

## Faraday's Advice to the Lecturer

Last year was the bicentennial of the birth of Michael Faraday, generally acclaimed as the founder of electrochemistry. Faraday entered the Royal Institution (London) as a laboratory assistant in 1813 and became Director of Laboratory in 1825. In 1834 he demonstrated the proportionality between electrical charge and resulting chemical change, thereby giving us the Faraday constant. He also coined the words ion, anion, cation, electrode, cathode, and anode. Faraday's scholarly contributions have helped to shape the chemical sciences, including analytical chemistry.

A number of organizations held scientific symposia during 1991 in commemoration of Faraday's scholarly works. As the tricentennial of his birthday gets under way, I write to remember him for a less widely recognized quality: Faraday was a professor of natural philosophy and a superb lecturer. His philosophy of lecturing has not lost its relevance over the years and is worth remembering by those who lecture in coming years. The following are excerpts from letters by Faraday to his friend Benjamin Abbott, collected in an 1869 biography (*The Life and Letters of Faraday*) prepared by the Royal Institution and presented in a 1960 anthology, *Advice to a Lecturer*.

On the lecturer: "A lecturer should appear easy and collected, undaunted and unconcerned, his thoughts . . . and his mind clear for the contemplation and description of the subject. His action should be slow, easy, and natural . . . changes of the posture of the body, . . . to avoid the air of stiffness or sameness . . . His whole behavior should evince a respect for his audience, and he should in no case forget that he is in their presence. . . . he should never, if possible, turn his back to them, but should give them full reason to believe that all his powers have been exerted for their pleasure and instruction."

On his delivery: "The most prominent requisite to a lecturer, although perhaps not really the most important, is a good delivery; for though to all true philoso-

phers science and nature will have charms innumerable in every dress, yet I am sorry to say that the generality of mankind cannot accompany us one short hour unless the path is strewn with flowers. In order therefore, to gain the attention of an audience, . . . pay some attention to the manner of expression. The utterance should not be . . . hurried, but conveying ideas with ease . . . and infusing them with clearness and readiness into the minds of the audience."

On diction: "A lecturer should endeavor . . . to obtain . . . the power of clothing his thoughts and ideas in language smooth and harmonious and at the same time simple and easy. His periods should be . . . complete and expressive, conveying clearly the whole of the ideas . . . If they are long or obscure, . . . they give rise to a degree of labor in the minds of the audience which quickly causes lassitude, indifference, or even disgust."

On duration: "A lecturer should exert his utmost effort to gain completely the mind and attention of his audience, and irresistibly make them join in his ideas to the end of the subject. He should endeavor to raise their interest at the commencement of the lecture and by . . . gradations . . . keep it alive as long as the subject demands it. No breaks or digressions foreign to the purpose should have a place . . . and no opportunity should be allowed . . . in which their minds could wander . . . Digressions take the audience from the main subject and then you have the labour of bringing them back again (if possible). For the same reason (namely that the audience should not grow tired) I disapprove of long lectures. One hour is enough for anyone . . ."

Faraday offers good advice to professors, industry leaders, and conference speakers. I am grateful to Dudley Herschbach of Harvard University for providing a copy of *Advice to a Lecturer*.

