patents for the electrolytic production of aluminum were not issued until April 2, 1889, his famous discovery occurred on February 23, 1886 (program 19); and Pasteur's mechanical resolution involved sodium ammonium racemate not the free acid (program 9).

Hoffmann and his collaborators have admirably succeeded in their goals of delineating chemistry as a human activity motivated by curiosity and in demonstrating its relevance to modern life. I warmly recommend their series not only to college students and their instructors but also to anyone curious about the basic principles of "the central science" and its role in our society.

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Drinking Water Health Advisory: Pesticides

United States Environmental Protection Agency Office of Drinking Water Health Advisories. Lewis Publishers: Chelsea, MI, 1989. xiv + 819 pp. 16 × 24 cm. $79.95.

In these days of rising and often misdirected public concern about synthetic chemicals in water supplies and foodstuffs, chemistry teachers are likely targets of questions about the pesticides and herbicides in common use. Here is an authoritative, conveniently collected set of status reports on 50 compounds with potential for causing adverse health effects in exposed humans. These are substances that already have been found in drinking water or are likely candidates for such contamination.

The materials are listed alphabetically by generic names with CAS No., structural formula, synonyms, uses, properties, environmental fate, pharmokinetics, health effects, analytical methods, and treatment technologies.

The book would better serve the needs of novitiates if there were an index of the synonyms. Not all of us remember that Sevin, a pesticide widely used in family gardens, also is *carbaryl*, the identification in this Health Advisory. This omission may retard quick searching of the book, but it doesn't lessen the great value of the provided information once it is located.

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My Life in the Golden Age of America

Malcolm Dole. Vantage Press: New York, NY, 1989. ix + 207 pp. Photographs. 14 × 21 cm. $14.95

This author is a good storyteller and provides a thoroughly interesting report on the chemistry he learned at Harvard and what he had to learn elsewhere in experiences around the world that early on took him to Peter Debye's laboratory in Leipzig. His own professional development mirrors the rise of graduate education in our field over 60 years in which he became an important contributor with early textbooks on statistical thermodynamics and electrochemistry. He rose through the academic ranks at Northwestern University, retiring from there to become Robert A. Welch Emeritus Professor of Chemistry at Baylor University. More recently, he has been a distinguished member of the Santa Clara Valley ACS section and has served as a consultant for laboratories in that area.

Dole departed from the academic scene to take part in the Manhattan Project during the war years. His research interest in polymer chemistry, especially in radiation effects, led to industrial consultantships with commercial application of his basic findings. He also takes pride in his experimental detection of differences in the atomic weights of oxygen in air and water that led to the change in the atomic weight scale now based on $_{12}C$ rather than oxygen.

Among the many cheerful anecdotes is Dole's pursuit on his bicycle of a young man who had lifted his wallet from a hip pocket. Recovery of the wallet led to national news coverage. In Waco the local paper headlined "Baylor Chemistry Professor Dissolves Robbery Attempt"; elsewhere thieves were warned not to mess around with Dole.

Chemistry teachers and their students will gain educational values from this book scientifically. It also will serve as a worthy model for clarity in composition.

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The Art and Science of Lecture Demonstration

Charles Taylor. Adam Hilger: Bristol, England; Philadelphia, PA, 1988. xiv + 188 pp. Figs. 13.8 × 21.5 cm. $13.95 paper.

When former students visit me, the parts of my lectures that they invariably recall most vividly are my lecture demonstrations, usually the more spectacular ones, even though in some cases more than three decades have elapsed. Indeed, the "live" lecture demonstration is a most effective means of communication, even in this era of film, television, and other varieties of "canned" media. According to Charles Taylor, Professor of Experimental Physics at London's Royal Institution and Emeritus Professor of Physics at the University College, Cardiff, Wales, "It seems to work with all age groups and is a great way of inculcating a sense of excitement about science, especially in children".

In 1985 the Royal Society established a special commission to study the problem of increasing the public's understanding of science, a problem which has been discussed and debated widely in the wake of the rampant epidemic of chemophobia that is sweeping the United States and other developed countries. In the committee's report (*The Public Understanding of Science;* The Royal Society: London, 1985) the scientific establishment of the United Kingdom gave full approval to the presentation of lecture demonstrations to juvenile audiences and provided the impetus for Taylor's latest book, which incorporates the substance of the Gregynog Lectures that he delivered at the University College of Wales, Aberystwyth during 1987–1988.

In the "Prologue" Taylor states, "My principal purpose [in writing this book] is to encourage teachers and lecturers once again to consider the technique [of lecture demonstration, the use of which has lately experienced a decline] seriously and to take the time and trouble to illustrate their lessons and lectures. Since I am a physicist I have confined my illustrations to physics, but most of the principles discussed apply equally well whatever branch of science is being taught."

Like Gaul, Taylor's volume is divided into three parts. Part 1, "The Growth of the Art" (47 pp), examines the history of demonstrations from the time of Pythagoras to the present day, with details of some of the famous demonstrations of the past (by John Tyndall, John Theophilus Desaguliers, Thomas Young, Sir Humphry Davy, Michael Faraday, Sir James Dewar, Hermann von Helmholtz, D. C. Miller, Sir W. Lawrence Bragg, etc., who are limned in biographical sketches) that can still be used very effectively. It also includes several examples of more recent demonstrations, including those on television. Part 2, "The Science behind the Art" (38 pp.), considers in detail the problems of transferring information from the lecturer to the audience (the psychology of lecturer–audience interactions). It also surveys various types of teaching aids which may compete with or complement demonstrations (slides, tape-slide combinations, closed-circuit television, video recording, video discs, and microcomputers) and deals with the most useful methods for integrating these techniques into a demonstration lecture. Part 3, "The Practice of the Art" (68 pp), the longest part of the book, deals with the crucial, practical details of presenting a successful demonstration lecture such as hints on how to get started, care in presentation, choosing the correct apparatus size, coping with disasters, taking a lecture on tour, how to keep the attention of an audience varying in age from 7 to 70, audience participation, and safety. This copiously illustrated book is replete with photographs or drawings of historical equipment and manuscript notes.

The "Epilogue" (4 pp) discusses the future of the lecture demonstration and the all-important need to increase the public understanding of science and technology. A list of references (3 pp), dating from 1709 to 1987; an index of demonstrations (3 pp, 58 demonstrations), classified as "visual aids using nonconventional apparatus," "analogue demonstrations," and "real experiments;" and a name and subject index (5 pp) conclude this lucid, entertaining, highly recommended, and most attractively priced collection of reminiscences, advice, recipes, and experiences by "a master of the lecture demonstration," as 1967 Nobel chemistry laureate Sir George Porter calls the author in his foreword.

During the last few years a number of books of lecture demonstrations have appeared, of which I have reviewed the following: Shakhashiri, Vols. 1, 2, & 3, *J. Chem. Educ.* **1985,** *62,* A31; **1986,** *63,* A209; **1990,** *67,* in press. Summerlin & Ealy, Vols. 1 & 2,

(*Continued on page A56*)