Biographical Portrait

SPENCER FULLERTON BAIRD

(1823–1887)

BY BYRON ANDERSON

Spencer Fullerton Baird, naturalist, zoologist, collector, and author, is most noted for his accomplishments as the second secretary of the Smithsonian Institution and first commissioner of the United States Commission of Fish and Fisheries. Born in Reading, Pennsylvania, Baird was the third of seven children born to Samuel Baird and Lydia McFunn Biddle. The senior Baird was a lawyer and a man of culture and ability. Following his death, Lydia Baird moved the family to Carlisle, Pennsylvania, where Baird entered the local Dickinson College at age thirteen. Baird and his older brother William had an early passion for natural history and were able to find satisfaction in the Cumberland County area with an abundance of fields, woods, streams, and ponds. Together they gathered specimens of all the birds in the county. Identification of a new species of flycatcher led to a friendship with John Audubon, the first of a succession of noted naturalists that Baird came to know personally. Baird's collection of bird skins and other material grew over time at an embarrassing rate, and a special workshop was built.

Baird secured both his A.B. and M.A. degrees from Dickinson College, as well as attending for one year New York's College of Physicians and Surgeons. The latter course of study allowed Baird the opportunity to learn anatomy and related subjects, significant in light of the fact that there was no formalized training to be found for students of natural history. In 1846, he accepted a position as professor of natural history at Dickinson.

In 1849, he undertook the translating and editing of a German encyclopedia of science, F.A. Brockhaus' *Bilder Atlas zurn Conversations Lexicon* that became the *Iconographic Encyclopedia of Science, Literature and Art* (1852). Later he accepted several other similar assignments, notably the editorship of *The Annual Record of Science and Industry* published by Harper and Brothers from 1871–1878. Baird's reputation as a naturalist spread throughout the American scientific community.

NATIONAL OCEANIC & ATMOSPHERIC ADMINISTRATION

Spencer Fullerton Baird

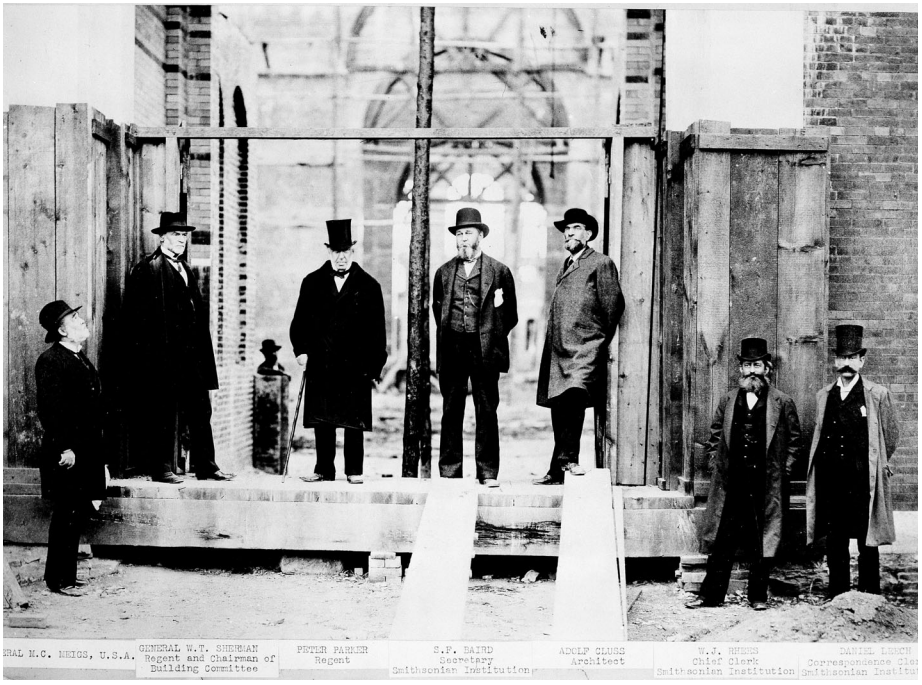
In 1850, Baird accepted a position as curator at the Smithsonian Institution. The Smithsonian's first secretary, the distinguished Joseph Henry, proposed to the Board of Regents the need for an assistant and recommended Baird. Board member George Perkins Marsh, who was interested in a national specimens collection, was able to pressure Henry into hiring Baird. Even though Baird was not Henry's choice, at the age of twenty-seven, Baird was appointed junior assistant secretary in what would become the first of thirty seven years of outstanding leadership at the Smithsonian. With Baird came his collection of specimens, and this became the cornerstone of the National Museum of Natural History. Henry counted on Baird to handle the publishing and wide distribution of original research papers; something Henry considered the key function of the Smithsonian. In the meantime, Baird steadily reshaped and reorganized the Smithsonian to embody his scientific concepts. He developed an extensive network of collectors, personally receiving, sorting, identifying, and classifying the continuous flow of specimens beginning to arrive from exploring parties and other contacts. For Baird, no scientific research could be responsibly carried out without examination of the physical specimen in question. Research had to rest on hard data.

