

## Media Reviews

**Donald Frederick and Mildred Topp Othmer: A Commemorative of Their Lives and Legacies.** Edited by Arnold Thackray and Amy Beth Crow. Chemical Heritage Foundation: Philadelphia, PA, 1999. Illustrations. x + 124 pp. 15.6 × 24.1 cm. \$24.95, hardcover. ISBN 0-941901-22-X.

To most chemists, the name of Don Othmer instantly calls to mind the 27-volume *Kirk—Othmer Encyclopedia of Chemical Technology* [1], which he cofounded and coedited (1947) with Raymond E. Kirk, chairman of the Chemistry Department of the Polytechnic University of Brooklyn, New York, where Othmer was chairman of the Chemical Engineering Department (1937–1961). Their *magnum opus* vies with *Ullmann's Encyclopedia of Industrial Chemistry* [2], whose English-language counterpart it was intended to be, as the bible of chemical technology.

Othmer, whom Alec Jordan, founding editor of *Chemical Week*, called “a wonderful educator and probably the most widely known chemical engineer in the world,” is famed as the developer of Brooklyn Poly's chemical engineering program. He was also posthumously selected by his fellow chemists and chemical engineers for inclusion in “Contributors to the Chemical Enterprise: C&EN's Top 75” [3].

Othmer was born in Omaha, Nebraska on May 11, 1904, the son of a sheet-metal worker. He grew up tinkering in his father's shop, where he developed his mechanical skills and hands-on manual dexterity, which, combined with his interest in chemistry aroused in high school, along with a scholarship, led him to enroll in 1921 in the chemical engineering program at Chicago's Armour Institute of Technology. Detesting the analytical chemistry required there, in 1923 he transferred to the University of Nebraska at Lincoln, from which he received his B.S. degree in 1924. He received his M.S. (1925) and Ph.D. (1927) degrees from the University of Michigan, where he worked on heat transfer and evaporation under Walter L. Badger. As an engineer at the Eastman Kodak Company in Rochester, New York (1927–1931), he invented the Othmer still, which concentrated the acetic acid needed to produce cellulose acetate for motion picture film. Although he devised 40 patents at Kodak, he received only \$10 for each patent filed, so he struck out on his own, setting up his shop in the basement of the American Chemical Products Company in Rochester, where he built two new stills.

In September 1932, as the Great Depression worsened, Othmer joined the newly independent Chemical Engineering Department at Brooklyn Polytechnic University, where he integrated academic research with invention and private consulting. Through a career spanning more than six decades and involving extensive travel, he remained at Poly and never abandoned his devotion to teaching or his ever-increasing number of students. In 1937, the year in which his first doctoral student received his degree, Othmer became chairman of the Chemical Engineering Department. During World War II he taught many army enlistees, and his process for recovering acetic acid was used in preparing RDX cyclonite explosives.

Mildred Jane Topp, a woman of wide interests and diverse talents, was born in Omaha, Nebraska on September 13, 1907. Known to friends as “Mid,” she majored in chemistry and economics at the University of Nebraska, taught English at

Omaha's Benson High School, and earned a master's degree (1945) at Columbia Teachers College in New York City. She served there as resident buyer for Topp's, her mother's exclusive and fashionable Midwest clothing store. On November 18, 1950 she and Othmer, who had been previously married and divorced, married for a second time in Manhattan, deciding early on that they would never spend more than three days apart. During their 45-year marriage, the inseparable, childless couple, known collectively as “Midon” in the “Dear Folks” letters that they shared with friends and family, became accomplished globetrotters.

During the 1960s Don worked on various desalination processes for the U.S. Department of Commerce's Office of Saline Water. His numerous international consulting endeavors included designing a kerosene distilling plant in Burma (virtually creating the Burmese chemical industry) and designing a plant for producing fresh water and electric power in the Bahamas. His growing concern with the rapid exhaustion of the world's natural resources was reflected in his interest in exploiting differences in ocean temperatures as an alternative energy source for developing countries. His pioneering work in petroleum processes and water resource management brought him scores of invitations to conferences around the world, always accompanied by Mid. His research was applied to materials as diverse as resins, plastics, pharmaceuticals, antibiotics, waste and sewage, synthetic rubber and fibers, food, surface coatings, wallboard, sugar, salt, acetylene, petrochemicals, pigments, wood pulping, paper, gasoline, heating fuel, aluminum, titanium, and zinc, and to fields such as refrigeration, solar and other energy conversions, peat utilization, pipeline heating, and cancer research.

