History of Medicine

It is now some 35 years since Homer W. Smith (1895–1962) began to publish from the New York University School of Medicine, with his associates Shannon, Chasis, Goldring, and others, his famous studies on the physiology and physiopathology of the kidneys, employing the clearance concept as a tool for measuring glomerular filtration rate and renal flow. Basic science laboratories and hospital clinics have rarely collaborated so effectively. Smith was to devote most of the rest of his life to these studies. His three monographs (1937, 1951, and 1956) exerted tremendous influence. Together with his many first-rate papers, they confirmed his status as the foremost renal physiologist of the first half of the 20th century. He was also well known as a stimulating teacher. This book, **Homer William Smith: His Scientific and Literary Achievements** (New York University Press, New York, 1965. 306 pp., $4.50), edited by Herbert Chasis and William Goldring, presents a varied sample from Smith's writings.

"Superficially," wrote Homer Smith, "it might be said that the function of the kidney is to make urine; but in a more considered view one can say that the kidneys make the stuff of philosophy itself." For him, at least, this was true. Despite his vigorous concentration of scientific effort, he was a biologist in the broadest sense. Where science and philosophy meet, his controlled and skeptical speculations flourished. They did not, however, stop there.

Like Huxley an agnostic, Smith was drawn as Huxley was drawn to probe into the everlasting metaphysical problems, believing nonetheless that "transcendental metaphysics is not only futile but dangerous." As remote as it is possible to be from religious dogma, he was endlessly fascinated by religion. Repelled by Humanism, he was a lower-case humanist. He believed in "human indignity" and sought the means of dignifying human life. Not only in *Man and His Gods* (1952) and *From Fish to Philosopher* (1953) but also in the unsuccessful novel *The End of Illusion* (1935) and the remarkably popular philosophical dialogue *Kamongo* (1932), he circled round and round his obsessive unanswered questions. What emerged was a sort of existential poetry, seldom profound but invariably honest, marked by courage and sometimes touched by a childlike wistfulness, all the more striking because of its "tough," candid, and wryly humorous setting.

We are assured of "his gentleness, his tact and his innate generosity." It is clear that he was greatly loved. We are also told of "personality traits of independence, and, shall we say, distance." He refused to have his portrait painted, but his *Autobiography: Boyhood Years* is extraordinarily revealing: "The Greatest Gold-Mining Camp on Earth did not offer much assurance of security in its streets and alleys, its cribs and saloons, its deep shafts with open mouths, or its long, black tunnels." Homer Smith's exploration of long, black tunnels did not cease when he left Cripple Creek. But Cripple Creek had Mount Pisgah as well, and one or another Pisgah was to draw his feet forever.

This book is a fine sampling of the varied gifts and achievements of Homer Smith. There are 20 pages of friendly tribute and 14 well-chosen selections from his books and papers, which exhibit him in every aspect of his work and thought. The book should be widely read.

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Survey of Valency

In his earlier book *Valency, Classical and Modern* (1944), W. G. Palmer devoted his introductory chapters to a brief historical review of a topic that many of the major figures of chemistry have regarded as one of the most fundamental problems of their science. In the present volume, **A History of the Concept of Valency to 1930** (Cambridge University Press, New York, 1965. 185 pp., $8), Palmer has expanded a short course of lectures given several years ago at the University of Cambridge into a most enlightening, full-length, historical survey of the concept of valency, which necessarily includes considerations of affinity and stereochemistry, both organic and inorganic. The time limitation proclaimed by the title is imposed because the author believes that it is "too early to assess the very rapid developments since 1930 in a just historical perspective."

Beginning with the early years of the 19th century, Palmer presents the views of Dalton, Wollaston, Davy, Berzelius, Frankland, Couper, Kekulé, Pasteur, Williamson, Newlands, Mendeleev, Lothar Meyer, van't Hoff, Arrhenius, Werner, Helmholtz, Bohr, Kossel, Lewis, Langmuir, Sidgwick, Pauli, de Broglie, Schrödinger, Heitler, London, and Hund, among others. The ideas of many of these men are clarified and illustrated by well-chosen excerpts from their publications, which vary in length from one or two sentences to eight pages in the case of Alfred Werner. The flavor of the works is preserved by retention of the original nomenclature and terminology. Brief biographies, references, and little-known facts serve to bring alive the personalities of the chemists whose contributions are discussed. All these factors combine to produce a slim and attractive volume. Palmer's latest opus should thus have a wide appeal and is recommended reading for students and practicing chemists as well as historians of science.

One feature of the volume that annoyed me was the seemingly inconsistent handling of the very extensive quotations. Whereas translations of the German passages are always provided, many French passages are allowed to stand untranslated. Also, the decisions about which passages should be provided in the original language seem random, and selection does not seem to have been limited to the most important passages. Nor can it be that these passages are intended to convey the flavor of the original, because Berzelius, for example, is quoted in French although his work originally appeared in Swedish. Moreover, many French and German passages are marred by an unusually high number of minor typographical errors—omission of accents and umlauts as well as misspellings.

It is unfortunate that the price of the volume will probably limit its audience inasmuch as several inexpensive paperback series that treat much of the same material in the form of essays and translations are now available [Benfey's volumes in the series "Classics of Science" (Dover) and "Classic Researches in Chemistry" (Houghton Mifflin)]. Nevertheless, it is not often that one finds a book as enjoyable, readable, and informative as this one.

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