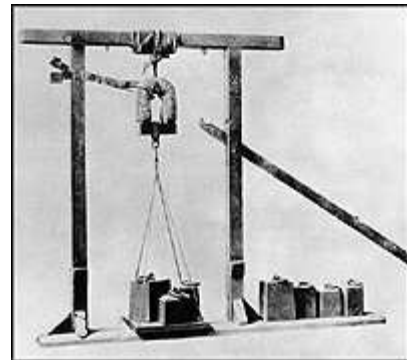


The Papers of Joseph Henry

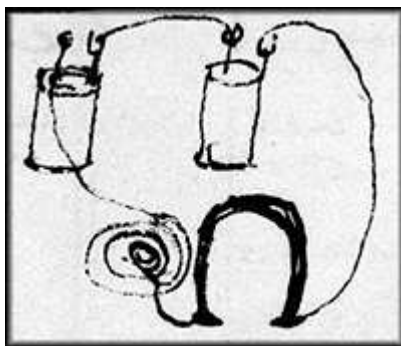
Published Volumes

Below is a brief description of the contents of each volume of *The Papers of Joseph Henry*. For volume 7, you may link to an online "[mini edition](#)" provided by the Model Edition Partnership at the University of South Carolina. The mini edition includes an introduction and a selection of documents. For volume 8, you may link to the full [table of contents](#) and the [introduction](#).

Volume 1, *The Albany Years: December 1797-October 1832* (Washington: Smithsonian Institution, 1972: ISBN 0-87474-123-8) deals with the formative years of Henry's career. It documents the influence of the Albany, New York, milieu on his scientific growth, and traces the origin and early development of the Albany Academy, where Henry studied and taught, and the Albany Institute, the forum for his early scientific work. A prominent theme of the volume is the proper application of science to technology. In 1831, Henry constructed an electromagnet for Benjamin Silliman of Yale to exhibit before his students. The magnet, which had a lifting power of 2,000 pounds, is now in the Smithsonian Institution.



Henry's Yale electromagnet.



Sketch in entry May 11, 1835, "Record of Experiments." Smithsonian Archives.

Volume 2, *The Princeton Years: November 1832-December 1835* (Washington: Smithsonian Institution, 1975: ISBN 0-87474-164-5) concerns Henry's adjustment to a small college town and his attempts to develop a first-rate facility for teaching and research in the physical sciences. It details his excursions to New York City and Philadelphia in search of scientific apparatus and scientific fellowship, and reveals the beginnings of his lifelong friendships with leading scientists in the latter city, where he became active in the American Philosophical Society and the Franklin Institute.

The volume contains many selections from Henry's "Record of Experiments" (the title of his laboratory notebooks), which together with his correspondence give insight into his pioneering work on electromagnetic self-induction and his construction of electromagnets and other equipment needed to pursue his researches. The entry containing this sketch (left) reads: "The current passed through a galvanic magnet no increased effect perceived in the spark--current passed in the opposite direction no increased effect."

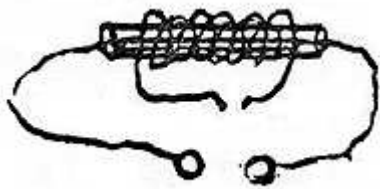
Volume 3, *The Princeton Years: January 1836-December 1837* (Washington: Smithsonian Institution, 1979: ISBN 0-87474-174-2) focuses on Henry's travels to the principal

scientific centers of Great Britain and France. During his stay, Henry attended lectures at technical societies, and toured lighthouses, harborworks, and railroad facilities. His diary entries contain appraisals of such European luminaries as J. L. Gay-Lussac, Mary Somerville, Charles Wheatstone, Charles Babbage, and Michael Faraday, and reveal his interest in the way European industry and commerce made use of scientific findings. He also comments on manners and morals, especially in London and Paris. His reactions to the European experience betray a tension between admiration for European advances and a competitive desire for Americans to catch up scientifically and technologically.



Faraday, ca. 1849, lithograph by W. Bosley from A. F. J. Claudet daguerreotype. Smithsonian Archives.

Volume 4, *The Princeton Years: January 1838-December 1840* (Washington: Smithsonian Institution, 1981: ISBN 0-87474-792-9) demonstrates Henry's growing concern with the nation's intellectual image abroad. After returning from Europe, he was increasingly sensitive to American shortcomings, particularly to the problem of scientific charlatanism. His opposition to the physician-inventor Henry Hall Sherwood, documented in the volume, epitomized this delicate issue. His fears of quackery, as well as of well-intentioned but misguided amateurism, colored his views of scientific organization and imparted a preference for hierarchical forms in which serious professionals like himself remained in control.

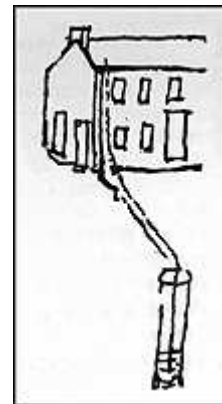


Sketch in entry April 6, 1838.

