

A white-throated sparrow collected from Mount Desert Island by Henry Spelman on July 31, 1882. Jennifer Steen Booher photograph courtesy of the Museum of Comparative Zoology, Harvard University, ©President and Fellows of Harvard College

Searching for Spelman's Birds

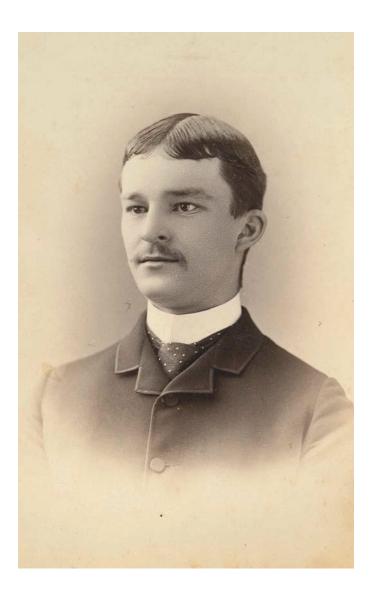
By Catherine Schmitt and Rich MacDonald

No man who concerns himself with birds can do so without having, or developing, an affection for them.

- Robert Henry Welker, Birds and Men

The birds are real. Feathered skins reshaped with cotton stuffing, they are nearly whole. And vibrant: bright orange crowns, yellow rumps, hints of iridescence in the blue, downy fluff of a sandpiper chick, rusty-tailed hermit thrush, bright yellow bellies, round white spots on a black back. Their legs are crossed, tied just above the feet with wire and tags printed with "Collection of Henry Spelman." Beneath, in handwritten script, are the scientific names of the birds and the locations where they were collected between 1880 and 1883 on Mount Desert Island, Maine. In the quiet air of a Harvard basement, their song reached across a century and more to pierce the silence with their story.

Henry Spelman was a founding member of the Champlain Society, a group of Harvard students who surveyed the Mount Desert Island environment in the 1880s. The society kept daily records of their activities, the flora, fauna, geology, weather, and other natural characteristics they observed and sampled. The logs, held by the Mount Desert Island Historical Society, have been the subject of study



Henry Munson Spelman, ca. 1884. Courtesy of Harvard University Archives



Members of the Champlain Society at Camp Pemetic on the shore of Somes Sound, 1881. Henry Spelman is second from the left, seated and holding a shotgun. Photograph by Marshall Slade, Courtesy of Northeast Harbor Library Collection

and writing for one of us since 2009. Specimens collected by the ornithology department were described in the logbooks, but their whereabouts were unknown. We wondered, could they still exist?

Henry Spelman arrived with the first camping party aboard the yacht *Sunshine* on July 4, 1880. The young men set up camp on the shore of Somes Sound in Northeast Harbor, Spelman sharing a tent with Sam Eliot, younger brother to the Champlain Society "Captain" Charles Eliot. Establishing camp was hard work, and prevented the members from working on their "specialties"—except for Spelman, who shot a downy woodpecker, his first specimen from Mount Desert.

Nearly every day thereafter, Spelman went out with his shotgun, on foot and on the Champlain Society's yacht *Sunshine*, taking what birds he could: "snowbirds" (dark-eyed junco), warblers, flycatchers.

He shot a great blue heron, gulls, and terns. He wrapped the birds in sheets of newspaper, and placed them head-down in a bag slung over his shoulder. On nights and rainy days, Spelman cleaned his gun and tended to his specimens, skinning the birds and stuffing the skins with cotton.²

When Spelman left camp for Boston at the end of July, he carried a box containing twenty-two skins and four unstuffed birds, including those of the:

- · black guillemot
- · common nighthawk
- · downy woodpecker
- · bay-breasted warblers
- · yellow-rumped warblers
- · Nashville warbler
- · Canada warbler

- · yellow-bellied flycatchers
- · dark-eyed juncos
- golden-crowned kinglet
- · red-breasted nuthatch
- · common terns

