

February 21, 1846

I am just now much engaged in preparing for a public lecture in aid of the Princeton church. My subject is the electrical telegraph and I must construct a model make my notes and all preparation before tomorrow evening.⁸ Therefore

In haste yours
Joseph Henry

P.S. Enclosed I send you the bill for printing 600 copies of the Review. 450 were sent to you and the remainder I have on hand with the exception of those I have given to my class.

J.H.

⁸ Henry and other members of the community presented a series of lectures at the College Museum in order to raise money for the Presbyterian Church. Henry's was the first of the series, as noted in the *Newark Daily Advertiser*, January 31, 1846. (See also the letter of that date, Henry to James Henry, above, note 11.)

On February 20, 1846, William A. Henry

wrote his uncle, James Henry: "Last Wednesday papa lectured on the magnetic telegraph in the museum to aid in defraying the debt of the church and on last Wednesday Uncle Stephen on astronomy. The ladies of the church had a sale of refreshments in the same room & Mrs Joseph Henry took an active part" (Mary Henry Copy, Family Correspondence, Henry Papers, Smithsonian Archives).

EXCERPT, DIARY OF JOHN R. BUHLER¹

General Manuscript Collection, Firestone Library, Princeton University

Saturday. Feb. 21st [1846].

... Prof. HENRY lectures at 11. on *Electro-Magnetism* continued. Showed us his huge Magnet & to show its power made it lift a number of us—equivalent to 3500 lbs.² Such a sneezing & coughing as was projected upon the diaphragm of each member by the evolution of the hydrogen from the Batteries. The "familic sense"³ became tortured & wrung until everybody's eyes became red & gave forth water. HENRY⁴ sticks it into MORSE. Says

¹ John Robert Buhler (1829–1886), a senior at Princeton. The son of a wealthy plantation owner, Buhler returned to his family estate near Baton Rouge after graduation. He practiced law for a time in New Orleans. At the beginning of the Civil War Buhler served briefly with the Confederate forces on the staff of General Breckinridge. After the Civil War he served as deputy sheriff in New Orleans. Alumni Files, Princeton University Archives. *New Orleans Times-Democrat*, May 21, 1886; John Smith Kendall, "Chronicles of a Southern Family," *The Louisiana Historical Quarterly*, 1946, 29:284–290.

His two-volume diary, entitled "My Micro-

scope," covers the period from October 30, 1845, through June 24, 1846, and is frequently cited in histories of Princeton such as *Wertenbaker*. We are printing excerpts of several diary entries which mention Henry.

² The large electromagnet Henry constructed in 1833 (*Henry Papers*, 2:122–123, 130–131, 137). See "Record of Experiments" for February 21, 1846, immediately below.

³ The sense of smell. *Oxford English Dictionary*.

⁴ From here to the end of the excerpt, this material appears with minor variations in *Wertenbaker*, p. 222.

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M's Assistant *Vail* has lately published a book—purporting to be a history of *The Telegraph*⁵ & hasn't mentioned him at all in it—although it was through communications & instructions freely made by him—that M's telegraphic scheme came to a consummation. . . .

⁵ Alfred Vail, *The American Electro Magnetic Telegraph* (Philadelphia, 1845). See

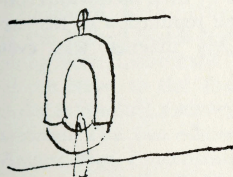
above, Henry to Bache, November 12, 1845, and Bache to Henry, November 16, 1845.

"RECORD OF EXPERIMENTS"

Henry Papers, Smithsonian Archives

Feby 21st 1846

Lifting power of the large magnet constructed in 1833



Tried to day the lifting power of the large magnet belong to the apparatus of the college constructed by my self in <1843> 1833. This lifted at the time of its first construction 3600 lbs with the large battery of 88 zinc plates arranged as 4 plates¹ but I had supposed that the insulation had been injured by some accident

in moving the apparatus. In this however I was mistaken for it was found on trial to day that it was still capable of sustaining 3500 lbs.² The estimation was roughly made but the sum stated is within the truth eight men³ stood on a plank placed across the scale pan and three men pressed by their weight on the end of the iron lever. The magnet in this experiment was excited by

¹ For an account of the large electromagnet, see *Henry Papers*, 2:123n, 130–131. The weight the electromagnet could lift was dependent on the current and thus on the size and configuration of the battery. In 1833, Henry had used the battery described in *ibid.*, pp. 100–101. (A published account with illustrations appeared as "Contributions I: Battery.") The present attempt was made with only twenty-two of the plates arranged as one pair, as described later in this entry.

In 1831 Henry constructed a similar electromagnet for Yale College (now in the possession of the National Museum of American History, Smithsonian Institution). This magnet could lift approximately two thousand pounds. Partly on the basis of this work, Henry came

to the attention of the scientific community of the United States, and in particular to the College of New Jersey when this institution was searching for a Professor of Natural Philosophy in 1832. For this earlier apparatus, see "An Account of a Large Electro-Magnet, Made for the Laboratory of Yale College," *Silliman's Journal*, 1832, 20:201–203, and *Henry Papers*, 1:324.

² Henry reaffirmed this figure in his article, "Magnetism," for the supplementary volume of the *Encyclopaedia Americana* (14:421). He was in the process of composing this article in the spring of 1846; see Henry to James W. Alexander, March 14, 1846, below.

³ That is, his students. See the Buhler diary entry of this date, immediately above.