In his research, Henry progressed steadily in his understanding of electromagnetic induction, and his investigations provided the basis for portions of his series "Contributions to Electricity and Magnetism." His laboratory notebooks of this period also reveal an interest in metallic capillarity, electroacoustics, and optics. The entry containing the sketch at left reads: "Put helix of long wire wrapped around a glass rod into long gas pipe,

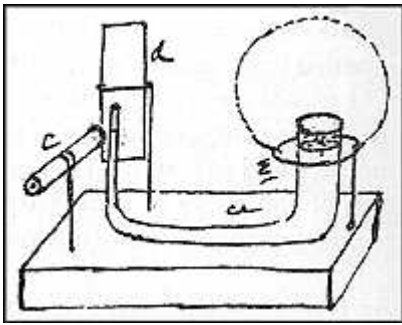
which was magnetized."

Volume 5, *The Princeton Years: January 1841-December 1843* (Washington: Smithsonian Institution, 1985: ISBN 0-87474-793-7) provides a detailed picture of Henry's daily life as a college professor and leader of the American scientific community: teaching, experimenting, presenting his results to his peers, and lecturing to the public. In addition to continuing his research on electromagnetism, he investigated such phenomena as thermoelectricity, capillarity, phosphorescence, and optical polarization. Applying his knowledge to practical problems, he advised Samuel F. B. Morse during the development of the Morse telegraph, and responded to inquiries about the best forms of lightning rods. The sketch to the right from an entry in "Record of Experiments" headed "Induction from a thunder cloud," reads "I connected by soldering a copper wire (bell size) to the tin roof of our house and passed the lower extremity into the water of the well."



Entry June 10, 1842.

The volume also details Henry's role in the choice of Alexander Dallas Bache as head of the U.S. Coast Survey.



Sketch of syphon Henry built to measure force of tension in a soap bubble. From entry April 22, 1844.

Volume 6, *The Princeton Years: January 1844-December 1846* (Washington: Smithsonian Institution, 1992: ISBN 1-56098-112-1) further develops the theme of Henry as a consultant on technological problems of his day. He provided expert advice on the acoustics of public buildings, the protection of buildings from lightning, the electromagnetic telegraph, and Colt's submarine battery. He also chaired the Franklin Institute committee that investigated the causes of the explosion of Robert Stockton's experimental gun, the "Peacemaker."

The volume contains the final major installments of Henry's personal scientific research, and includes a student's perspective on Henry's teaching through the diary of John R. Buhler. The volume also documents the campaign led by Alexander Dallas Bache to elect Henry as the first secretary of the Smithsonian Institution.

Volume 7, *The Smithsonian Years: January 1847-December 1849* (Washington: Smithsonian Institution, 1996: ISBN 1-56098-533-X) documents the beginning of the most influential period of Henry's life, his thirty-one years as Secretary of the Smithsonian Institution. During these years, Henry strove to ensure that James Smithson's bequest was used to support original scientific research and publication, rather than to create a national museum or library--notions then advocated by many prominent Americans. Henry's diary entries and letters attest to his continuing effort to acquire support from the Smithsonian regents, Congress, scientists, and the American public for his program and his vision of a place for science in a democracy. The volume illuminates the challenges Henry faced in implementing his program without national precedents, adequate resources, or an experienced staff.



To view a selection of documents from volume 7, plus an introduction to the volume, go to web site of the [Model Editions Partnership](#).

Volume 8, *The Smithsonian Years: January 1850-December 1853* (Washington: Smithsonian Institution, 1998: ISBN 1-56098-891-6) reveals a difficult period in Henry's life. During these years, he suffered constant personal and financial woes, clashed with subordinates, and faced significant public criticism of his leadership. When Senator Stephen A. [Douglas](#) of Illinois attacked the Smithsonian for its preoccupation with research of "no practical bearing," such as studies of "sea weeds and such trash," Henry mounted a vigorous and eloquent defense of basic research. To ensure the



Douglas, engraving by A. B. Walter. Smithsonian Archives.

Smithsonian's adherence to what Henry saw as its central mission, he remained at the institution despite the criticism and despite offers of prestigious positions at the University of Pennsylvania, the University of Virginia, and the College of New Jersey at Princeton.

The volume records several milestones in the Smithsonian's history. The first was Henry's hiring of assistant secretary Spencer Baird, who energetically expanded the institution's collections of animal, plant, mineral, and fossil specimens. Also during this period, Henry established a system with institutions abroad for the exchange of publications in the biological and physical sciences, ethnology, archaeology, and paleontology. The international exchange program became a fundamental Smithsonian enterprise for more than a century. In addition, Henry began to campaign to place scientific research, publishing, and a meteorological observation network ahead of museum and library collections in terms of funding priorities.

See [table of contents](#) to volume 8; see [introduction](#).