All of these species were considered common in the Mount Desert Island area at the time.³

Spelman's work was carried on for the rest of the summer of 1880 by Charles Townsend, who joined camp in early August and quickly added to the list.⁴

The lives of humans and birds have always been intertwined. Excavations at Native American shell middens reveal that birds were part of the diet of Wabanaki people for thousands of years. Birds are prominent figures in Wabanaki culture, including Wuchowsen, the giant mountain bird spirit whose wings make the wind. Loons, messengers of Gluskap, warn of impending danger or death. Snowy Owl ensures the rivers continue to flow. The Pileated Woodpecker, "May-May," advises Gluskap in the Dawnland's early days.⁵

The wondrous abundance and diversity of birds on the continent was noted by European visitors, who sent home written reports of their observations. Immigrant John James Audubon may have been the first ornithologically-minded naturalist to visit Maine, when his family traveled to Dennysville in 1832. It is not clear from Audubon's journals if they stopped at Mount Desert. In his writings, Audubon mentioned that petrels and pinnated grouse lived on Mount Desert Island, but some of this information was provided by other observers.⁶

While there had long been interest in the unique natural history of North America, popular interest expanded greatly after the Civil War. With their color, relatively small size, and abundance, birds were popular among collectors, both as a resource to be harvested and as creatures of beauty and wonder. Collecting birds also required the use of a rifle, which had rustic and nostalgic appeal. Meanwhile, the number of local and state societies dedicated to natural objects increased. For example, in 1873 America's first society dedicated to birds was formed: the Nuttall Ornithological Club. The club was a space where men (women were not permitted to join) could gather and discuss bird sightings, bird names, and bird behavior. They poured over Audubon's Birds of America; they discussed the future of their not-yet-profession. This interest in birds also spawned numerous publications focused on birds, including Forest and Stream (founded in 1873) and Ornithoogist and Oölogist (1875).7

Henry Munson Spelman's interest in birds began before he entered Harvard College in 1879 at the age of seventeen. Born in Cambridge, Massachusetts, his father was president of Mount Auburn Cemetery, an early garden cemetery designed to provide bird habitat. At age sixteen, Henry Spelman was collecting birds from around his home and beyond. He was one of the youngest and most active members of the Nuttall Ornithological Club.⁸

Spelman wielded his gun as head of the Champlain Society Ornithology Department. In photographs from the time, he is wearing what looks like a sailor's cap, his short wide eyebrows give his face a look of permanent surprise, his ears are always listening for a bird call or song.

Following his movements through the pages of the logbooks and class records in the Harvard University Archives, the question continued to haunt us: had Spelman's Mount Desert Island specimens survived? If so, where were they?

Back at Harvard for the fall semester, Spelman joined his fellow Champlain Society members to share the results of summer work and socialize. As students at Harvard, where the Museum of Comparative Zoology (MCZ) was one of the leading natural history institutions in the country, members of the Champlain Society were exposed to the latest scientific thinking. For reference, they would have used the *Check List of North American Birds* by Elliott Coues, and *Nomenclature of North American Birds* by Robert Ridgway, the only published guides available at the time, although they also would have had copies of Joel Asaph Allen's 1878 "A List of the Birds of Massachusetts."

Natural history had finally fragmented into disciplines (a trend evidenced early on by the Champlain Society's organization into "specialties") and was shifting from taxonomy toward more experimental biology. However, the Museum of Comparative Zoology, especially the Bird Department, remained oriented toward collecting, describing, naming, and classifying organisms, and there was no such job title as "ornithologist." ¹⁰

Occupied as ever by the astounding diversity and abundance of birds, scientists still had much more to learn about birds: how they came to fly, the origin of feathers, how they navigated on migration. Spelman's collecting was about inventory and documentation.

