

CHEMICAL HERITAGE FOUNDATION

KLAUS BIEMANN

Transcript of an Interview
Conducted by

Michael A. Grayson

at

Alton Bay, New Hampshire

On

29 August 2006

(With Subsequent Corrections and Additions)



Klaus Biemann

ACKNOWLEDGMENT

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KLAUS BIEMANN

1926 Born in Innsbruck, Austria on 2 November

Education

1951 Ph.D., organic chemistry, University of Innsbruck

Professional Experience

1951-1955	University of Innsbruck Instructor
1955-1957	Massachusetts Institute of Technology Research Associate
1957-1959	Instructor
1959-1962	Assistant Professor of Chemistry
1962-1963	Associate Professor of Chemistry
1963-1996	Professor of Chemistry
1996-present	Professor of Chemistry (emeritus)

Honors

1954	Fulbright Fellowship
1962	Honorary Member, Belgian Chemical Society
1962	Stas Medal, Belgian Chemical Society
1966	Fellow, American Academy of Arts and Sciences
1969-1977	Team Leader, Viking Molecular Analysis Team
1970	Tricentennial Medal, University of Innsbruck
1973	Powers Award, American Academy of Pharmaceutical Sciences
1974	Outstanding Spectroscopist Award, Society for Applied Spectroscopy, New York Section
1977	Exceptional Scientific Achievement Medal, National Aeronautics and Space Administration
1977	Fritz Pregl Medal, Austrian Microchemical Society
1978	Newcomb Cleveland Prize (co-recipient), American Association for the Advancement of Science
1980	Fellow, American Association for the Advancement of Science
1981	Honorary Member, Japanese Society for Medical Mass Spectrometry

1983-1984	Guggenheim Fellowship
1986	Frank H. Field and Joe L. Franklin Award for Outstanding Achievement in Mass Spectrometry, American Chemical Society
1989	Maurice F. Hasler Award, Spectroscopy Society of Pittsburgh
1991	Thomson Medal
1992	Pehr Edman Award for Outstanding Achievements in Mass Spectrometry
1993	Elected Member, National Academy of Sciences
1994	Oesper Award, University of Cincinnati
1995	Beckman Award, Association of Biomedical Resource Facilities
2001	Award in Analytical Chemistry, American Chemical Society
2007	The Benjamin Franklin Medal in Chemistry

Memberships

1955-present	Founding Member, American Society for Mass Spectrometry Member, American Chemical Society, Organic and Analytical Divisions
1967-1975	Member, Editorial Advisory Board, <i>Organic Mass Spectrometry</i>
1968-1971	Member, Editorial Advisory Board, <i>Analytical Chemistry</i>
1972-1976	Member, Pharmacology-Toxicology Program Committee, National Institutes of Health
1973-1989	Member, Sub-commission on Mass Spectrometry, International Union of Pure and Applied Chemistry
1975-1985	Member, Editorial Advisory Board, <i>Biomedical Mass Spectrometry</i>
1980-1984	Member, Life Science Advisory Committee, National Aeronautics and Space Administration
1980-1987	Member, Editorial Advisory Board, <i>Fresenius' Zeitschrift für Analytische Chemie</i>
1981-1996	Member, Editorial Advisory Board, <i>Mass Spectrometry Reviews</i>
1982-1988	Member, Board of Trustees, Drug Science Foundation
1983-1986	Member, Board of Scientific Counselors, National Institute of Environmental Health Sciences
1984-1991	Member, Commission V.2 (Microchemical Techniques), International Union of Pure and Applied Chemistry
1985-1989	Associate Editor, <i>Analytical Chemistry</i>
1988-1998	Member, Protein Society
1990-1996	Member, Editorial Advisory Board, <i>Journal of Protein Chemistry</i>
1990-1996	Member, Editorial Advisory Board, <i>Journal of American Society for Mass Spectrometry</i>
1991-1996	Member, Editorial Advisory Board, <i>Protein Science</i>
1991-1998	Member, American Peptide Society

1995-1998

Member, NAS/NRC Standing Committee on Program and
Technical Review, U.S. Army Chemical and Biological Defense
Command

ABSTRACT

Klaus Biemann's oral history begins with a discussion of his youth near Vienna, Austria. As pharmacy was the family profession, Biemann chose to study it at the University of Innsbruck. He soon developed an interest in organic chemistry, however, and shifted his focus, becoming the only graduate student in this field at that time at the University of Innsbruck. Upon finishing his degree, Biemann then received an appointment at the University of Innsbruck, in the context of which he discusses his experiences as well as the post-World War II university environment. After a summer at MIT working with George Buchi, Biemann decided that the American academic system offered more opportunities than the European one and he subsequently accepted a post-doctorate position at MIT. After two years he was appointed to a faculty position in the analytical division by Arthur C. Cope, the Head of the chemistry department. Early in his tenure at MIT, Biemann's research interest shifted from natural product synthesis to the mass spectrometry of peptides and alkaloid structure. He explains how his early work expanded the perceived applications of early mass spectrometry. While talking about his research at MIT, Biemann reflects on the need to develop new experimental approaches to mass spectrometry, using IBM punch cards, writing computer code, etc. It was even difficult to get the structures of new alkaloids published, because of the novelty of the methodology used; he also discusses his funding from NIH, the first NIH Mass Spectrometry Facility grant, and support from NASA during the Apollo and Viking missions. After almost twenty years of transforming the chemistry department, Cope left MIT and Biemann became the only analytic chemistry professor in the department. In 1958, Biemann began attending the annual meetings of the American Society of Mass Spectrometry, to which he and his research group contributed much over the ensuing forty years. Throughout the oral history Biemann discusses many topics relevant to the evolution of mass spectrometry in organic chemistry and biochemistry, including computerization, the environment, and space science.

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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