In Memoriam D. Stanley Tarbell (1913–1999), Chemist and Historian of Chemistry

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Abstract: Dr. Dean Stanley Tarbell, Distinguished Professor Emeritus of chemistry at Vanderbilt University, where he served on the faculty from 1967 to 1981, died on May 26, 1999 in Bolingbrook, Ill. Earlier he taught for many years and chaired the chemistry department at the University of Rochester. In retirement, he and his wife, Ann Tracy Tarbell, researched and wrote articles and books on the history of chemistry in the U.S. For his writings he received the American Chemical Society's Dexter Award for Distinguished Contributions to the History of Chemistry in 1989. He was an avid reader and book collector, a linguist who taught himself Arabic, Russian, and classical Greek, and a lifelong baseball fan.

On May 26, 1999, Dean Stanley Tarbell, Distinguished Professor Emeritus of Chemistry at Vanderbilt University, renowned authority on organic chemistry and the history of chemistry, and longtime supporter of the American Chemical Society Division of History of Chemistry, died at his home in Bolingbrook, Illinois at the age of 85. Stan is survived by two sons, William Sanford Tarbell of Bolingbrook, Illinois and Theodore Dean Tarbell of Los Altos, California; a daughter, Mrs. Gadi Neumann (Linda Tracy Tarbell) of Rehovot, Israel; a sister, Elva Procopio; six grandchildren; and one great-grandchild.

Stan was born on October 19, 1913 in Hancock, New Hampshire, and he and his older sister were raised on the farm located on land owned by the family of his maternal grandmother, the Lakins, who had owned it since 1782. His father, Sanford McClellan Tarbell, a harness maker who also did metal forging and blacksmithing, and his mother, Ethel Tarbell (née Milliken), had ancestors who included several Revolutionary War veterans. Money was always in short supply, and Stan always had chores to perform and odd jobs to finance his studies, which he completed with the aid of scholarships and loans from family members, which he always repaid.

Stan attended the Thayer High School in Winchester, New Hampshire, where he took the classical or college preparatory course, including four years of Latin and several years of mathematics, history, English, French, a year of physics, but no chemistry. In 1930 he entered Harvard College, where he thought that his first-year European history course was the best course that he took there; however, he decided to major (the Harvard term was "concentrate") in chemistry because he thought it "more promising as a profession" (All quotations in this obituary are taken from Stan's autobiography, B3). He received his A.B (1934), M.A. (1935), and Ph.D. (1937) degrees from Harvard, becoming Paul D. Bartlett's first doctoral student with a dissertation on the mechanism of addition reactions of dimethylmaleic and dimethylfumaric acids. He was awarded a teaching assistantship under Louis F. Fieser for 1936–37 at Radcliffe College, Harvard's female affiliate, where he met and fell in love with senior chemistry major Ann Hoar Tracy, his future wife and collaborator, who was elected to Phi Beta Kappa, graduated *summa cum laude* and then earned her master's and Ph.D. (1941) degrees from Columbia University under Robert C. Elderfield.

After a bicycle tour of Europe during the summer of 1937, in the Fall Stan began a postdoctoral fellowship with Roger Adams at the largest producer of Ph.D. chemists in the United States, the University of Illinois, which he described as "a highly educational experience, more than any other single year of my life" and where he "became acquainted with some of the leaders in the field and also lost some of the provincialism engendered by seven years at Harvard." In the Fall of 1938 he became an instructor at the University of Rochester, where he developed a prolific research group based on his experience at Illinois and where he rose through the ranks, becoming professor (1948–62), Charles Frederick Houghton professor (1960–67), and department chairman (1964–66; "I did not like the work and responsibility particularly; there were others who could do it as well or better than I, and I preferred to spend my time on research and teaching.").

Stan married Ann on August 15, 1942 in Concord, Massachusetts. During World War II he worked on the detection of mustard gas for the National Defense Research Committee and the synthesis of antimalarial drugs for the Committee on Medical Research, while Ann helped teach biochemistry at the University of Rochester Medical School and worked in the toxicology section of the Manhattan Project at the school, where, in Stan's words, "She was making considerably more money than I was at the time." After the war, he helped design a new research laboratory to accommodate the large number of veterans returning to college studies under the GI Bill. He spent sabbatical years at Oxford (1946–47) and Stanford universities (1961–62) on Guggenheim fellowships.