This persistent focus on lists of species and locations can be seen in Spelman's report for the summer of 1880, which was read before the Champlain Society the following May. He noted that the birds they found were different between Boston and Mount Desert. He discussed finding the tarsus (foot bone) of a wild turkey in a shell heap (a Native American shell midden) on Manchester Point. Turkeys had been extirpated from New England by 1880, and the find—showed to Joel Asaph Allen at the Museum of Comparative Zoology, and to Jeffries

Wyman at the Peabody Museum—was evidence that the birds once ranged farther north than previously believed.¹¹

The logbooks make no mention of specimens being kept in storage, or given to Harvard or to the Boston Society of Natural History. But the pages do tell that Spelman, and Townsend, kept up their study of birds.

The next summer, Spelman again sailed to Northeast Harbor with fellow Champlain Society members at the end of June (Townsend did not go to camp in 1881). Notes about Spelman's specimens included more "sea pigeons" and warblers, and also petrels, terns, sandpipers, and a hermit thrush. By August 1, Spelman had stuffed about ten birds. 12

In 1882, Spelman and Townsend both returned to Maine and worked together, this time from the Society's new camp at Asticou. The notes from this year were a bit more illustrative of the effort they expended and their commitment to science.¹³

July 14: "The day began early for Townsend who at about 4 A.M. shot a small gray bird which had waked him by its unusual note. The other members of the camp, however, except Clark, were not aroused even by the report of the gun." ¹⁴

July 31: "Spelman was rowed to the point at the entrance of the harbor and spent the forenoon tramping after birds. In the afternoon, he did some more



A magnolia warbler collected from Mount Desert Island by Henry Spelman in the early 1880s. Jennifer Steen Booher photograph courtesy of the Museum of Comparative Zoology, Harvard University, ©President and Fellows of Harvard College

tramping and got the mail. No birds, but considerable fatigue. Townsend divided the day between birds and marine invertebrates."15

August 1: "To aid Spelman in carrying out his resolution to become industrious on the first of August was sufficient excuse for the whole camp to take themselves to the [rented sailboat] 'Junco' to carry the above named gentleman and Townsend to South West. They shunned the town itself and struck boldly across the country to Bass Harbor with their guns and with cartridges enough to do a great deal of shooting. There were too many hay makers about, however, for sport, and, add the fact that the marshes were covered by the high tide, they felt themselves lucky in bagging one beach duck." ¹⁶

Their list for 1882 included flycatchers, warblers and other forest songbirds, a broad-winged hawk, black-crowned night-heron, and "peep." ¹⁷

Spelman returned again and again to Mount Desert, and participated in nearly every meeting of the Champlain Society. In 1884, the year he graduated from Harvard, he was elected vice president. Townsend, though he did not return to camp, also continued to attended Champlain Society meetings and events.

As new, younger members joined the Ornithology Department, Spelman showed them how to stuff birds, and kept ongoing records of specimens and observations.

The Champlain Society's list of bird observations for 1880–1883 includes ninety-nine species and notes on species frequency and occurrence on Mount Desert Island. The list includes species not specifically noted in the logbooks—birds that were heard but not seen, some seen but not shot. Somehow, the list ended up in the hands of Arthur Norton of the

Portland Society of Natural History, and a typed reproduction found its way into the archives at Acadia National Park, where we found it while conducting research in 2015. The list is referenced by Francis H. Allen, who used an expanded version from 1891 to compile "A Preliminary List of the Summer Birds of Mount Desert Island, Maine" around 1900.¹⁸

But what about the actual specimens? Finally, in May 2016, one of many internet searches employed the right key words, and turned up a database of biodiversity records. A query returned a table of specimens collected from Mount Desert between 1880-1882 by Spelman and Townsend. As gratifying as it was to find the records, we still did not know if the *actual* specimens had survived. But we finally had enough hard data to confidently contact Harvard, and a quick response confirmed that, yes, the specimens were in the collection of the Museum of Comparative Zoology, the very same ground where Spelman would have studied more than a century ago!