Longtime residents of Brooklyn, Don and Mid gave generously of their time and money to their community. In addition to his numerous honors and awards, including several honorary degrees, Don is memorialized in the Othmer Building at the American Chemical Society headquarters in Washington, DC and by the student scholarships administered in his name by the American Institute of Chemical Engineers. He was made professor emeritus in 1976, but never officially retired from Poly and was actively involved with the university until his death on November 1, 1995 at the age of 91 (Mid died in a nursing home in 1998).

The Donald F. and Mildred Topp Othmer Library of Chemical History, founded in 1998, houses archival, pictorial, and artifact collections. The Chemical Heritage Foundation's Othmer Gold Medal, the latest recipient of which was Carl Djerassi, was established to acknowledge “multifaceted individuals, who, like Donald Othmer, have made enduring contributions to our chemical and scientific heritage through exceptional activity in the areas of innovation, entrepreneurship, research, education, public understanding, legislation, or philanthropy.”

The full extent of the Othmers' philanthropy became evident upon Mid's death. In the early 1960s they each invested \$25,000 in a partnership with a family friend—legendary Omaha billionaire Warren E. Buffet, chairman of the investment and insurance holding company, Berkshire Hathaway. In 1970 they received shares of this company,



**Figure 1.** Donald Frederick and Mildred Topp Othmer wedding portrait. (Reprinted with permission from the Chemical Heritage Foundation.)

valued at \$42 per share, which by 1998 had risen to \$77,250 per share! By investing wisely and patiently and by living with practical frugality, the Othmers amassed an estate of \$800 million, which they bequeathed to the Chemical Heritage Foundation (\$100 million), the Polytechnic University (\$175 million), University of Nebraska (\$100 million), Brooklyn Botanic Garden, Brooklyn Historical Society, Long Island College Hospital (\$160 million), Planned Parenthood of New York City, Plymouth Church of the Pilgrims, and other favorite organizations.

In the book under review, Arnold Thackray and Amy Beth Crow, president and research assistant, respectively, at the Chemical Heritage Foundation, have selected essays, articles, and remembrances by themselves and 12 other authors about the Othmers. The six-section book is divided into two parts.

“Their Lives” includes (1) “A Biographical Essay” (18 pp), (2) “The Othmers in the New York Times” (3 articles about their lives and bequests, 10 pp), and (3) “Colleagues, Friends, and Family Remember Don and Mid” (11 selections, 27 pp). “Their Legacies” includes (4) “The Othmer Archives at the Chemical Heritage Foundation” (17 pp), (5) “Midon’s Institutional Beneficiaries” (7 institutions, 13 pp), and (6) “Appendices” (33 pp). The three appendices include numbers, titles, and dates (1931–1983) of Don’s 145 patents from the United States and 19 other countries, citations of his 386 publications (1925–1992) and awards. This attractive volume is copiously illustrated with 32 formal and informal portraits, journal covers featuring Don, patents, drawings, holiday greeting cards, cartoons, memorabilia, tools, equipment, and diagrams. Unfortunately, no index is provided.

As the book vividly documents, Don Othmer was a prolific educator, inventor, entrepreneur, and philanthropist, whose single-minded ingenuity and restless ambition were tempered by Mid’s graciousness and refinement. His numerous scientific achievements changed the face of chemical engineering, a still-nascent field when he began his career, and his legacy lives on through the achievements of his students. Together, the Othmers were an extremely devoted couple—devoted to each other, to their work, to their community, and to the advancement of humanity. Their works live on through their generous gifts to charities and organizations and through this book, which will be of interest to chemists and chemical engineers, historians of chemistry, chemical educators, entrepreneurs, and anyone concerned with the American and international chemical community.

#### References and Notes

1. For a review of the 4th edition (1991–1998) see Kauffman, G. B. *Am. Sci.* **1996**, *84*, 192–193.
2. For a review of the 5th edition (1985–1996) see Kauffman, G. B. *Chem. Educ.* **2000**, *5*(1), S1430-4171(00)0136-1.
3. *Chem. Eng. News* **1998**, *76* (Jan 12), 171–185.

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S1430-4171(00)05419-X, 10.1007/s00897000419a