

Herpetology was only a minor part of Baird's research. His scientific reputation was as an ornithologist and mammalogist, on which subjects he published extensive books. He also took a special interest in fisheries, and when he became concerned about the depletion of the fisheries on the Atlantic coast he lobbied successfully for creation of a U.S. Fish Commission, of which he became founding director in 1871. His establishment of a fisheries research laboratory at Woods Hole, Massachusetts, led to the development of the famed oceanographic institute. In 1878, Baird became Secretary of the Smithsonian Institution, a position he held until his death on 19 August 1887, at Woods Hole.

During his lifetime Baird received many honors, in America and overseas. The Philadelphia Medical College awarded him an honorary M.D. in 1848, and there were additional honorary doctorates. He was elected to the U.S. National Academy of Sciences in 1864, over the opposition of his friend, Louis Agassiz, who felt that Baird was merely a descriptive biologist who had made no fundamental theoretical discoveries. Although Baird recognized the enormous importance of gaining an understanding of the diversity of the newly-explored regions, he also made pioneering contributions to the problems of geographic variation and the nature of species. Unlike Agassiz, Baird was an evolutionist, and his understanding of individual and geographic variation was viewed from a Darwinian point of view.

Baird's contributions to American science increasingly overshadowed those of Agassiz. For the last decade of his life, Baird was at once Secretary of the Smithsonian Institution, Director of the National Museum, and Commissioner of Fisheries. Highly regarded by Congress, he gave frequent testimony before their committees. When Congress authorized the Pacific Railroad Surveys in 1853 to determine the most practical route for a transcontinental railway, Baird used his influence to have naturalists attached to most of the surveying parties. During the Congressional debate leading up to the purchase of Alaska from Russia in 1867, it was Baird who provided the all-important documentation as to the worth of its natural resources. This was based on a five-year survey conducted in Alaska and directed by Baird, a project in which his former student, Robert Kennicott, lost his life.

In short, as a developer of scientific institutions and as patron of collectors and aspiring young naturalists, Baird had no peer. He was the most influential figure in American zoology during the closing decades of the 19th Century, yet his modesty and unselfishness have made his many contributions comparatively unrecognized by posterity.

• *References:* "Spencer Fullerton Baird A Biography," by W. H. Dall, J. B. Lippincott, Philadelphia, xvi, 462 pages, 1915; "Spencer Fullerton Baird and the Purchase of Alaska," by E. C. Herber, Proc. Amer. Philos. Soc., 98: 139-143, 1954; "Spencer Fullerton Baird," by D. C. Allard, Dict. Sci. Biogr., 1: 404-406, 1970; Adler, 1979 (pp. 26-31). • *Portrait* (1864): Courtesy American Philosophical Society, Philadelphia. • *Signature* (1852): From Dall, 1915.

### GIRARD, Charles (1822-1895).

Charles Frédéric Girard, zoologist and physician, was born in Mülhausen, Upper Alsace (now Mulhouse, Haut-Rhin, France) on 9 March 1822. He was educated at the College of Neuchâtel in Switzerland, beginning as early as 1839, as the pupil and, later, assistant of Louis Agassiz, and he joined his teacher at Harvard College in the United States in 1847. In 1850, he was hired by Spencer F. Baird, who had just joined the fledgling Smithsonian Institution in Washington, as his chief assistant. This move forever earned Girard the enmity of Agassiz, but he sought a place where his individual talents could be recognized, and Baird unselfishly provided him with unparalleled opportunities.

At that time the Smithsonian was the recipient of extensive collections made by numerous government surveying parties in the American West and the Pacific Basin. Because Baird was more occupied with mammals and birds, as well as administrative duties, the lower vertebrate groups became Girard's task to describe. During the period 1851-1859, Girard published some 25 titles on herpetology (his only other one was a short note in 1891), alone or more usually in co-authorship with Baird, in which a huge number of new genera and species were named. All told, Girard published some 81 titles, about half in ichthyology, but he also authored many papers on invertebrates.



*Charles Girard*