The birds are real—in a basement, down a hallway, in a room crowded with tables and desks and biologists at work. Museum assistants had retrieved the specimens and arranged them on a large tray. Even in the harsh fluorescent light, the birds are brilliant. They are not dusty, nor dim. The barred pattern on the nighthawk, the webbing of the guillemot's feet, the talons of the hawk are as real today as they were then. It is difficult to describe the feeling of holding one of Spelman's birds. Like sound or

The Champlain Society posed for a photograph near the Museum of Comparative Zoology at Harvard in May, 1881. Spelman is in the back row, second from the right, seated next to Charles Eliot. Charles Townsend is seated second from the left, with sideburns and a bow tie. Mount Desert Island Historical Society



smell, the sense of weight, however slight, can transcend time to embody what before had been only story.

The tags attached to the birds' feet contain clues about their provenance, corrections of scientific nomenclature and numbering systems that indicate they came to the Museum in the early twentieth century.

Both Spelman and Townsend maintained a lifelong interest in birds, even after they went on to careers in law (Spelman) and medicine (Townsend). Ornithology remained reliant on less scholarly "amateurs" from around the country, and thus Spelman was able to participate in the field's scholarship and enjoyment. He remained connected to the Nuttall Ornithological Club

and to the Museum of Comparative Zoology.¹⁹

Further research in the Museum of Comparative Zoology archives suggested that Spelman had given his specimens to William Brewster. Brewster was in charge of birds at the Boston Society of Natural History, a co-founder of both the Nuttall Ornithological Club and American Ornithologists' Union, and succeeded Joel Allen as curator of birds at the Museum of Comparative Zoology in 1885. However, Spelman kept a private collection of birds, which was moved to Harvard in 1919. Townsend likely kept his specimens for a time and then gave them to the Boston Society of Natural History, which eventually transferred its collections to Harvard as well.²⁰

By the twentieth century, the practice of killing birds for private, personal collections was on the wane. The hundreds of thousands of specimens in museum collections made it unnecessary for



Spelman's birds, along with those collected by Charles
Townsend. Jennifer
Steen Booher
photograph courtesy of the Museum
of Comparative
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College

anyone interested in birds to shoot them in order to study them. Photography, too, was becoming a popular way to document bird observations.²¹

Another reason for the end of collecting bird specimens was increasing demand for protecting birds. As birds were hunted for meat and plumage, the first Audubon society emerged in response in 1886 with members pledging "not to molest" birds. In 1896, Harriet Lawrence Hemenway of Boston finally read enough about bird killing to organize her friends (including Maine writers Sarah Orne Jewett and Celia Thaxter, mother of Champlain Society member Roland Thaxter) into what became the Massachusetts and then National Audubon Society.²²

Spelman and Townsend, through their involvement in the Nuttall Ornithological Club, would have been aware of—and likely sensitive to—these concerns.

Birds were always on Spelman's mind. He took advantage of opportunities to get out into the wilderness on the outskirts of Boston, but, by age forty, his identification skills had admittedly gotten "rusty." Spelman remained in touch with Charles Townsend, who also was very active in the Massachusetts bird world. Aside from vacations at Ipswich and two trips to Labrador, Townsend felt stuck in the city, where "English sparrows are about the only birds I see."²³

As the specimens were kept dry and carefully stored away at Harvard, the Champlain Society Ornithology Department's legacy was continued in the Mount Desert Region, mostly by volunteer "amateurs," many of whom were women: Eleonora Morgan, Margaret Bodine, Helen C. Gilbert, Ethel Anthony, Marion Pellew, Cordelia Stanwood, and Barbara Patterson. Eleonora Morgan published her observations in 1928. Later books covering Mount Desert Island's birds include that of Carroll Tyson and James Bond, who published a small volume on the birds of Mount Desert in 1941, which was continually revised by Bond and others. Mount Desert Island remains a popular destination for observing birds today.²⁴

Spelman's preserved birds and notes provide a glimpse of how bird populations and habitats have changed in the last 137 years.

