

# JOSEPH HENRY

## Advocate of Basic Research

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In 1852, six years before his celebrated series of debates with Abraham Lincoln, Senator Stephen A. Douglas of Illinois engaged in another debate, much less famous, but no less significant--at least for the future of the Smithsonian Institution.

Douglas's opponent was Joseph Henry, the Smithsonian's first Secretary. The issue in contention concerned a vital question: Was the Smithsonian to be a cultivator of basic research, or was it to support only research that was obviously practical and financially rewarding?

The debate occurred at a meeting of the United States Agricultural Society at the Smithsonian in June 1852, a meeting held to advocate the establishment of a department of agriculture within the federal government. Henry was already unhappy with Douglas. While campaigning for the presidency in 1851, Douglas had criticized the Smithsonian for wasting its funds on such esoteric research as studies of the moon rather than on something useful, such as agriculture. Henry had responded that Douglas's criticism might be valid "if the highest cravings of the human soul were confined to the desire for good potatoes."

Now, a year later, Douglas rose again to attack the Smithsonian for its preoccupation with research of "no practical bearing," such as studies of "sea weeds and such trash." Henry responded angrily and passionately. According to a press account, he announced that he would rather blow up the Smithsonian and send the funds back to England than have the bequest used to establish an agricultural society, as Douglas had suggested.

In that press account, Henry expressed his heartfelt and fundamental belief in the linkage between basic research and later application: "All knowledge was practical, how abstruse soever it might to the uninitiated appear, and in good time would always vindicate itself in subserving the practical wants and necessities of mankind." As an example, he offered Benjamin Franklin's experiments in electricity, which were the foundation (modestly passing over his own contributions) for the invention of the telegraph.

Whether it was because he was impressed by the substance of Henry's impromptu defense or by its passion, Douglas offered an olive branch. The two men apologized to each other in private for the vehemence of their remarks and publicly tried to smooth over their differences. (Douglas would become a Smithsonian Regent in 1854, remaining on the board until his death in 1861.)



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

Members of the scientific community, however, recognized the significance of what had transpired. One wrote to Henry:

This attack was a crisis in your life & in the fortunes of the Smithsonian-- You met it with the spirit of a man and the fidelity of an officer-- You have achieved [sic] a noble triumph--the triumph of truth over error, of honor over policy, of knowledge over pretention and quackery. And you did it at the right moment; when to have left it undone would have been to lose an opportunity never to be recalled.

Henry also recognized its importance. He emerged from the debate with Douglas with renewed self-confidence in his interpretation of James Smithson's intent, in the correctness of his program, and in the ultimate ineffectualness of attacks upon him and his program.

Later that year, Henry provided another defense of basic research, expanding upon his remarks to Douglas. Basic research was "profitable" when that word was defined properly, Henry explained:

The true, the beautiful, as well as the immediately practical, are all entitled to a share of attention. All knowledge is profitable; profitable in its ennobling effect on the character, in the pleasure it imparts in its acquisition, as well as in the power it gives over the operations of mind and matter. All knowledge is useful; every part of this complex system of nature is connected with every other. Nothing is isolated. The discovery of to-day, which appears unconnected with any useful process, may, in the course of a few years, become the fruitful source of a thousand inventions.

In 1853, still mindful of Douglas's denigrating "sea weeds" remark about Smithsonian support for research on marine algae, Henry wrote: "It is in the study of objects considered trivial and unworthy of notice by the casual observer that genius finds the most important and interesting phenomena." He pointed out how Isaac Newton's study of soap bubbles eventually led to the wave theory of light and how Luigi Galvani's research on the muscular contraction of a frog led to a new branch of science: electrochemistry.

For more than thirty years, Henry insisted that basic research was of fundamental importance to American society, rather than a luxury. Perhaps that insistence is Henry's greatest legacy to succeeding generations.

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