Baird married Mary Helen Churchill, the well-educated and intelligent daughter of Col. Sylvester Churchill, Inspector General of the United States Army. Though Mary did not have the same love of natural history as Spencer, she provided him significant support in the pursuit of his career. The marriage proved beneficial to Baird's career, as his new father-in-law was in charge of staffing and conducting all terrestrial exploration. As a result, Baird was able to either provide instructions for collecting specimens or suggest names of qualified collectors to accompany every important expedition dispatched by the U.S. government during the 1850s. Between 1852–1854, there were twenty-six expeditions, including significant surveys such as the *Exploring the Red River of Louisiana Survey* and the *United States and Mexican Boundary Survey*. Most important were the four separate explorations conducted to survey for a railroad route across

the continent to the Pacific coast, documented by Baird in the *Pacific Railroad Survey Report* (1857–1860). Baird was able to outfit the expeditions with collecting apparatus and materials. In return, the Smithsonian's natural history collections increased regularly and systematically.

From its beginning in 1846, the Smithsonian acted as a repository for scientific collections. The Institution was at the forefront of the collecting mania that swept through the nineteenth century scientific community. Baird soon realized that the government exploring expeditions needed to expand independently in order to encompass the geographical limits of the United States and North American continent. The Smithsonian Explorations Program was created. Two expeditions were carried out under the program, the first being the 1859 Kennicott expedition to the Mackenzie River District in the Northwest territories of Canada. Robert Kennicott, a young and energetic naturalist, initiated one of the most productive periods of natural history collecting. For the expedition, Baird was able to get the backing and support of the Hudson's Bay Company. From the company's posts, Kennicott turned many clerks into amateur collectors. In addition, he was able to enlist the support of native inhabitants who traded specimens and artifacts for material supplies. The second expedition sent Kennicott to Alaska under the auspices of Western Union, which wanted to establish a Russian America telegraph with the intent of eventually reaching Europe. The Western Union representatives and Kennicott were at odds over the intent of the expedition, and the company failed to provide proper support to Kennicott and his men. As a result not nearly as many specimens were sent to the Smithsonian as the first expedition. What neither Baird nor Kennicott were able to anticipate was that these expeditions laid the foundation for a long tradition of Smithsonian collecting and scientific studies in the Arctic and subarctic. In addition, Kennicott's work in Alaska and Baird's subsequent testimony helped convince Congress that the area's natural resources were sufficiently valuable to justify its purchase from Russia.

In 1850, the Smithsonian's collection totaled 6,000 specimens. By 1861, 150,000 items were cataloged. Along the way Congress transferred to the Smithsonian custody of all the government's natural



SMITHSONIAN INSTITUTION ARCHIVES, PHOTOGRAPH COLLECTION, 78-10099.

The National Museum Building Committee standing in an unfinished doorway of the new National Museum Building (now the Arts and Industries Building) while it is still under construction. From the left: General Montgomery C. Meigs; General William Tecumseh Sherman, Smithsonian Regent and Chairman of Building Committee; Peter Parker, Smithsonian Regent; Spencer F. Baird, Smithsonian Secretary; Adolph Cluss, Architect; W. J. Rhees, Chief Clerk; Daniel Leech, Correspondence Clerk.

history collections, and provided funding for the building of the Arts and Industries building, known as the U.S. National Museum that opened in 1881. Baird was made curator, and the museum became the preeminent repository for North American natural history collections. The Smithsonian's expanded specimen collections facilitated basic research in many sciences including mammalogy, ichthyology, entomology, mineralogy, paleontology, archaeology, embryology, ornithology, and zoology. In 1910, long after Baird's death, the Natural History building opened and was called the U.S. National Museum. While not built in his lifetime, the building was certainly part of Baird's legacy.

