

**Joseph Henry letters, 1836-1878**  
**1836-1878**  
**Mss.B.H39p**

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## Summary Information

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<b>Repository</b>	American Philosophical Society
<b>Creator</b>	Henry, Joseph, 1797-1878
<b>Title</b>	Joseph Henry letters, 1836-1878
<b>Date [inclusive]</b>	1836-1878
<b>Call number</b>	Mss.B.H39p
<b>Extent</b>	48.0 Item(s)
<b>Extent</b>	48 items.
<b>Location</b>	LH-MV-C-10
<b>Language</b>	English
<b>Container</b>	1
<b>Abstract</b>	The letters in this small collection concern the Smithsonian Institution, the Colorado Territory, and Humboldt's observations, among many other topics.

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## Background note

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Joseph Henry (1797-1878, APS 1835), a physicist, was the first secretary and director of the Smithsonian Institution, a post he retained for over three decades. Henry was a leading experimental scientist whose contributions include several discoveries in the field of electromagnetics. He has been credited with the invention of the electromagnet and the telegraph, among other things.

Henry was born in 1797 in Albany, New York, the son of William Henry, a teamster, and his wife Ann Alexander. Around 1804 he was sent to live with his maternal grandmother and his uncle in the nearby village of Galway, where he attended a country school. Henry's father died when he was thirteen. He subsequently returned to Albany, where he was apprenticed to John F. Doty, a watchmaker and silversmith. However, when his master's business failed he did not complete the apprenticeship and instead contemplated a career in theater, his true passion at the time. From around 1813 to 1816 he was involved with the Green Street Theater in Albany.

When Henry was sixteen years old he stumbled across a book that would have a profound influence on his subsequent life. The book was George Gregory's *Lectures on Experimental Philosophy, Astronomy, and Chemistry* (1808), an exposition of science designed for a wide audience. Henry later wrote that this book "opened to me a new world of thought and enjoyment, invested things before almost unnoticed with the highest interest, fixed my mind on the study of nature and caused me to resolve at the time of reading it that I would immediately commence to devote my life to the acquisition of knowledge." He enrolled in night classes and attended Albany Academy from 1819 to 1822. He also worked as a tutor, and he headed a surveying party in New York State from the Hudson River to Lake Erie. In 1826 he accepted the appointment of professor of mathematics and natural philosophy at Albany Academy. Four years later he married his cousin, Harriet Alexander. The couple had six children, four of whom lived to adulthood.

Henry's research at Albany Academy focused on electromagnetic phenomena. In 1831 he announced that he had produced an electromagnet of previously unmatched power. This accomplishment demonstrated how such magnets could be electrically activated over long distances. Henry also invented the first electric motor, and he discovered mutual electromagnetic induction and electromagnetic self-induction. Henry subsequently provided advice, support, and encouragement to Samuel F. B. Morse's (1791-1872, APS 1848) efforts to develop a telegraph. Henry eventually changed from admirer to enemy due to bitter disputes over Morse's patents. Contrary to Morse's claims, Henry always maintained that Morse deserved credit not for priority of conception, but rather for the ability to realize an efficient system of telegraphy. William Tecumseh Sherman, for one, agreed that Henry deserved credit for the invention. He noted in his address at Henry's memorial service in 1878 that "wherever man goes, or human thought travels, the poles and continuous wires will remind him that to Professor HENRY of all men we are most indebted for the inestimable blessings of the telegraph." In any case, these accomplishments brought him to the attention of other scientists in the United States and Europe.