Volume 9, *The Smithsonian Years: January 1854-December 1857* (Smithsonian Institution in association with Science History Publications/USA, 2002: ISBN 0-88135-363-9) documents Henry's clash with Assistant Secretary Charles C. Jewett over the purpose and future direction of the Smithsonian. Their dispute would erupt into a public battle fought in newspapers and literary journals in New York, Boston, and Washington, and in the halls of Congress. As the controversy took on national dimensions, it became entangled in partisan politics and broader issues of the decade, particularly the ever-deepening sectional conflict and the problem of cultural elitism in a democracy.



Caption reads: "Museum of United States Patent Office."

Henry would eventually win the dispute and keep intact his vision of an institution dedicated to basic research. But even as he emerged with his authority strengthened, Henry would initiate a relationship between the Smithsonian and the federal government that threatened to undermine his vision. Although Henry believed that the Smithsonian and the federal government "should through all time be kept separate and the former be preserved from political influence," for reasons that have not been clear until now he allowed the Smithsonian to become overseer of the United States National Museum. Volume 9 includes documents that shed new light on Henry's motivations for accepting the national collections in 1857, beginning the process by which, in one historian's view, "activities in research became largely overshadowed by the care of the contents of what was to become aptly described as the nation's attic."



Volume 10, *The Smithsonian Years: January 1858-December 1865* (Smithsonian Institution in

association with Science History Publications/USA, 2004: ISBN 0-88135-358-2) shows Henry struggling to cope with the impact of the Civil War, the death of his only son, William, the loss of his mentor and confidant, Alexander Dallas Bache, to a mental disease, and the destruction by fire of part of the Smithsonian Institution Building. Henry's opinions on race, democracy, and American society emerge in this volume as he reflected on the events leading to the Civil War. Despite viewing the conflict as unnecessary, Henry would make many contributions to the Union effort. The volume documents his service on a wartime commission to evaluate inventions and proposals for the Navy Department, his role assisting the government as a charter member of the National Academy of Sciences, and his work aiding maritime navigation as a member of the United States Light-House Board.

Henry, ca. 1860-1861, photograph by Mathew Brady. Smithsonian Archives.

Throughout the volume, one sees the central role Henry played in the organization of American science--from attempting to resolve a controversy over the Dudley Observatory in New York, to ensuring the survival of the fledgling National Academy of Sciences, to the restoration of a national scientific community after the war.

Volume 11, *The Smithsonian Years: January 1866-May 1878* (Smithsonian Institution in association with Science History Publications/USA, 2007: ISBN 0-88135-390-6) covers the last twelve years of Henry's life, when he emerged as the leader of American science and the nation's foremost proponent of funding for basic scientific research.

Secretary of the Smithsonian Institution since its founding in 1846, Henry guided the institution's recovery from the Civil War while reducing or eliminating programs that he felt detracted from its core mission of original scientific research. He arranged, for example, to transfer the bulk of the Smithsonian's library to the Library of Congress, the herbarium to the Department of Agriculture, and the art collection to the Corcoran Gallery of Art.

Henry also tried, but ultimately failed, to persuade the government to take custody of the National Museum, which represented not just a financial burden to the Smithsonian but also a threat to its independence.



Portrait by Henry Ulke.

During this period, Henry also guided the fortunes of the fledgling National Academy of Sciences, becoming president in 1868 and sustaining it during a time of few resources and tepid support from the scientific community. During his ten years as president, he carved out a role for the academy as adviser to the government on scientific and technological matters. On a broader front, Henry embarked on a campaign to convince Gilded Age philanthropists to emulate James Smithson and fund original research. To further this goal, he arranged to

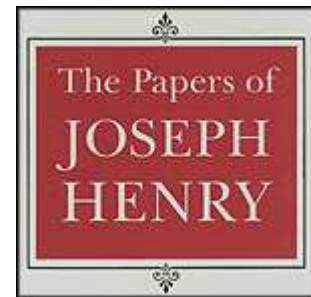
bring Irish physicist John Tyndall to America for a lecture tour Henry conceived for the purpose of advocating "the importance of abstract science in its relation to the advance of civilization and the importance of making provision for original research."

Nearing his mid-seventies, Henry agreed out of a sense of duty to chair the United States Light-House Board, an agency responsible for the operation of the nation's extensive system of lighthouses. The first civilian chair of the board, he struggled to harmonize the competing interests of the naval officers and army engineers serving with him. Remaining at the same time chair of the board's committee on experiments, he conducted fog-signaling experiments that established him as a pioneer in the field of atmospheric acoustics.

The volume concludes with Henry's death in 1878, bringing to a close an eleven-volume documentary edition that traces Joseph Henry's rise from humble origins in upstate New York to a position of such prominence in the nation's capital that, as General William Tecumseh Sherman remarked, the president, Congress, and the Supreme Court "ceased their labors" to attend his funeral and "pay a just respect to his memory."

Volume 12, a cumulative index to the eleven volumes, is available under the title *The Papers of Joseph Henry, 1797-1878: A Cumulative Index* (Smithsonian Institution in association with Science History Publications/USA, 2007).

For information on ordering volumes of *The Papers of Joseph Henry*, please see the home page of our publisher, [Science History Publications](#).



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