

CHEMICAL HERITAGE FOUNDATION

WILBUR I. KAYE

BECKMAN HERITAGE PROJECT

Transcript of an Interview
Conducted by

Arnold Thackray and Gerald E. Gallwas

at

La Jolla, California

on

11 and 27 February 2002

(With Subsequent Corrections and Additions)

ACKNOWLEDGMENT

This oral history is one in a series initiated by the Chemical Heritage Foundation on behalf of The Arnold and Mabel Beckman Foundation. The series documents the personal perspectives of the individuals related to the history of Arnold O. Beckman and Beckman Instruments, Inc., and records the human dimensions of the growth of the chemical sciences and chemical process industries during the twentieth century.

This project is made possible through the generosity of The Arnold and Mabel Beckman Foundation.

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(Signature) Wilbur I. Kaye
Wilbur I. Kaye

(Date) September 26, 2002

WILBUR I. KAYE

1922 Born in Pelham Manor, New York on 28 January

Education

1942 B.S., chemistry, Stetson University
1945 Ph.D., chemistry, University of Illinois, Urbana

Professional Experience

1942-1945 Graduate Assistant, University of Illinois, Urbana

Tennessee Eastman Company
1945-1949 Research Chemist
1949-1955 Senior Research Chemist

Beckman Instruments, Inc.
1956-1968 Director of Research, Scientific Instruments Division
1968-1973 Director of Scientific Research, Corporate Research
1973-1980 Senior Scientist
1980-1987 Principle Staff Scientist

1987-present Consultant

Honors

1959 President, Optical Society of America, Southern California Section
1984 Fellow of Beckman Instruments, Inc.
1987 Honorary Member, Society of Applied Spectroscopy
1991 Wilbur I. Kaye Laser Analytical Laboratory dedicated

ABSTRACT

The interview begins with Wilbur I. Kaye describing his early interest in science, and specifically, instrumentation. He discusses his decision to study at the University of Illinois, and his own academic experience there as a Ph.D. candidate in chemistry. Kaye met his wife, Virginia [Ginnie], (who sits in on the interview) at Stetson University, where they studied as undergraduates, and married her prior to his last year of his graduate studies in 1944. Kaye was then recruited to Tennessee Eastman Company, where he set up a physics laboratory, by Dr. William Hincke. Initially, a PerkinElmer, Inc. spectrophotometer was the sole piece of instrumentation in Kaye's lab, but he soon procured more instruments, such as a Baird Corporation Model AB2 and Beckman Instruments, Inc. DU spectrophotometer. Having joined the Tennessee Eastman division of Eastman Kodak Company near its inception, Kaye relates the history of the company to the explosion of instrumentation research, and analysis in scientific research. Near the end of his tenure at Tennessee Eastman, Kaye was one of the first scientists to publish work in the United States on gas chromatography. Kaye began modifying the DU spectrophotometer while at Tennessee Eastman, and took this work with him on his move to Beckman Instruments. Kaye's modification to the DU became known as the Beckman DK spectrophotometer, which contributed to the competition and friction between former employee Howard H. Cary and owner of Beckman Instruments, Arnold O. Beckman. Amid shifting management and company organization, Kaye continued to improve upon his instruments, as well as develop new instruments while at Beckman. Kaye discusses the difference between DK1 and DK2, the DU and the DK, and addresses the Beckman line of infrared spectrophotometers. During the company's shift into clinical instruments, Kaye developed a glucose analyzer, which James C. Sternberg continued work on once the company withdrew support. Kaye developed the DKU, which combined aspects of both infrared and ultraviolet instrumentation. In addition to pointing out some of the history of Beckman Instruments in the second half of the interview, Kaye describes the interface between administration and research components of the company. A true scientist with an innovative mind, Kaye decided stay in the research laboratory, improving and developing new instruments, rather than join the management scheme of Beckman Instruments.

INTERVIEWERS

Arnold Thackray is President of the Chemical Heritage Foundation. He majored in the physical sciences before turning to the history of science, receiving a Ph.D. from Cambridge University in 1966. He has held appointments at Oxford, Cambridge, Harvard, the Institute for Advanced Study, the Center for Advanced Study in the Behavioral Sciences, and the Hebrew University of Jerusalem. In 1983 he received the Dexter Award from the American Chemical Society for outstanding contributions to the history of chemistry. He served on the faculty of the University of Pennsylvania for more than a quarter of a century. There, he was the founding chairman of the Department of History and Sociology of Science, where he is the Joseph Priestley Professor Emeritus.

Gerald E. Gallwas was a member of the original team in the mid 1960s that founded and managed the growth of what became the clinical diagnostic business of Beckman Instruments. As the business grew, he served in many roles from new product development to directing clinical field trials in the United States, Europe, and Japan. This led to an extensive involvement with professional and trade organizations as well as regulatory agencies. He retired after thirty years of service as director of program management overseeing new product development programs.

