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## Review: 'Essays on the History of Organic Chemistry in the United States, 1875-1955'

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## The Bookshelf

### ORGANIC CHEMISTRY

DEAN STANLEY TARBELL, ANN TRACY TARBELL  
*Essays on the History of Organic Chemistry  
in the United States, 1875-1955* (Folio Press,  
Box 1807, Station B, Vanderbilt University,  
Nashville, TN 37235, 1986; x + 434 pp; illus.;  
\$19.95)

While scholars perhaps will never agree on what makes our modern civilization different from those that preceded it, it is most certain that the rise of organic chemistry and the new synthetic world that was created by this discipline was integral to this transformation. Organic chemists, working within the theoretical framework of structural and physical concepts, have provided mankind with a dazzling array of products. These new substances and materials have formed the basis of chemical and pharmaceutical industries that not only improved the quality of life but also contributed to the unprecedented prosperity of our present-day world.

Despite organic chemistry's enormous impact on modern culture, however, the discipline is only now beginning to receive the historical attention that it rightfully deserves. And while much of this current scholarship narrowly focuses on a few aspects of the field's growth, Dean Stanley Tarbell and Ann Tracy Tarbell have written a broad yet richly detailed survey in *Essays on the History of Organic Chemistry in the United States, 1875-1955*.

The authors, both of whom have had long careers in chemical research, are certainly qualified to embark on such an ambitious undertaking. While pri-

marily trained as scientists, the Tarbells are aware of and sensitive to the present-day currents in the history of science that stress institutional and social aspects as well as internal scientific developments, and they try to incorporate these external approaches into their book. Employing both primary source manuscripts and published scientific papers they have reconstructed a history of organic chemistry that outlines institutional changes, traces the genesis and modification of key ideas related to structure, valence, reactivity and synthesis, and highlights the professional careers of eminent American organic chemists.

While institutions, ideas, and individuals are the heart of this study, I was most impressed with the authors' discussion of instruments and laboratories. And although the Tarbells' work is far from definitive on this subject, their discussion is provocative in that it raises questions concerning the relationship between theory and practice as well as the role of expensive instrumentation in changing the very nature of the science. In addition to the authors' treatment of instruments, their historical survey dealing with structure, synthesis, and natural product chemistry constitutes a solid foundation of knowledge in what was until now uncharted territory.

While this study makes an important contribution to the history of chemistry, it does have several shortcomings, however. Although the Tarbells wanted to tell the story of organic chemistry to a broad audience, I doubt if their goal will be realized. To begin with, its literary quality is well below the typical prose found in general historical studies; *Essays on the History of Organic Chemistry* is at times

tedious to read and for a non-scientist probably most difficult to follow.

In going beyond style, however, there also exist in this reader's opinion serious flaws concerning the authors' attempts to place organic chemistry within its cultural context. Despite the authors' best intentions, the book fails to carefully examine in a thoughtful way the role of the external environment (war, sociological factors, the economy, and so forth) in the shaping of chemical knowledge. And the Tarbells fail to adequately explore the converse question—the social changes that were the consequences of the rise of organic chemistry and allied industries. Within many of the book's twenty-six chapters discussion centers on individuals and ideas, never placing the chemists, as well as their methods and theories within a broader and richer social context. Perhaps Daniel Kevles's *The Physicists* should be carefully read before another history of an American scientific community is written.

While the Tarbells' work is far from perfect, I do feel that it has made an important and valuable contribution to the history of chemistry. I shall draw on various chapters in the teaching of my history of science survey course, and am confident that scholars interested in the history of organic chemistry will employ it as a starting point for significant future studies.—JOHN A. HEITMANN *University of Dayton*.

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## HISTORY OF DRUGS

JEAN-CLAUDE DOUSSET, *Histoire des médicaments* (Paris, Payot, 1985; 405 pp.; illus.)

Until now there has been no general history of therapeutic drugs; the topic has always been relegated to a relatively minor place in the history of pharmacy or medicine. The only exception is the work, based mainly on German sources, of W. Schneider and his pupils, who have provided a quantitative analysis of the medical material.

This new book is, or at least its title claims it to be, a complete history of drug therapy from prehistory to the present day. In the course of his historical account (which, as of the Middle Ages, includes almost exclusively France), the author gives an historical outline for each major period, explains the predominant scientific and medical theories and then describes pharmaceutical practice and lists the

drugs used at the time. Some chapters are well organized, for instance the account of Pre-Columbian medicine, or in the seventeenth century the development of the secret remedies or the change in habits brought about by the introduction of tobacco, tea, and coffee. For the nineteenth and twentieth centuries, the most important advances in the field are related to the history of disease as well as the social and scientific background. This makes it possible to grasp the intellectual and moral thread running through these therapeutic efforts in spite of the diversity of drugs used.

However, the author's oversimplification distorts the complexity of the history of the drugs. Dousset draws on standard sources (Galen, Alexander of Tralles, Paracelsus, Lemery . . .) and thus does no more than retrace the well-trodden paths of medical history. Moreover, he often does not advance beyond anecdote and enumeration (a list of drugs). More seriously, certain aspects of the history of drugs are treated scantily, if at all: formulation above all, but also the harvest of medicinal plants, economic aspects such as markets and distribution, commercial practice and trade links between cities and countries. There is no index, and the bibliography is so meagre as to be unusable.

This is a book which may well interest the general reader but will not satisfy the serious student; the history of drugs remains to be written.—FRANÇOIS LEDERMANN, *Berne, Switzerland*.

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## GUIDE TO JARS

SERGIO ROCCHIETTA, *Antichi Vasi di Farmacia Italiani* (L'Ariete Edizioni, Milan, 1986; 172 pp., illus., price not given).

The creativity of the Italian Renaissance pervaded all media, and among its glories were the ceramics produced in the potteries of the various city-states. Particularly outstanding are examples of the tin-glazed earthenware drug jars, albarelli, spouted jars, double-handed pots, and other forms intended for daily use in hospital and public pharmacies throughout the country.

But how to tell them apart? How to know whether the pot before us is from Faenza, Castelli or Castel Durante? How to be certain that it dates from the glorious period of the mid-fifteenth to mid-