Certainly, observational data suggests that many of the birds they saw are less abundant today, including common nighthawk, yellow-bellied flycatcher, bay-breasted warbler, and Canada warbler. Whereas Charles Townsend could shoot forty "peep" on Cranberry Island and thirteen yellowlegs in the Bass Harbor marsh in a single day, these numbers would be high by today's bird-watching standards. These changes in abundance are reflected by national and global trends: one-third of North American bird species are in a state of decline, and, globally, 13 percent of bird species face extinction risk. Steady development on Mount Desert Island coupled, with the Fire of '47, have eroded coniferous forest habitat.²⁵

At the same time, some birds such as black guillemot, double-crested cormorant, and various gulls—seabirds living on islands that encounter less human activity now than they did in the past—are more common. Birds such as black-capped chickadees, the red-breasted nuthatch, the dark-eyed junco, and the white-throated sparrow remain ubiquitous.

All the while, as the landscape of Mount Desert Island changed, Spelman's birds lay still and silent in a drawer in a basement in Cambridge, their feathers smoothed, their feet curled, their eyes empty. Yet still they seem so close to life, so near to their Maine home, where spruce forests and alder thickets ring with the song of their descendants and new generations of students take to the woods and waters in search of birds.

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Rich MacDonald is a lifelong birder, naturalist, and field biologist who has studied boreal birds and waterbirds. Co-owner of The Natural History Center in Bar Harbor and a Registered Maine Guide, he leads bird tours throughout Mount Desert Island, North America, and beyond.

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- 1. Catherine Schmitt, "Visionary science of the Harvard 'Barbarians," *Chebacco* 15 (2014):17-31.
- 2. The provenance of Spelman's shotgun is unknown. MacDonald: "Naturalists of his day generally used a smooth-bore collection gun—apparently, these somehow dispersed shot differently than the more typical 'rifled' guns, making for a cleaner kill retaining a higher quality skin." Description based on common practice of the time; see A. Larsen, "Equipment for the field," in Cultures of Natural History, ed. N. Jardine, J.A. Secord, and E.C. Spary (New York: Cambridge University Press, 1996), 358-378; Although the Harvard Museum of Comparative Zoology's guide to collecting stated: "A few specimens of each species can be skinned, but most of the birds should be preserved in alcohol," Spelman and Townsend appeared not to have followed this advice, perhaps because stuffed skins were easier to prepare and transport from their relatively remote field site; See Museum of Comparative Zoology, "Directions for Collecting Objects of Natural History," in Walter L. Burrage "Scrapbook, 1878-1883," Harvard University Archives.
- 3. Of the species on Spelman's list from 1880, baybreasted warbler is now a rarity on Mount Desert Island.
- 4. Charles Wendell Townsend, born in Boston and two years older than Spelman, also began collecting while a teenager and was one of the younger members of the Nuttall Ornithological Club. With the aid of "The naturalist's guide in collecting and preserving objects of natural history," he hunted ducks and collected songbirds with his brother and learned to skin and stuff birds. Glover M. Allen, "In Memoriam: Charles Wendell Townsend," *The Auk* Vol. 52 No. 3 (1935): 227-232; C. J. Maynard, *The Naturalists Guide in Collecting and Preserving Objects of Natural History* (Boston: James R. Osgood and Company, 1873).
- 5. See H.E. Prins, and B. McBride, Asticou's Island Domain: Wabanaki Peoples at Mount Desert Island 1500-2000, Acadia National Park Ethnographic Overview and Assessment, vol. 2 (Boston: National Park Service, 2007), 505-516 and references therein; J. Nicolar, The Life and Traditions of the Red Man (North Carolina: Duke University Press, 2007); Native American Legends and Folklore, accessed March 18, 2018, http://www.native-languages.org/legends.htm.

