

CHEMICAL HERITAGE FOUNDATION

PAUL M. COOK

Transcript of an Interview  
Conducted by

James J. Bohning

at

San Carlos, California

on

2 April 1992

(With Subsequent Corrections and Additions)

Paul Cook

CHEMICAL HERITAGE FOUNDATION  
Oral History Program  
FINAL RELEASE FORM

This document contains my understanding and agreement with Chemical Heritage Foundation with respect to my participation in a tape-recorded interview conducted by James J. Bohning on 2 April 1992.  
I have read the transcript supplied by Chemical Heritage Foundation.

1. The tapes, corrected transcript, photographs, and memorabilia (collectively called the "Work") will be maintained by Chemical Heritage Foundation and made available in accordance with general policies for research and other scholarly purposes.
2. I hereby grant, assign, and transfer to Chemical Heritage Foundation all right, title, and interest in the Work, including the literary rights and the copyright, except that I shall retain the right to copy, use, and publish the Work in part or in full until my death.
3. The manuscript may be read and the tape(s) heard by scholars approved by Chemical Heritage Foundation subject to the restrictions listed below. The scholar pledges not to quote from, cite, or reproduce by any means this material except with the written permission of Chemical Heritage Foundation.
4. I wish to place the conditions that I have checked below upon the use of this interview. I understand that Chemical Heritage Foundation will enforce my wishes until the time of my death, when any restrictions will be removed.

**Please check one:**

a.  \_\_\_\_\_

**No restrictions for access.**

**NOTE:** Users citing this interview for purposes of publication are obliged under the terms of the Chemical Heritage Foundation Oral History Program to obtain permission from Chemical Heritage Foundation, Philadelphia, PA.

b. \_\_\_\_\_

**Semi-restricted access.** (May view the Work. My permission required to quote, cite, or reproduce.)

c. \_\_\_\_\_

**Restricted access.** (My permission required to view the Work, quote, cite, or reproduce.)

This constitutes my entire and complete understanding.

(Signature) \_\_\_\_\_

(Date) \_\_\_\_\_

MAY 24, 1999

This interview has been designated as **Free Access**.

One may view, quote from, cite, or reproduce the oral history with the permission of CHF.

**Please note:** Users citing this interview for purposes of publication are obliged under the terms of the Chemical Heritage Foundation Oral History Program to credit CHF using the format below:

Paul M. Cook, interview by James J. Bohning at San Carlos, California, 2 April 1992 (Philadelphia: Chemical Heritage Foundation, Oral History Transcript # 0105).



Chemical Heritage Foundation  
Oral History Program  
315 Chestnut Street  
Philadelphia, Pennsylvania 19106



The Chemical Heritage Foundation (CHF) serves the community of the chemical and molecular sciences, and the wider public, by treasuring the past, educating the present, and inspiring the future. CHF maintains a world-class collection of materials that document the history and heritage of the chemical and molecular sciences, technologies, and industries; encourages research in CHF collections; and carries out a program of outreach and interpretation in order to advance an understanding of the role of the chemical and molecular sciences, technologies, and industries in shaping society.