Although Stan considered the period 1950–61 at Rochester "the most satisfying scientifically of my career," when he received an offer of a distinguished professorship (a title that he never liked) from Vanderbilt University in 1967, he accepted it because his physicians recommended a warmer climate for his osteoarthritis of the hip, which forced him to walk with a cane and because he felt that "a prime need in the south was the emergence of some major universities."

Figure 1. D. Stanley Tarbell (center) holding the Dexter Award in the History of Chemistry plaque. Ann Tarbell is on the right. The person on the left is unidentified (Courtesy, George B. Kauffman).

Stan retired from Vanderbilt in 1981, but he remained active in organic chemical research and in his second career in the history of chemistry, which he had begun in the 1970s. He became an active member of the American Chemical Society's Division of History of Chemistry (HIST). He served as division chairman (1980–81).

According to Stan,

> After some years at Vanderbilt, I began to feel that Ph.D. students would be better off working for my colleagues, rather than for me. My long interest in history of various kinds suggested writing a history of organic chemistry in the United States. There had been no comprehensive account of this subject for many years…. Ann, fortunately, was willing to collaborate. We felt that the best starting point was to examine the American research publications in organic chemistry. By actually looking at the actual research publications, we could find who was working in the field, what they were doing, and the significance of the work.

After Stan and Ann had made a good start on their ambitious program, during Stan's sabbatical year of 1973–74, the couple worked tirelessly at the Edgar Smith Fahs Memorial Collection in the History of Chemistry at the University of Pennsylvania, the Linda Hall Library in Kansas City, and other archives and libraries. In 1976 for the centenary of the founding of the American Chemical Society, Stan was invited to write two articles (A3, A4), which

> gave us an outline of what we were trying to do in the book…. These papers also gave us some standing in the field of the history of American chemistry, and led to numerous invitations to lecture and give papers in symposia….when we had had rough drafts of many chapters, we decided to undertake a biography of Roger Adams, which was complementary to, but separate from, our study of the history of organic chemistry in the United States…. In writing about him I was repaying some of the debt that I owed to him and his colleagues for all that they had done for me.

In my review of their biography of Adams (B1), which finally appeared in 1981, I tried to give some idea of the tremendous amount of work and effort that they had expended on it:

> Adams's governmental work, along with his participation in professional organizations, his public service activities, consulting, lecturing, editing, travelling, teaching, research and numerous honours are all discussed by the Tarbells in a masterful and scholarly fashion. They have made extensive use of the Roger Adams Archives, preserved in the University of Illinois Library in Urbana and consisting of 70 boxes and some 50,000 documents. They have also utilized books, scientific and newspaper articles, letters, telegrams, interviews, conversations, private communications, dissertations, anecdotes and other background material to present a three-dimensional, fully-referenced portrait of a multifaceted scientist–statesman and his times. They have left no stone unturned to ferret out details about their subject (They cite his stub of a ticket for a Zeppelin trip from Potsdam to Berlin dated 28 August, 1913…and menus for his ocean trip to Europe during the summer of 1936)…. Yet their meticulous account presents not just facts *per se* but draws conclusions from each bit of data that they have unearthed. This fine biography, replete with equations, structural formulas, tables and photographs, is no mere exercise in hero worship, for the Tarbells objectively analyze shortcomings in Adams's scientific work…. The history of American chemistry is still a relatively neglected area of study. We are indebted to the Tarbells for a welcome addition to this scant literature (B1(a)).

While working on their two *magna opera* (B1, B2) the Tarbells continued to present historical papers at scientific meetings. For example, Stan presented a paper, based on material for the Adams book, on the Instrumental Revolution that began in the early 1930s at a "History of Science in Education" symposium that I organized at the ACS/SAS Pacific Conference on Chemistry and Spectroscopy held on October 20, 1981 in Anaheim, California. Through the years the Tarbells became familiar figures at HIST sessions at ACS National Meetings.