- 6. The pinnated grouse is now known as the greater prairie-chicken. It is thought that the Mount Desert Island report was of a now-extinct subspecies once found along the East Coast, including Nantucket, Martha's Vineyard, and Mount Desert Island; For Audubon, see "John J. Audubon's Birds of America," Audubon Society, accessed December 13, 2017, http://www.audubon.org/birds-of-america; "The Labrador Journal" in Audubon and His Journals, vol. I. (New York: Charles Scribner's Sons, 1897); John James Audubon, The Audubon Reader, ed. Richard Rhodes (New York: A. A. Knopf, 2006); John James Audubon, Ornithological Biography, vol. 3. (Edinburgh: Adam & Charles Black, 1835): See also Rob McCall, "Grand, wild, and terrific: John James Audubon and his travels through Maine." Maine Boats, Homes & Harbors 141 (2016).
- 7. A. Larsen, "Equipment for the field." On Nuttall Club, see: Friends of Mount Auburn *Ornithologists and Benefactors of Birds at Mount Auburn*, Cambridge, 2013; William E. Davis, Jr., *History of the Nuttall Ornithological Club: 1873-1986*, (Cambridge, MA: Nuttall Ornithological Club, 1987); During its early years, the fledgling Audubon movement had several fits and starts as state organizations, eventually to become organized nationally; see https://en.wikipedia.org/wiki/National_Audubon_Society.
- 8. Specimens, see "MCZBASE: The Database of the Zoological Collections," Museum of Comparative Zoology, Harvard University, accessed December 13, 2017, http://mczbase.mcz.harvard.edu; The Museum has 235 specimens attributed to Spelman.
- 9. Scott Weidensaul, *Of a Feather: A Brief History of American Birding* (New York: Harcourt Publishing, 2007), 127-132; An official, national scientific "checklist" of birds was not published until later, when members of the Nuttall Ornithological Club established the American Ornithologists Union in September 1883 and took on as their first task the publication of an official checklist of birds. The Champlain Society members were also exposed to contemporary culinary trends: Harvard special event menus from the period included "English snipe," "golden breast plover," and "broiled upland plover," in "Records of the Class of 1884," Harvard University Archives.

- 10. M. V. Barrow, "Gentlemanly specialists in the age of professionalization: The first century of ornithology at Harvard's Museum of Comparative Zoology," *Contributions to the History of North American Ornithology*, ed. W.E. Davis Jr. and J.A. Jackson, (Cambridge, MA: Nuttall Ornithological Club 1995), 55-94; *Memoirs of the Nuttall Ornithological Club*, 12, (Cambridge, MA); See also Harvard University Museum of Comparative Zoology, "Ornithology Department," accessed December 13, 2017, http://www.mcz.harvard.edu/Departments/Ornithology/history.html.
- 11. "1880 Champlain Club Camp and Yacht 'Sunshine' Logs," Mount Desert Island Historical Society; C.W. Townsend, "Evidence of the former existence of the Wild Turkey at Mount Desert Island, Maine," *Bulletin of the Nuttall Ornithological Club*, 6, no. 1:60 (1881).
- 12. "1881 Champlain Society Records Camp Log with Photos" and "1881 Champlain Society Meeting Records and Yacht's Log," Mount Desert Island Historical Society.
- 13. "1882 Champlain Society Camp Asticou Log," Mount Desert Island Historical Society.
- 14. There is a record of a willow or alder flycatcher from Townsend for this date in MCZbase; https://mczbase.mcz.harvard.edu.
- 15. This is both interesting and a bit expected. We generally are alerted to the presence of birds by their vocalizations, especially song (song, of course, is a behavior generally undertaken by male birds, first to attract a mate—May and June—and then to defend nesting territory—June and July). And by 31 July, the birds are largely done with singing so it would likely be more challenging to find the birds. Certainly they are present but quieter and thus more elusive.
- 16. "Beach duck" is one of the many colloquial names for american black duck; see W. L. McAtee, "Local Names of Migratory Game Birds" (Washington, DC: US Department of Agriculture, 1923).
- 17. "Peep" refers to the five smallest of the shorebirds. On Mount Desert Island, these are, from most common to least common: semipalmated sandpiper, least sandpiper, white-rumped sandpiper, western sandpiper, and baird's sandpiper.
- 18. H.M. Spelman, "List of the Birds of Mt. Desert" (unpublished manuscript), William Otis Sawtelle Collections and Research Center, Acadia National Park; Francis H. Allen, "A Preliminary List of the Summer Birds of Mount Desert Island, Maine" Maine History Documents, (1900): 61.
- 19. Francis Henry Allen authored articles on New England birds and was an editor, most notably of Thoreau, (Accessed March 18, 2018), hpps://digitalcommons.library.umaine.edu/mainehistory/6

