it into the museum served as reminders of the strong national tradition of amateur naturalism in the second half of the nineteenth century. Despite the sad fate of Carter's own collection, the contributions of amateur naturalists proved as central to American museum building as the more frequently acknowledged impulses of social reform, cultural philanthropy, and civic aspiration.

Further Reading:

The John Burroughs quotation can be found in Robert Kohler's superb *All Creatures: Naturalists, Collectors and Biodiversity, 1850-1950* (Princeton, 2006); McCook's words in his own *Tenants of an Old Farm: Leaves from the Note-Book of a Naturalist* (New York, 1889); the Farquharson in *Proceedings of the Davenport Academy of Natural Sciences* 3 (1883): 1; and the Beebe quotation in Carol Grant Gould, *The Remarkable Life of William Beebe: Explorer and Naturalist* (Washington, D.C., 2004).

There are several excellent studies of amateur naturalists and collectors in the late nineteenth-century United States—standouts include Kohler's *All Creatures* and his subsequent article "From Farm and Family to Career Naturalist: the apprenticeship of Vernon Bailey," *Isis* 99 (March 2008): 28-56; Mark Barrow's *A Passion for Birds: American Ornithology After Audubon* (Princeton, 1998), from which the Ridgway quotation is drawn; W. Conner

Sorensen, *Brethren of the Net: AmericanEntomology, 1840-1880* (Tuscaloosa, 1995), and Elizabeth Keeney's *The Botanizers* (Chapel Hill, 1992). William Leach's forthcoming book, *The Butterfly People: An American Encounter with the Beauty of the World,* promises to be an important addition to this literature, and will explore the history of Strecker's collection in more depth. Naturalists often wrote memoirs about their experiences in the field or museum; I've borrowed several quotations from Frank Chapman's *Autobiography of a Bird-Lover* (New York, 1935), which remains one of the best. On the history of naturalists and natural history more generally, Donald Worster's wonderful *Nature's Economy: A History of Ecological Ideas* (New York, 1977) and Paul Farber's brief but exceptionally clear *Finding Order in Nature: The Naturalist Tradition from Linnaeus to E.O. Wilson* (Baltimore, 2000) remain classics in the field.

On the more communal aspects of collecting and the study of natural history, Mark V. Barrow's "The Specimen Dealer: Entrepreneurial Natural History in America's Gilded Age," *Journal of the History of Biology* 33 (August 2000): 493-534, and Sally Kohlstedt's "Parlors, Primers, and Public Schooling: Education for Science in Nineteenth-Century America," *Isis* 81 (September 1990): 424-445, are both terrific reads. The quotations from Day and Henry can be found in Daniel Goldstein's 1989 Yale dissertation, "Midwestern Naturalists: Academies of Science in the Mississippi Valley, 1850-1900," a useful source of information on collectors' networks of correspondence and the establishment of scientific societies in the Gilded Age. The quotation by Putnam can be found in the 1886 President's Annual Address to the Davenport Academy of Natural Sciences, and the Barris quotation is drawn from Victoria Cain, "From Specimens to Stereopticons: The Persistence of the Davenport Academy of Natural Sciences and the Emergence of Scientific Education,"*Annals of Iowa* 68:1 (Winter 2009): 1-35.

On the development of natural history museums in the late-nineteenth-century United States, see, among others, Keith Benson, "From Museum Research to Laboratory Research: The Transformation of Natural History into Academic Biology," in *The American Development of Biology* (Philadelphia, 1988), from whence the quotation about the Boston Society of Natural Science is drawn, and Sally Kohlstedt and Paul Brinkman, "Framing Nature: The Formative Years of Natural History Museum Development in the United States," *Proceedings of the California Academy of Sciences* vol. 55, Supplement 1: "Museums and Other Institutions of Natural History: Past, Present and Future," (October 2004): 7-34.

Information on Edwin Carter and the founding of the Colorado Natural History Museum can be found in Frederick C. Lincoln, "In Memoriam: Edwin Carter," *The Condor*, 31 (Sept-Oct, 1929): 196-200; Kris Haglund, *The Denver Museum of Natural History: The First Ninety Years* (Denver, 1990); and the archives of the Colorado Museum of Natural History (CMNH), now housed in the Denver Museum of Nature and Science. All quotations about and by Carter can be found in the biographical file on Carter in the CMNH archives or in the digitized archives

on http://heritagewest.coalliance.org. The Breckenridge Heritage Alliance renovated Edwin Carter's cabin in 2008 and 2009, and it now features interactive exhibits and a film chronicling Carter's life and legacy, as well as a hands-on taxidermy workbench and children's room.

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