In 1832 Henry accepted the appointment of professor of natural philosophy at the College of New Jersey (now Princeton University). In addition to natural philosophy, he lectured on geology and architecture. He also continued his research on electromagnetism. More specifically, he studied the phenomenon of lateral discharge, the tendency of electricity to diverge from its most direct course. This topic was

of both theoretical and practical interest since lightning paths were generally viewed as instances of lateral discharge. As a result, Henry was frequently consulted about more effective ways of protecting buildings from the effects of lightning strikes. He also investigated the theory of induction, especially the screening of induction by conductors, the creation of higher order induced currents, and induction over long distances. By using lightning storms as his source of electricity, he was able to demonstrate induction over distances of an estimated twenty miles. Among his other discoveries were the concept of the transformer and the oscillatory nature of the discharge of a capacitor. In 1835 Henry was elected to the American Philosophical Society. In the 1830s and 1840s he published several essays on electricity and magnetism in the Society's *Transactions*. Henry evidently used instruments from the cabinet of optical and philosophical apparatus owned by the Philadelphia merchant and financier and fellow APS member Charles Nicoll Bancker (1778?–1869, APS 1825) for some of his experiments.

In addition to research in the field of electromagnetism, Henry conducted experiments on ultraviolet light, the use of soap bubbles to explore molecular cohesion, work on the capillarity through solids, and the demonstration of the interference of heat. He also took the first empirical measurements of the temperature differences between the solar surface and sunspots by utilizing thermoelectric apparatus. He was able to demonstrate that sunspots were cooler than the surrounding surface; in addition, he found evidence of the phenomena of limb darkening, the apparent coolness of the sun at its limb. Henry spent most of 1837 on a trip to Britain, France, and Belgium, where he met many leading scientists of the day, including Michael Faraday (1761-1867, APS 1840). Henry was a member of the Scientific Lazzaroni, an informal group of scientists and science administrators who attempted to establish standards for the American scientific community and increase the level of public support for research. Other members of the group included his close friend Alexander Dallas Bache (1806-1867, APS 1829), Louis Agassiz (1807-1873, APS 1843), and John Fries Frazer (1812–1872, APS 1842). Henry chose Bache as head of the U.S. Coast Survey in 1843; Bache, in turn, actively promoted the election of Henry as first secretary of the newly created Smithsonian Institution in Washington, D.C., a post he assumed in 1846. Henry served as the Institution's first secretary for over thirty years, until his death in Washington, D.C. in 1878. The Institution was funded by the bequest of James Smithson for "the increase and diffusion of knowledge." The legislation that established it in August 1846 provided for a building to house a museum, a library, an art gallery, a chemical laboratory, and lecture rooms. It laid out a system of governance but it was left to Henry to describe a definitive program. Henry hoped to make the Institution a center of American science. To this end he 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. By the late 1850s most of the Institution's library was transferred to the Library of Congress, and the Smithsonian retained only a working collection. Similarly, over subsequent years the herbarium was transferred to the Department of Agriculture, and the art collection moved to the Corcoran Gallery of Art. At the same time, Henry offered the Smithsonian as curator of the national collections on the condition that the federal government paid the direct costs. The initial appropriation was passed in 1857, and in 1859 the Great Hall of the Smithsonian building was designated the "National Museum of the United States." Subsequently, the federal appropriation increased to meet the rising costs of exhibition and conservation.

As the Institution's secretary, Henry was committed to support research in different fields, including anthropology, archaeology, botany, zoology, meteorology, geophysics, and astronomy. As he wrote in the *Smithsonian Annual Report for 1855*, "Indeed, it is an important part of the duty of this Institution to encourage special lines of research into every department of the varied domain of nature." He was

especially interested in publishing material that commercial publishers rejected and learned societies could not afford to publish. He chose as the first volume in the series *Smithsonian Contributions to Knowledge*, Ephraim George Squier and Edwin Hamilton Davis's *Ancient Monuments of the Mississippi Valley: Comprising the Results of Extensive Original Surveys and Explorations* (1848). The book, which Henry himself edited, constitutes a landmark in the study of mound builders specifically and American scientific research generally.

Under Henry's leadership the Institution took on the role of patron for fields that lacked other sources of support. For example, in cooperation with the federal government, Henry established a national network of meteorological observers in 1849. At its peak in 1870, there were over 500 participants; that same year, Congress established a national weather service in the War Department. In 1873 the Smithsonian turned its activities over to the federal government. In addition, Henry's support for early surveys of the western states eventually resulted in the establishment of the United States Geological Survey and the Bureau of American Ethnology.

