EDITOR'S NOTE

"Those who cannot remember the past are condemned to repeat it," observed philosopher George Santayana in his five-volume opus, *The Life of Reason*. Santayana wrote those oft-quoted words (actually, oft-misquoted—usually the aphorism is rendered as "Those who do not know history are condemned to repeat it") almost a hundred years ago, but they are still as true as ever.

Indeed, they are even truer than they're usually given credit for. Santayana's maxim is most often invoked in the world of politics—applied to legislative wrangling, wartime strategizing, and (as we are all only too aware in this presidential election year) civic decision-making. Even the most conscientious voter would probably agree with 19th-century French satirist Alphonse Karr's assertion that "the more things change, the more they stay the same." There are only so many ways to strike a diplomatic compromise or to make an appeal to constituents or to wage figurative (or literal) battle. In politics, therefore, it's easy to see that one must be a student of the past in order to master the future. Today's global leaders ignore at their peril the lessons to be learned from Nero and Nehru, from Lincoln and Louis XIV.

Science, however, is more usually regarded as a purely linear pursuit—we know more this year, this decade, this century, than we did last year, a decade ago, a century ago. And, we are confident, we'll know more next year and a decade and a century hence than we do today.

In 1950, for example, it was thought that stress and spicy food caused stomach ulcers. Now we know that a bacterium is to blame. In 1850, before Joseph Lister elucidated the principle of antisepsis, a surgeon might go right from the street or the stable to the operating table—which, in rural areas, was often a kitchen table. And, as one of the features in this issue points out ("Heart Failure," on page 34), it was long thought that the heart was the seat of emotion. It wasn't until the 1600s that William Harvey proved the heart's function is to circulate blood throughout the body.

Given the inexorable progress in biomedical research, what possible relevance could George Santayana's injunction have to science? Why should we bother to study what used to be "fact" but is now, in fact, known to be wrong? What could, say, a geneticist in the year 2000 possibly have to learn from Antoni van Leeuwenhoek (1632-1723), whose single-lensed microscopes provided the first glimpse human eyes had ever seen of one-celled life, or from Gregor Mendel (1822-1884), whose simple though elegant experiments with pea plants first suggested the existence of genes?

A lot, according to Matthew Megill, the author of "Heart Failure." Megill is a 2000 graduate of Dartmouth College, and this article was adapted from his senior thesis—which won two classics prizes. He has explored how it was that the great 2nd-century Greek physician Galen failed to discern the heart's true function, for Galen knew much about the organ's structure, and none of the experiments Harvey conducted would have been beyond the methodologies of the 2nd century. The apparent reason for Galen's failure, Megill posits, provides a powerful lesson for scientists of any era: to be sure that cultural bias doesn't get in the way of careful observation and experimentation.

Learning about the history of science can be more than instructive—it can also be entertaining. Some people don't need to be sold on the fact that science is fascinating—for example, the enthusiastic researchers who are the subject of another feature in this issue ("Battling the CF Monster," on page 38). But too many nonscientists are convinced that science is dry and daunting.

Yet consider the fact that a book called *Microbe Hunters*, written in 1926 by Paul De Kruif, has been in print nearly constantly for the past 74 years. I happened to notice recently that the book—which is about the early giants of microbiology (including van Leeuwenhoek)—is described in customer reviews on Amazon.com as "humorous" and "hard to put down." *Microbe Hunters*—which is indeed a good read—betrays its age socially (in unenlightened racial attitudes) and in occasional scientific lapses (antibiotics hadn't even been discovered when it was written), but it's up-to-the-minute in communicating the excitement of science.

That's what we try to do in Dartmouth Medicine as well. And although we haven't been at it quite as long as 74 years, with this issue we begin our 25th year of publication!

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