Baird was instrumental in bringing about reform in the systematization and rationalization of the field methods used in the natural sciences. He initiated and developed a precise method of systematic study and research in natural history, to a degree of precision unknown until that time. The reform included a revision to the scientific nomenclature. This persistence in accuracy became the foundation for the "Bairdian School" of ornithology. When the ornithological collections at the Smithsonian quadrupled between 1858 and 1864, Baird undertook work that led to the *Review of North American Birds* (1864–1866) in order to provide identifications and technical descriptions for species not included in his *Catalogue of North American Birds* (1858) or its expanded reprints (1859, 1862). Later works added geographical distribution and variation to the technical taxonomies. Two of Baird's most important works, *A History of North American Birds: Land Birds* (1874) and *The Water Birds of North America* (1884), contained information on life cycles and avian behavior, descriptions of identifying characteristics, range of distribution, and number of specimens examined.

Baird's long workdays and extended absences placed emotional strains on his wife. In an attempt to rectify this, Baird purchased a country home in Woods Hole, Massachusetts, an area close to water. Never one to waste a moment, Baird soon developed a new interest investigating the local decrease of certain valuable fishes in the area. His investigation grew and he quickly saw the need for the scientific study of fish that culminated in his convincing Congress to establish the U.S. Fish and Fisheries Commission. He agreed to head the commission for no

additional salary. The work of the new commission comprised all possible forms of ichthyological knowledge and fish protection. The commission, at first confined to the Atlantic coast, spread out and new fish species were introduced into waters throughout the country. Baird established a research facility that would eventually become the Wood's Hole Marine Biological Laboratory, one of the world's foremost marine biological and oceanographic centers. In addition, he secured funds for the construction of the research ship, *Albatross*, an act that by itself warrants national recognition.

After twenty-eight years as assistant to Joseph Henry, Baird was made secretary of the Smithsonian upon Henry's retirement. Baird had advanced to become America's top native-born naturalist. Under Baird, the Smithsonian's natural history collections had built up to a point that they dominated the Institution and changed its character. The added responsibilities to Baird's workload left little time for collecting. Instead, he trained young collectors, or in effect became a collector of collectors, and these individuals kept the flow of specimens and artifacts coming into the Smithsonian.

Baird's image and reputation have faded with time. His principle achievements were in the field of systematic science, and systematic science does not loom large in the public interest. He had no interest in public acclaim. He wrote many books and reports to which students still refer. George Brown Goode, Baird's successor and biographer, wrote of Baird that his industry was phenomenal. Goode prepared a bibliography of all Baird's publications, including official reports, and this numbered 1,068 items. His official biographer, William Healy Dall, carefully edited many of Baird's letters, significant because of his prolific letter writing.

Baird discovered, educated, and supported an entire generation of natural scientists whose works have made major contributions to the field. His name was given to one genus, over a dozen species of fish, and over twenty-five species of mammals, birds, fishes, mollusks, and other forms of life, together with several fossils or extinct forms of life. One of Audubon's prints is of a Baird's bunting. In his capacity as a monument builder, Baird created the most publicly identifiable elements of his legacy.

Baird was not without controversy or criticism. His contemporaries did not always agree with revisions to taxonomy. Louis Agizziz wrote a sharply-worded rebuttal to Baird's *Catalogue of North American Reptiles* (1853). Baird cannot be considered a conservationist. Even if a species were endangered or near extinction, the examination and cataloging of the specimens prevailed, and Baird stated as much in his instruction to collectors. One of his prevailing thrusts for the fisheries commission was to find ways to increase the food supply. Fish hatcheries were begun, and its greatest success is now considered a failure—the introduction of carp to U.S. waters. One of the greatest controversies in later life was a charge by a New York newspaper of mismanagement of fishery commission funds. According to Professor Goode, this unjust accusation coupled with continued long work hours, hastened Baird's death.

His casket was conveyed to Washington by special train. Flags were lowered to half-mast at the Capital, and businesses closed in mourning from 3:00 to 4:30 p.m. Besides his distinguished service in government, Baird was secretary of the Association for the Advancement of Science, (1850–1851), helped organize the National Academy of Sciences, held honorary memberships in fifteen foreign academies and scientific societies, and received decorations from Norway, Australia, France and Germany. □

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