- 20. M.V. Barrow, A Passion for Birds: American Ornithology after Audubon (Princeton University Press, 1998), 10-13; M.V. Barrow, "Gentlemanly specialists in the age of professionalization," 55-94.
- 21. In 1919, Spelman wrote a friend about the Brewster collection being moved to the Museum of Comparative Zoology and wondered if "the two boxes containing my collection might be dropped at my house." H.M. Spelman letter to Samuel Henshaw, November 24, 1919, Museum of Comparative Zoology Archives.
- 22. Townsend bought a lantern for the Nuttall Ornithological Club, explaining that "Many of the members take photographs, and with a good lantern there could be an inducement to bring lantern slides to the meetings." Charles Townsend letter to William Brewster, March 1, 1907, Museum of Comparative Zoology Archives.
- 23. Barrow, A Passion for Birds, pp. 111-125; Weidensaul, Of a Feather, pp. 150-170.
- 24. See H.M. Spelman letters to William Brewster, 1903 and 1915, Museum of Comparative Zoology Archives; C.W. Townsend letter to William Brewster, 1907, Museum of Comparative Zoology Archives, and Allen, "In Memoriam: Charles Wendell Townsend," 227-232; Spelman was referring to today's house sparrows, a non-native species introduced to North America by the American Acclimatization Society in the 1800s—they introduced European species to North America to help immigrants feel more at home in the New World. Townsend authored a significant number of papers, many in *The Auk*, and books. He was a Fellow of the American Ornithologists' Union and American Association for the Advancement of Science.
- 25. Eleanora Semmes Morgan, Bird Notes from Mount Desert (Cambridge, MA: Riverside Press, 1928); C. S. Tyson and J. Bond, Birds of Mount Desert Island, Acadia National Park, Maine (Philadelphia: The Academy of Natural Sciences of Philadelphia, 1941); J. Bond, "Birds of Mount Desert Island And Where To Find Them," Bar Harbor Times, 1958; James Bond, Native Birds of Mt. Desert Island and Acadia National Park (Philadelphia: Academy of Natural Sciences of Philadelphia, 1969); R. H. Long, Native Birds Of Mt. Desert Island and Acadia National Park (Southwest Harbor, Maine: Beech Hill Publishing, 1987).
- 26. On bird species declines, see "Red List 2017," Bird Life International, https://www.birdlife.org/worldwide/news/red-list-2017-seabirds-starving-songbirds-trapped-hope-pelican-and-kiwis; "The State of North America's Birds," North American Bird Conservation Initiative, 2016; Environment and Climate Change Canada: Ottawa, Ontario, www.stateofthebirds.org; and K.V. Rosenberg et al., Partners in Flight Landbird Conservation Plan: 2016 Revision for Canada and Continental United States (Partners in Flight Science Committee, 2016); On terrestrial habitat declines, see P.D. Vaux et al., Assessment of natural resource conditions in and adjacent to Acadia National Park, Maine (Fort Collins, CO: Natural Resource Report NPS/NRPC/WRD/NRR—2008/069, 2008): 112, 119.