TABLE OF CONTENTS

1	Childhood and Education	Early interest in science. Parallels with the life of Arnold O. Beckman. Generation of interest in scientific instrumentation. Ph.D. thesis on x-ray diffraction.
5	Early Career at Tennessee Eastman Company	Infrared spectroscopy. Instrumentation at Tennessee Eastman. Aluminum beryllium photographic plates and publication. Desire to publish. Instrument maintenance.
9	Final Years at Tennessee Eastman Company	Meeting C. E. K. Mees. Employee numbers and laboratory organization. Gas chromatography work with Wilson Patton. Use and modification of the Beckman DU spectrophotometer. John F. Bishop.
13	Career at Beckman Instruments, Inc.	Development of the DK spectrophotometer. Discussion of personal archives. Relationships and responsibility at Beckman. The business rivalries of Howard H. Cary and Arnold O. Beckman. The DU versus the DK.
25	Instrumentation at Beckman Instruments, Inc.	The competition. Infrared instrumentation. Introduction of gas chromatography in the United States. Development of the glucose analyzer. Aspects of the DKU and infrared spectroscopy.
32	Conclusion	Decision to remain in the laboratory. The Stubborn Streak. Creation of a pure water still.
35	Notes	
36	Index	

NOTES

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2. Wilbur I. Kaye, *A Photometric Evaluation of Quenching Oils. II. X-ray Studies of 2,4-Dinitrophenylhydrazine Derivatives*. Ph.D. Dissertation (University of Illinois, 1945).
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4. Wilbur I. Kaye, "An Aluminum-Beryllium Allow for Substrate and Replica Preparations in Electron Microscopy," *Journal of Applied Physics* 20, no. 12 (December 1949): 1209-1214.
5. Wilbur I. Kaye, Wilson Patton and J. S. Lewis, "Separation and Analysis of Gases and Volatile Liquids by Gas Chromatography," *Analytical Chemistry*, 20, (February 1955): 170-174.
6. See Note 5.

INDEX

A

Acetone, 7
Adams, Roger, 4
Aluminum beryllium, 7
American Cyanamid Company, 25
Analytical Chemistry, 11, 21
Ashley, Joseph, 21, 27

B

Baird Corporation, 15, 25-26
 Model AB2, 6, 10, 12, 26
Ballhaus, William, 27-28
Beckman Instruments, Inc., 10-11, 13-28, 32
 2T, 6
 DB, 22
 DK, 14-15, 21-22, 24-25, 27-28
 DK1, 20-23
 DK2, 20-22, 27
 DKU, 22, 30
 DR, 20
 DU, 7, 12-15, 20, 24-25, 27
 power supply, 22
 DU2, 22
 glucose analyzer, 28-30
 IR-2T, 10
 IR-3, 26
 IR-4, 26, 30-31
 IR-5, 30-31
 IR-6, 30-31
 IR-7, 30-31
 IR-8, 30-31
 IR-9, 30
 marketing department, 27
 Model B, 25
 process instruments division, 19, 27-28
 research department, 30-31
 scientific and process instruments division, 16, 18
 scientific instruments division, 19, 27
 Spinco division, 34
 ultracentrifuge, 30
Beckman Museum, 16, 33
Beckman, Arnold O., 1, 4-5, 14-16, 18-21
Beckman, Mabel M., 16

Benzene, 8
Bishop, John F. [Jack], 13-15, 18-19
Black, Thomas, 21

C

California Institute of Technology [Caltech], 2, 4
Cary Instruments, Inc., 15, 19-20, 23, 25
Cary, Howard H., 15, 19, 22-23, 26
Cellulose acetate, 7
Chemical Heritage Foundation [CHF], 16-17
Clark, G. Lee, 3-4
Conn, John F., 1-2

D

De Land, Florida, 1
Duerger, M. J., 4
Duringer, Rudy, 29

E

Eastman Kodak Company, 6-7, 9, 14
 Tennessee Eastman Company, 5-15, 18, 20, 22-23, 25, 27, 30
 analytical laboratory, 8, 10
 gas chromatograph, 11-13, 28
 gas chromatography, 11, 13
 physics laboratory, 6, 10-11
 synthetic rubber program, 12
Electron micrograph, 6

G

Gallaway, William S., 21
Gallwas, Gerald E., 16
Gas chromatography, 11-12, 27
Gilbert, Paul, 27
Glass prism, 25
Glucose, 28

H

Hawes, Roland C., 26
Henderson, William, 21
Hincke, William, 5, 13
Hodgkin, Dorothy M. Crowfoot, 4
Hydrogen, 30
Hydrogen lamp, 25
Hydrozones, 3

I

Illinois, University of, 1-5

J

Journal of the Optical Society, 1

K

Kadish, Arnold, 28

Kahn, Lee, 21

Kaye, Wilbur I., 1, 6, 11, 13, 15-16, 18, 32, 34

brother-in-law, 9

diabetes, 28, 30

father, 1

Parkinson's disease, 16

wife [Virginia "Ginnie" Kaye], 5, 15

Kodak. *See* Eastman Kodak Company

L

Lake Helen, Florida, 1

M

Marvel, Carl S. [Speed], 4-5

Mass spectrometry, 27

Massachusetts Institute of Technology [MIT], 2, 4

McDaniel, James, 29-30

Mees, C. E. K., 6, 9

N

Nuclear magnetic resonance [NMR], 27

O

Optical Technology Corporation, 33

Oxidation of oils, 3

P

Park, Thomas, 16, 18-19

Patton, Wilson, 11

Pauling, Linus C., 2, 4

Peck, Virgil, 10

Penicillin, 3-4

Penton, Steven, 33

PerkinElmer, Inc., 6, 10, 15, 25

infrared spectrophotometer, 12

Model 21, 6, 9

Philadelphia, Pennsylvania, 17

Photomultiplier, 24
Phototube, 24
Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy, 7
Polystyrene, 8

Q

Quartz prism, 25

R

Radio Corporation of America [RCA], 7
Rochester, New York, 9

S

Smithsonian Institution, 7-8
Specialized Instruments Corporation, 34
Spracklin, Stanley, 19
Sternberg, James C., 28-30
Stetson University, 1-2, 5

T

Tennessee Eastman Company, *See* Eastman Kodak Company
Thackray, Arnold, 4, 16
Tungsten, 31

W

Ward, William W., 21, 26
World War II, 2-3, 9, 12, 15, 25

X

X-ray, 2, 4
 diffraction, 3,-4, 9