

Quotations 1

Science as Foolishness

1. In debate during February 21, 1861, on an item that would appropriate \$6000 to the Smithsonian Institution, Senator Simon Cameron said, "I am tired of all this thing called science here. . . . We have spent millions on that sort of thing for the last few years, and it is time it should be stopped."

2. "We hope that Professor Langley will not put his substantial greatness as a scientist in further peril by continuing to waste his time, and the money involved, in further airship experiments. Life is short, and he is capable of services to humanity incomparably greater than can be expected to result from trying to fly . . . For students and investigators of the Langley type there are more useful employments" (*The New York Times*, Dec. 10, 1903, editorial page).

3. "The demonstration that no possible combination of known substances, known forms of machinery, and known forms of force can be united in a practical machine by which man shall fly long distances through the air, seems to the writer as complete as it is possible for the demonstration of any physical fact to be" (Simon Newcomb, eminent American astronomer [1835-1909] quoted by Arthur C. Clarke, *Profiles of the Future* [New York: Harper & Row, 1962] 2-3).

4. "I have always consistently opposed high-tension and alternating systems of electric lighting . . . not only on account of danger, but because of their general unreliability and unsuitability for any general system of distribution.

"There is no plea which will justify the use of high tension and alternating currents, either in a scientific or a commercial sense. They are employed solely to reduce investment in copper wire and real estate" (Thomas A. Edison, "The Dangers of Electric Lighting," *North American Review*, Nov. 1889, pp. 630-633).

5. Aristotelian professors who were contemporaries of Galileo said, concerning his discovery: "Jupiter's moons are invisible to the naked eye, and therefore can have no influence on the earth, and therefore would be useless, and therefore do not exist" (A. Williams-Ellis, *Men Who Found Out* [New York: Coward-McCann, 1930] 43).

6. Criticizing Robert Goddard's pioneering rocket research, a New York Times editorial in 1921 said, "That Professor Goddard with his 'chair' in Clark College and the countenancing of the Smithsonian Institution does not know the relation of action to reaction, and of the need to have something better than a vacuum against which to

react—to say that would be absurd. Of course he only seems to lack the knowledge ladled out daily in high schools” (M. Lehman, *This High Man, The Life of Robert H. Goddard* [New York: Farrar, Straus, & Co., 1963] 111).

7. In 1939, U.S. Rear Admiral Clark Woodward said, “. . . As far as sinking a ship with a bomb is concerned, you just can’t do it” (Ralph L. Woods, *American Legion Magazine*, October 1966, p. 29).

8. In December 1945, Dr. Vannevar Bush said of intercontinental missiles, “There has been a great deal said about a 3000-mile high-angle rocket. In my opinion such a thing is impossible for many years. The people who have been writing these things that annoy me have been talking about a 3000-mile high-angle rocket shot from one continent to another, carrying an atomic bomb and so directed as to be a precise weapon which could land exactly on a certain target such as a city.

“I say, technically, I don’t think anyone in the world knows how to do such a thing, and I feel confident that it will not be done for a very long period of time to come. . . . I think we can leave that out of our thinking. I wish the American public would leave that out of their thinking” (Arthur C. Clarke, *Profiles of the Future* [New York: Harper & Row, 1962] 9).

9. In 1945, Admiral Leahy told President Truman the atomic bomb “is the biggest fool thing we have ever done. . . . The bomb will never go off, and I speak as an expert in explosives” (Harry S. Truman, *Memoirs*, Vol. I [New York: Doubleday and Co. 1955] 11).

10. Commenting on the proposal to drive a steamboat by a screw propeller, Sir William Symonds, Surveyor of the British Navy, commented in 1837, “. . . even if the propeller had the power of propelling a vessel, it would be found altogether useless in practice because, the power being applied in the stern, it would be absolutely impossible to make the vessel steer” (W. C. Church, *The Life of John Ericsson* [New York: Charles Scribner’s Sons, 1890] 90).

11. In 1913, Lee de Forest, inventor of the audion tube, which made radio broadcasting possible, was brought to trial on charges of using the U.S. mails fraudulently to sell public stock in the Radio Telephone Company, purported to be a worthless enterprise. In court, the district attorney charged: “De Forest has said in many newspapers and over his signature that it would be possible to transmit the human voice across the Atlantic before many years. Based on these absurd and deliberately misleading statements the misguided public . . . has been persuaded to purchase stock in his company. . . .”

DeForest was acquitted, but the judge advised him “to get a common garden variety of job and stick to it” (L. Archer, *History of Radio* [Washington, DC: American Historical Society, 1938] 110).

12. Aristotle maintained that women have fewer teeth than men; although he was married twice, it never occurred to him to verify this statement by examining his wives' mouths. (Bertrand Russell on the importance of experiment.)

13. When I was a boy of 14, my father was so ignorant I could hardly stand to have the old man around. But when I got to be 21, I was astonished at how much he had learnt in 7 years. (Mark Twain)

14. The world was created on October 22, 4004 B. C. at 6 o'clock in the evening. (Irish Archbishop James Usher in 1742.)

Quotations 2

Science in Our Culture

15. Science and technology will play the key role. They will be of decisive significance in the competition between the two systems. (Leonid Brezhnev, Soviet ex-president and general secretary)

16. The splitting of the atom has changed everything save our mode of thinking, and thus we drift toward unparalleled catastrophe. (Albert Einstein)

17. Scientists should be on tap but not on top. (Winston Churchill)

18. That's one small step for a man, one giant leap for mankind. (Neil Armstrong stepping onto the moon, July 1969)

19. Socialism is inconceivable without engineering based on the latest discoveries of modern science. (V. I. Lenin, one of the major architects of Soviet communism; died 1924.)

20. It is science alone that can solve the problems of hunger and poverty, insanitation and illiteracy, of superstition and deadening custom and tradition, of vast resources running to waste, of a rich country inhabited by starving people. (J. Nehru, prime minister of India from the beginning of its independence in 1947; died 1964)

21. The whole of science is nothing more than a refinement of everyday thinking. (Albert Einstein)

22. I have one further observation to make, and that is that you scientists have gotten a long way ahead of human conduct, and until human conduct catches up with you, we are in a precarious way unless you scientists slow up a little and let us catch up. (Senator Johnson of Colorado at hearings before the Special Committee on Atomic Energy. U.S. Senate, 79th Congress, first session)