

CHEMICAL HERITAGE FOUNDATION

LEO BREWER

Transcript of an Interview
Conducted by

James J. Bohning

at

University of California, Berkeley

on

3 April 1992

(With Subsequent Corrections and Additions)

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Leo Brewer

Leo Brewer

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LEO BREWER

1919 Born in St. Louis, Missouri, on 13 June

Education

1940 B.S., California Institute of Technology
1942 Ph.D., University of California, Berkeley

Professional Experience

Lawrence Berkeley Laboratory [Radiation Laboratory], University of California, Berkeley
1943-1946 Research Associate, Manhattan District Project

University of California, Berkeley, Department of Chemistry
1946-1950 Assistant Professor
1950-1955 Associate Professor
1955-1989 Professor
1989-present Emeritus Professor

Honors

1942 Great Western Dow Fellow
1950 Guggenheim Fellow
1953 Leo Hendrick Baekeland Award, North Jersey Section, American Chemical Society
1961 E. O. Lawrence Award, Atomic Energy Commission
1971 Palladium Medalist, Electrochemical Society
1974 Distinguished Alumni Award, California Institute of Technology
1983 William Hume-Rothery Award, Metallurgical Society AIME
1988 Henry B. Linford Award for Distinguished Teaching, Electrochemical Society
1989 Berkeley Citation, University of California, Berkeley
1991 TMS Extractive Metallurgy Science Award
1993 Fifty-year citation, American Chemical Society
1998 Fifty-year citation, American Association of University Professors

ABSTRACT

Leo Brewer begins the interview with a description of his family and his early years growing up in Youngstown, Ohio. Brewer's father worked as a shoe repairman until the Depression hit in 1929. Brewer and his family then moved to Los Angeles. Brewer became interested in chemistry through the influence of a high-school chemistry teacher. After graduating from John Marshall High School, Brewer attended Caltech. After receiving his B.S. in 1940, Brewer was advised by Linus C. Pauling to begin his graduate work at the University of California at Berkeley, where he studied under Axel R. Olsen. Upon receiving his Ph.D., Brewer immediately joined the Manhattan Project as a research associate. Brewer's job was to use models in the periodic table to determine the worst properties of plutonium. Brewer tested refractory materials, such as nitrites, carbides, lanthanides, actinides, sulfites, sulfides, and phosphides, and determined that cerium sulfide would serve as the best model. Later, Brewer predicted the electronic configuration of all the actinides. Brewer's research for the Manhattan Project found direct application at the Los Alamos National Laboratory, and was later published as part of the Manhattan Project Technical Series. In 1946, Brewer joined the faculty of the University of California at Berkeley, where he continues as an Emeritus Professor to this day. During his career at Berkeley, Brewer worked in many fields, including organic chemistry, ceramics, astrochemistry, and even geology. Within these areas, he applied his thermodynamic research, including studying high-temperature molecules present in comets and stars, and the distribution of elements in the earth's gravitational field. As an educator, Brewer taught many courses on several levels, including freshman chemistry, inorganic chemistry, thermodynamics, and phase diagram equilibration. In more recent years, Brewer and his graduate students have branched their research into metallurgy. Brewer concludes the interview with a discussion of his published papers, the future of research support and application, and thoughts on the future of education.

INTERVIEWER

James J. Bohning is currently Visiting Research Scientist at Lehigh University. He has served as Professor of Chemistry Emeritus at Wilkes University, where he was a faculty member from 1959 to 1990. He served there as chemistry department chair from 1970 to 1986 and environmental science department chair from 1987 to 1990. He was chair of the American Chemical Society's Division of the History of Chemistry in 1986, received the Division's outstanding paper award in 1989, and presented more than twenty-five papers before the Division at national meetings of the Society. He has written for the American Chemical Society News Service, and he has been on the advisory committee of the Society's National Historic Chemical Landmarks committee since its inception in 1992. He developed the oral history program of the Chemical Heritage Foundation beginning in 1985, and was the Foundation's Director of Oral History from 1990 to 1995.

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