In 1986 the Tarbells' book on the history of American organic chemistry (B2), more than a decade in the making, appeared, and like its predecessor, the Adams biography, it received favorable attention. In my review, I wrote,

> [U]ntil [this] welcome publication…, no full-length, comprehensive study of one of the most important fields of chemistry in America has been available. Modestly described as a collection of essays, rather than a history, because the authors "have not approached the ideal history of a science as closely as [they] would have wished," the Tarbells' latest book, nevertheless, succeeds in presenting a comprehensive view of the complex process, extending over many decades, by which organic chemistry developed in the U.S. from humble beginnings to a position of world leadership. As such, the book offers a valuable case study of how a science was introduced into what was initially a scientifically undeveloped country, took root, and grew vigorously, both qualitatively and quantitatively…. [T]he result of their prodigious labors is not a mere compilation or a long catalog of facts, names, theories, experiments, equations, and references. Rather, it is a fascinating and highly readable story of the rise of a science in the multifaceted context of social and economic conditions, the climate of intellectual opinion, and the relentless advance of technology (B2(a)).

The book's publication was supported, in part, by the ACS Division of Organic Chemistry, which offered the book to its 11,000 members at a reduced price, with the authors paying the balance of the costs. In recognition of the two books and his articles, Stan received the 1989 Dexter Award for Outstanding Contributions to the History of Chemistry

(Figure 1). His award address was titled "Ways of Writing the History of Chemistry and was presented" presented at the Fall 1989 ACS National Meeting at Miami Beach.

Stan's third and last book was an autobiography (B3) that contained as much about his mentors, students, and colleagues as about himself. With his characteristic modesty, he described its contents and his intent in writing it in a note that accompanied the autographed copy that he sent to me:

> Dear George, 4/30/97
>
> You may be interested in the enclosed book. It's not for sale and I don't want it reviewed. It is written for my family and friends, to give them an idea of what it was like to go to school in the 1920s and to college during the depression.
>
> Hope things are going well with you.
>
> Yours,
>
> Stan

Stan's more than 200 articles on organic chemistry involved a wide variety of topics—the Claisen and Fries rearrangements; organosulfur compounds; glycerol derivatives; mixed anhydrides; the structure of natural products and biologically active substances, such as the alkaloid colchicine and the antiobiotic fumagillin; kinetics and reaction mechanisms; and carcinogenesis. Stan was a consultant for the U.S. Public Health Service, the U.S. Army Quartermaster Corps, and a number of foundations and chemical companies. A member of the U.S. National Academy of Sciences, he was a member of various scientific advisory boards and governmental agencies. In addition to his ACS membership, he was a member of the Chemical Society (London), American Academy of Arts and Sciences, and the History of Science Society. In 1973 he received the ACS Georgia Section's Charles Holmes Herty Medal. His hobbies included book and record collecting; studying foreign languages (He read Dante's "La Divina Commedia" and other Italian classics in the original, but he abandoned Arabic because of the lack of reading texts with vocabularies); watching sports; and playing squash and tennis, which he abandoned in the late 1950s.

A memorial tribute to Stan would be incomplete without some acknowledgment of his wife Ann's role in his success, as he would be the first to admit. His work focused on the history of chemistry in the United States, and his wife Ann was coauthor of both of his history of chemistry books and 16 of his 22 historical articles (on four of which her name appeared first). Ann predeceased Stan on August 6, 1998 at age 82. One of the *grande dames* of the Nashville birding world, she was an active member of the Tennessee Ornithological Society, receiving its highest honor, the Distinguished Service Award, and she donated her natural history library to the Radnor Lake State Natural Area. (She had helped organize efforts to save the lake from development.) The library was dedicated in her name on October 18, 1998. By personality, training, and affection Stan and Ann formed an ideal research and writing team and spent many years of collaborative effort in various archives and libraries. They will both be sorely missed.

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A Bibliography of the Publications of D. Stanley Tarbell on the History of Chemistry

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2. Essays on the History of Organic Chemistry in the United States, 1875–1955; Folio Publishers: Vanderbilt University, Nashville, TN, 1986; x + 433 pp. (with Ann Tracy Tarbell); for an essay-review see (a) Kauffman, G. B. "The American Roots of Organic Chemistry." *Chem. Eng. News* **1987** (May 18), *65*(20), 50, 53.
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