## PAUL M. COOK

1924 Born in Ridgewood, New Jersey on 25 April

### Education

1947 B.S., chemical engineering, Massachusetts Institute of Technology

### Professional Experience

1947-1948 President, Warren Wire Company

Stanford Research Institute

1949-1952 Chemical engineer

1952-1954 Head, Radiation Chemistry Laboratory

1953-1956 President, Sequoia Process Corporation

1957-1991 Founder, CEO, and Chairman of the Board, Raychem Corporation

Cell Net Data Systems

1991-1995 CEO

1991-present Chairman of the Board

1994-present Chairman of the Board, SRI International

1995-present Chairman of the Board, Sarnoff Corporation

1995-present Founder, Chairman of the Board, and CEO, Diva Systems Corporation

### Honors

1985 Member, National Academy of Engineering

1986 Winthrop Sears Medal, Chemical Industry Association

1988 National Medal of Technology

1989 Golden Omega Award, Electrical/Electronics Insulation Award

1990 Member, American Academy of Sciences

## ABSTRACT

Paul Cook begins the interview with a discussion of his family background and childhood. When Cook was young, he took an interest in chemistry, developing a laboratory in the basement of his parents' house. After graduating from high school in 1941, he attended the Massachusetts Institute of Technology [MIT], where he studied chemical engineering with Warren K. Lewis. In 1943, after enlisting in the Army, he went to basic infantry training. Cook then enrolled in the Army Specialized Training Program [ASTP], through which he attended Stanford University for two terms, studying mechanical engineering. After a year, Cook was sent to the Hunter Liggett Military Reservation, and then to Fort Benning, where he became an MP. While at Fort Benning, he joined the Officer Candidate School, and shortly after completing the training, was sent to fight in Italy. In February 1946, Cook left the Army and worked for Submarine Signal in Boston. He then returned to MIT, where he completed his degree in 1947. After graduation, Cook started the Warren Wire Company with his older brother. A year later, Cook left the fledgling company to join the Stanford Research Institute as a chemical engineer. There he worked on a number of projects, including the growth of the algae *Chlorella* and the potential uses of waste fission products. In 1951, Cook founded the Sequoia Process Corporation. Five years later, he left Sequoia to found Raychem Corporation, which opened in 1957. Cook concludes the interview with a discussion of Raychem's international competition, the growth of the company, his thoughts on managing innovation, and the possibilities of radiation technology.

## 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.

## TABLE OF CONTENTS

- 1     **Family Background**  
      Growing up in Ridgewood, New Jersey. Father's company, Cornish Wire Company. Siblings. Mother's support. Interest in chemistry. Basement laboratory. High-school sports. Effect of Depression. Influence of teachers. Decision to attend Massachusetts Institute of Technology [MIT].
- 4     **College and the Army**  
      Studying chemical engineering at MIT. Influence of Warren K. Lewis. Decision to enlist in the Army. Basic infantry training. Army Specialized Training Program [ASTP]. Studying mechanical engineering at Stanford University. Becoming an MP at Fort Benning. Officer Candidate School infantry training program. Fighting in Italy. Leadership experience. Getting married. Leaving the Army. Working for Submarine Signal. Returning to MIT. Working with Edwin R. Gilliland.
- 9     **Warren Wire Company**  
      Starting a business. Working with brother. Technology of enameled magnet wire. Decision to leave company.
- 10    **Stanford Research Institute**  
      Working as a chemical engineer. Fluidization of sawdust. Carnegie Institution of Washington facility. Developing continuous process for growing *Chlorella*. Study sponsored by Atomic Energy Commission. Potential uses of waste fission products. Establishing Radiation Engineering Laboratory.
- 13    **Sequoia Wire Company**  
      Founding company. Making electronic hook-up wire. Conflict with shareholder. Decision to leave company.
- 15    **Raychem Corporation**  
      Industrial applications of high-energy ionizing radiation. Initial technical problems. Development of original products. Japanese competition. International expansion. Hiring techniques. Encouraging innovation. Finding market opportunities. Technology.
- 25    **Conclusion**  
      Other applications of ionizing radiation. Irradiating on a large scale.
- 28    **Notes**
- 29    **Index**

## NOTES

1. Paul M. Cook, "Apparatus and Process for the Production of Photosynthetic Microorganisms, Particularly Algae," U.S. Patent 2,658,310, issued 10 November 1953 (application filed 22 December 1950).
2. Paul M. Cook, "Chemical Engineering Problems in Large Scale Culture of Algae," *Industrial and Engineering Chemistry*, 43 (1951): 2385-2389.
3. Paul M. Cook, James B. Meikle, and Bruce Graham (to W. R. Grace & Co.), "Improved Polyethylene by Irradiation and Heat Treatment," U.S. Patent 2,960,453, issued 15 November 1960.  
  
Paul M. Cook, James B. Meikle, and Bruce Graham (to W. R. Grace & Co.), "Irradiation of Linear Polyolefins," U.S. Patent 3,006,829, issued 31 October 1961.
4. William Taylor, "The Business of Innovation: An Interview with Paul Cook," *Harvard Business Review* (March-April 1990): 97-106.

## INDEX

### A

Alpha emitters, 12  
American Psychological Society, 11  
Antioxidant, 25  
Apennine Mountains, 6  
Atomic Energy Commission [AEC], 11-12  
Austin, Texas, 8

### B

Baird, William G., Jr., 26  
Beta emitters, 12  
Boston Symphony, 5  
Boston, Massachusetts, 5, 8, 10  
Brookhaven National Laboratory, 12  
Bueche, Arthur M., 16  
Burbank, California, 17  
Bush, Vannevar, 11

### C

California Institute of Technology [Caltech], 3  
Camp Carson, Colorado, 8  
Camp Croft, South Carolina, 6  
Camp Swift, Texas, 8  
Carnegie Institution of Washington, 11  
Cesium-137, 12  
Chapiro, Adolphe, 24  
Charlesby, Arthur, 16  
*Chicago Tribune*, 10  
*Chlorella*, 11, 14  
Cobalt-60, 12  
Colorado Springs, Colorado, 8  
Convair, 17  
Cook, Paul M.  
    brother (John), 1, 9-10, 13  
    father, 1-3, 9-10, 13-14  
    grandfather, 1  
    mother, 1-2  
    older sister, 1, 10  
    uncles, 1  
    wife, 8, 10  
    younger sister, 1, 10  
Cornish Wire Company, 1, 10  
Cryovac, 26