Henry's work at the Smithsonian was not always easy; in addition to limited resources and a lack of experienced staff, he suffered personal and financial woes, clashed with subordinates, and faced significant public criticism of his leadership, including his emphasis on basic research. Despite these challenges, Henry declined offers of prestigious positions at the University of Pennsylvania, the University of Virginia, and the College of New Jersey at Princeton. More significantly, Henry was able to keep intact his vision of an institution dedicated to basic research.

During his thirty-two year tenure as secretary of the Smithsonian, Henry's occasionally served as a consultant for the government, including for issues related to the Capitol such as protection from lightning, building materials for an extension, and its interior acoustics. During the Civil War he was a member of the Permanent Commission of the Navy Department, which advised the department on innovations in military technology. While with the Light-House Board he conducted investigations of fog-signals and illuminants in an attempt to find an inexpensive substitute for the sperm oil burned in the lighthouse lamps. Henry was a founding member of the National Academy of Sciences (1863), a society that grew out of the efforts of the Lazzaroni. He served as the Academy's vice president from 1866 to 1868 and president from 1868 until his death. He also served as president of the American Association for the Advancement of Science (1849-1850), and president of the American Association for the Advancement of Education (1854). In 1871 he was elected the first president of the Philosophical Society of Washington. He was an original member of the Light-House Board, serving as its chair from 1871 to 1878. He received honorary degrees from Union College in 1829 and Harvard University in 1851.

In December 1877 Henry became ill with Nephritis; he died in 1878 in Washington, D.C. His funeral on May 16, 1878, was attended by the President, Vice-President, the Cabinet, the members of the Supreme Court, Congress, and the senior officers of the Army and the Navy. Congress honored Henry again in the 1880s, when it commissioned the completion of a statue of Henry, and in the 1890s, when he was chosen as one of sixteen figures "representative of human development and civilization," to be memorialized in the Main Reading Room of the Library of Congress, along with such notables as Columbus, Isaac Newton, Herodotus, Michelangelo, Plato, and William Shakespeare.

## Administrative Information

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### Publication Information

American Philosophical Society

## Provenance

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### Acquisition Information

Purchased from Elliot (\$281.50) and accessioned, 09/18/1967 (1967 1874ms). See in-house shelf list for additional accession numbers and dates.

## Related Materials

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### Related Material

This collection forms only part of the holdings of Henry papers at the American Philosophical Society Library. There are over 275 additional items in other collections, including letters to, from, and about Henry.

## Indexing Terms

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### Corporate Name(s)

- Smithsonian Institution.

### Genre(s)

- General Correspondence

### Geographic Name(s)

- Colorado -- History -- To 1876.

### **Personal Name(s)**

- Agassiz, Alexander, 1835-1910
- Alexander, J. H. (John Henry), 1812-1867.
- Bache, A.D., (Alexander Dallas), 1806-1867
- Brewer, T. M., (Thomas Mayo), 1814-1880
- Buren, John van
- Hare, Robert, 1781-1858
- Horsford, Eben Norton, 1818-1893
- Humboldt, Alexander von, 1769-1859
- Humphreys, A. A., (Andrew Atkinson), 1810-1883
- King, Charles, 1789-1867
- Leidy, Joseph, 1823-1891
- Maclean, John, 1800-1886
- Mayer, Brantz, 1809-1879
- Ranlett, Charles E
- Seaton, William Winston, 1785-1866.

### **Subject(s)**

- Colony and State Specific History
- Natural history.
- Physics.
- Science and Technology

### **Other Descriptive Information**

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This small collection contains an assortment of Joseph Henry correspondence, mostly from prominent Americans writing to Henry. Most of the early letters are relatively short notes, with longer, more detailed letters beginning in the correspondence from the 1850s. The most prominent topics of discussion are the Smithsonian Institution, the establishment of Colorado as a territory, and Humboldt's work. Among the prominent correspondents are Robert Hare, Louis Aggasiz, and Alexander Dallas Bache. Two letters are addressed to Mrs. Henry.



