

CHEMICAL HERITAGE FOUNDATION

WILLIAM S. KNOWLES

Transcript of an Interview
Conducted by

Michael A. Grayson

at

St. Louis, Missouri

on

30 January 2008

(With Subsequent Corrections and Additions)

CHEMICAL HERITAGE FOUNDATION
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WILLIAM S. KNOWLES

1917 Born in Taunton, Massachusetts on 1 June

Education

1939 A.B., Harvard University, Chemistry

1942 Ph.D., Columbia University, Steroids

Professional Experience

1942-1944 Monsanto, Dayton
Chemical Research and Development

1944-1951 Monsanto, St. Louis
Organic Division

1951-1952 Harvard University
Academic Leave, Total Synthesis of Steroids, R.B. Woodward

1952-1966 Monsanto, St. Louis
Group Leader, Scientist, Research Advisor

1966-1970 Senior Scientist

1970 Distinguished Science Fellow

1982-1986 Agricultural Chemicals Division

Honors

1974 IR 100 Award, Asymmetric Hydrogenation Process

1978 St. Louis American Chemical Society Section Award

1981 Monsanto Thomas and Hochwalt Award

1982 American Chemical Society Award for Creative Invention

1996 The Organic Reactions Catalysis Society Paul N. Rylander Award

2001 Nobel Prize in Chemistry

ABSTRACT

William S. Knowles' oral history begins with his childhood, attending boarding schools in Depression Era New England. Knowles excelled as a student at the Berkshire School and Phillips Academy, Andover before attending Harvard University to pursue chemistry. Knowles' academic career allowed him to avoid the draft during World War II and, instead, attend Columbia University to study steroids with Robert C. Elderfield. Completing his Ph.D. in only three years, Knowles then moved into industrial chemistry, going to work for Monsanto, at which he would spend the rest of his career. His work there began with basic studies of vanillin and other chemical compounds. Knowles was sent on a leave of absence in 1951 to complete a post-doctorate on total steroid synthesis with Robert B. Woodward at Harvard, an experience that would alter his career path forever. Following Knowles post-doctorate, he moved into studying pharmaceutical chemistry. Throughout the oral history, Knowles discusses the many projects he worked on through his years at Monsanto and how they led to the work that would garner him the 2001 Nobel Prize in Chemistry. Additionally, Knowles gives interesting insight into the challenges and opportunities presented by being a scientist in an industrial setting; and life as a Nobel Laureate, examining the prestige, politicization, and downside of winning the world's most well-known academic honor.

INTERVIEWER

Michael A. Grayson is a member of the Mass Spectrometry Research Resource at Washington University in St. Louis. He received his B.S. degree in physics from St. Louis University in 1963 and his M.S. in physics from the University of Missouri at Rolla in 1965. He is the author of over forty-five papers in the scientific literature. Before joining the Research Resource, he was a staff scientist at McDonnell Douglas Research Laboratory. While completing his undergraduate and graduate education, he worked at Monsanto Company in St. Louis, where he learned the art and science of mass spectrometry. Grayson is a member of the American Society for Mass Spectrometry [ASMS], and has served many different positions within that organization. He has served on the Board of Trustees of CHF and is currently a member of CHF's Heritage Council. He currently pursues his interest in the history of mass spectrometry by recording oral histories, assisting in the collection of papers, and researching the early history of the field.

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