## **D**

Depression, The, 2-3  
Dewey, Bradley, Jr., 26  
Dewey, Thomas Edmund, 10-11  
Dolomite Mountains, 6  
Dow Chemical Company, 19  
Dow, Willard H., 19  
Dynamatron, 26

## **E**

Eimer & Amend, 2  
Electron beam generator, 12, 15  
Electronic hookup wire, 13  
Enameled magnet wire, 10  
Extruder, 13

## **F**

Fission, 11-12  
Food and Drug Administration [FDA], 25  
Fort Benning, Georgia, 6  
Fort Hood, Texas, 5  
Fort Worth, Texas, 17

## **G**

General Dynamics Company, 17  
General Electric Company [GE], 12, 15-17, 26  
George Washington Bridge, 1  
Gilliland, Edwin Richard, 8-9  
Grace & Co., W. R., 26  
Grafting, 24, 26

## **H**

Hanford National Laboratory, 12  
*Harvard Business Review*, 21-22  
Harvard Business School, 9  
Hoboken, New Jersey, 1  
Hobson, Jesse Edward, 10  
Hudson River, 8  
Hunter Liggett Military Reservation, 6

## **I**

Idaho National Engineering and Environmental Laboratory, 12  
*Industrial and Engineering Chemistry*, 11  
Intel Corporation, 19  
Irradiated Products Incorporated. *See* Raychem Corporation

## **J**

Johnson & Johnson, 25

## **K**

Katherine Gibbs School, 10  
Koussevitsky, Serge Alexandrovich, 5  
Krause, Ralph Alvin, 10

## **L**

Lawton, Elliott John, 16  
Lewis, Warren Kendall, 5, 8-9  
Lockheed Corporation, 17  
    Missiles Division, 17  
Long Island, New York, 26  
Los Angeles, California, 13

## **M**

Magat, Michel, 24  
Massachusetts Institute of Technology [MIT], 3-5, 7-10  
    radiation laboratory, 10  
    Undergraduate Research Opportunities Program [UROP], 9  
Milner, H. W., 11  
Muchmore, Richard W., 16

## **N**

New York City, New York, 1-2, 8  
New York University [NYU], 5  
Nitto Boseki Co., Ltd., 18  
North Camp Hood, Texas, 4-5  
Nylon, 13

## **O**

Oak Ridge National Laboratory, 12  
Ozone, 27

## **P**

Paterson, New Jersey, 1-2  
Phenix City, Alabama, 6  
Picric acid, 2  
Po River, 6  
Polaris missiles, 17  
Polyethylene, 13, 16, 22-25  
    high density polyethylene [HDPE], 16, 25  
    low density polyethylene, 25  
Polymer, 22, 24-25  
Polyvinyl chloride [PVC], 13  
Polyvinylidene fluoride, 22-23

## **R**

Radiation, 10, 12-13, 15-19, 22-27  
Radiation Dynamics Incorporated [RDI], 26  
Raychem Corporation, 13, 15-16, 18-20, 22, 24-26  
Raytheon Company, 13  
Redwood City, California, 13, 15-16  
Ridgewood, New Jersey, 1-2

## **S**

Salmonella, 26  
San Diego, California, 17  
Schenectady, New York, 16  
Semiconductors, 19, 22  
Sequoia Process Corporation, 13-15  
Sequoia Wire Company. *See* Sequoia Process Corporation  
Skybolt missile, 17  
Spoehr, Herman Augustus, 11  
Stanford Research Institute [SRI], 10-15  
    Radiation Engineering Laboratory, 12  
Stanford University, 4, 6-8, 10-11  
Stevens Institute of Technology, 1  
Styrene, 19  
Submarine Signal, 8  
Sunnyvale, California, 17  
Swept beam, 15  
Synthetic rubber program, 8

## **T**

Teflon, 24  
Texas, University of, 8  
Truman, President Harry S., 11

## **U**

U.S. Army, 4-8, 10  
    10th Mountain Division, 6  
    2nd Battalion of the 85th Regiment, 7  
    71st Light Infantry Division, 6  
    Army Specialized Training Program [ASTP], 4, 6-7  
    Military Police, 6  
    Officer Candidate School [OCS], 6  
    Signal Corps, 10  
U.S. Navy  
    V-12, 7

## **V**

Valentine, Bill, 13, 15  
Van de Graaf generator, 12  
V-J Day, 8

## **W**

Warren Wire Company, 9, 14  
Washington, DC, 1  
Williamstown, Massachusetts, 9-10  
World War II, 4-10, 19

## **X**

X-rays, 12, 15

## **Z**

Zacharias, Jerrold Reinach, 10