## Collection Inventory

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### Papers

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**Buren, John Van, 1810-1866**

December 20, 1836

Letter to Prof. Joseph Henry

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**Buchanan, George**

August 8, 1837

Letter to [Joseph Henry]

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**Henry, Joseph, 1797-1878.**

July 18, 1841

11x8-1/2

Letter to William Mitchell, Nantucket,  
Massachusetts

A.L.S. 2p.and end. Thanks for his meteorological observations. Friendly letter.

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**Kelland, Philip, 1808-1879**

August 1, 1847

Letter to Prof. Henry

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**Humphreys, A. A., (Andrew Atkinson),  
1810-1883**

November 8, 1848

Letter to Prof. Henry

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**Marsh, J. Y.**

November 13, 1848

Letter to Prof. Henry

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**Seaton, William Winston, 1785-1866.**

Thursday, [February 1849]

Letter to Prof. Henry

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**Henry, Joseph, 1797-1878**

October 11, 1851

Letter to Brants Mayer

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**Hare, Robert, 1781-1858**

January 9, 1853

Letter to Mrs. Joseph Henry

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**Agassiz, Louis, 1807-1873**

February 3, 1853

## Papers

Letter to [Joseph Henry]

**Unidentified**

April 22, 1853

Letter to Joseph Henry

**Schoolcraft, Henry Rowe, Mrs.**

October 10, [1853]

Letter to Prof. Henry

**Henry, Joseph, 1797-1878.**

January 26, 1855

10-1/4x7-3/4

Letter to T[homas] M[ayo] Brewer

Smithsonian Institution, A.L.S. 3p. Reference to abusive article in Putnam's. Concerns Smith. Inst. and a congressional committee. Refers to Gray, Jewett, Rhees, Upham.

**De Bow, J. D. B. (James Dunwoody  
Brownson), 1820-1867**

October 21, 1855

Letter to Prof. Henry

**Henry, Joseph, 1797-1878**

November 25, 1856

8-1/4x5-1/4

Letter to Brantz Mayer, Baltimore

A.L.S. 1p. Asks for manuscript of Humboldt.

**Boffin, M. F.**

May 20, 1858

Letter to [Joseph] Henry

**Henry, Joseph, 1797-1878**

February 8, 1859

10-1/4x8

Letter to B[enjamin] F. Wade

A.L.S. 1p. and end. Would like to meet Lane before he leaves the county. Does not know two other men.

**Henry, Joseph, 1797-1878**

October 11, 1859

9 3/4 x 7 3/4

Letter to Al[exander] C[atlin] Twining, New Haven

Smithsonian Institution, L.S. 1p. end. Will be pleased to receive Twining's materials on the aurora.

**Henry, Joseph, 1797-1878.**

October 20, 1860

9-3/4x7-1/4

## Papers

Letter to A. I. Crossman

Wash., D.C.; A.L.S. 1p. Thanks Crossman for Z[achariah] Allen's Memorial of Roger Williams and a specimen of root from William's grave.

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**Henry, Joseph, 1797-1878**

January 5, 1861

Letter to Robert Hare

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**Henry, Joseph, 1797-1878**

March 21, 1861

10x7-3/4

Letter to H. B. Anthony

L.S. 2p.and end. Wishes maps printed with Newberry's report on the Colorado country.

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**Henry, Joseph, 1797-1878.**

March 22, 1861

9-3/4x8

Letter to Cha[rle]s E. Ranlett, Thomaston,  
Maine

Wash., A.L.S. 1p. Thanks for information on storms in Labrador and Greenland.

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**Henry, Joseph, 1797-1878**

July 18, 1861

Letter to William Mitchell

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**King, Charles, 1789-1867**

October 10, 1861

Letter to Prof. Henry

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**Henry, Joseph, 1797-1878.**

August 8, 1862

9-1/2x5-1/2

Letter to A. L. Holley

Washington, D.C. A.L.S. 1p. Will write Gen. Sabine. "Best wishes for the success of your mission."

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**Henry, Joseph, 1797-1878.**

August 8, 1862

11x9-1/2

Letter to Maj. General [Sir Edward]  
Sabin[e], London

A.L.S. 3p. Concerning E. A. Stevens and his steam boat. Introduces A. L. Holley. Iron clad steam battery of Stevens'.

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**Henry, Joseph, 1797-1878**

December 15, 1862

10 1/2 x 8 1/4

Letter to [Alexander Catlin] Twining, New  
Haven

## Papers

Smithsonian Institution, A.L.S. 1p.end. Encloses letter from J.P. Lesley of A.P.S. in reply to inquiries about Girard College (wanting). Politics involved in running institutions.

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**Alexander, J. H. (John Henry),** January 25, 1864  
**1812-1867.**

Letter to Prof. Henry

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**Leidy, Joseph, 1823-1891** March 8, 1864  
Letter to Prof. Henry

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**Dawson, J. M.** October 28, 1864  
Letter to Prof. Henry

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**Newmarch, William, 1820-1882** January 21, 1865  
Letter to Joseph Henry

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**Henry, Joseph, 1797-1878** December 22, 1866 8x5  
Letter to Pliny Earle, Northampton,  
Massachusetts

A.L.S. 2p.and end. Suggests the report on the Northampton Hospital for the Insane be presented to European institutions.

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**Henry, Joseph, 1797-1878** March 26, 1867 10x7-3/4  
Letter to Ja[me]s Orton, Rochester, New  
York

Washington, L.S. 2p. Cannot help him in his proposed expedition to Ecuador and Peru, due to losses by fire suffered by the Smithsonian.

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**Henry, Joseph, 1797-1878.** December 5, 1868 8-7/8x5  
Letter to A. L. Child, Glendale, Nebraska

Smithsonian Institution, L.S. 1p. Regrets omitting Child's use of rain guage in 1867.

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**Saussure, Henri de, 1829-1905** May 15, 1871  
Letter to Prof. Henry

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**Henry, Joseph, 1797-1878.** February 24, 1872 10-3/4x8-1/2

## Papers

Letter to Mrs. C. W. Pennock, Howellville,  
Pennsylvania

Washington, L.S. 2p. Wishes to have the collection of her husband for the Smithsonian.

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**Arrow, Fred, (Frederick)**

August 27, 1872

Letter to Prof. Henry

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**Henry, Joseph, 1797-1878**

December 19, 1872

9-3/4x7-3/4

Letter to James Orton, Poughkeepsie, New  
York

Washington, L.S. 2p. Best wishes for the success of his expedition and attempt to help him.

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**Agassiz, Alexander, 1835-1910**

October 5, 1874

Letter to [Joseph] Henry

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**Henry, Joseph, 1797-1878.**

October 10, 1876

10x8

Letter to Jno. A. Lynch, Washington, D.C.

Washington, D.C., L.S. 1p. Concerning proposed changes to the Capitol.

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**Maclean, John, 1800-1886**

May 13, 1878

Letter to W. J. Rhees

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**Bache, A.D., (Alexander Dallas),  
1806-1867**

January 5

Letter to Prof. Henry

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**Humphreys, A. A., (Andrew Atkinson),  
1810-1883**

February 2

Letter to Joseph Henry

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**Horsford, Eben Norton, 1818-1893**

Wednesday

Letter to Carrie [Henry]

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**Wilson, Daniel, Sir, 1816-1892**

Saturday

Letter to Prof. Henry

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## Papers

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**Harvey, William H.(William Henry),1811-1866.** n.d.

Note to Mrs. Henry

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**H[enry], J[oseph], Henry, Joseph, 1797-1878** n.d. 3-3/4x8

Affidavit that Dr. Robert Hare "is one of the most distinguished chemists of our country"

A.D.with initials. 1p.and end.

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**Henry, Joseph, 1797-1878** n.d.

Letter to ?

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