CHEMICAL HERITAGE FOUNDATION

CHARLES M. RICE

The Pew Scholars Program in the Biomedical Sciences

Transcript of an Interview Conducted by

Robert Kohler and Richard Sawyer

at

Washington University Medical Center St. Louis, Missouri

on

7 May 1990

(With Subsequent Corrections and Additions)

ACKNOWLEDGEMENT

This oral history is part of a series supported by a grant from the Pew Charitable Trusts based on the Pew Scholars Program in the Biomedical Sciences. This collection is an important resource for the history of biomedicine, recording the life and careers of young, distinguished biomedical scientists and of Pew Biomedical Scholar Advisory Committee members.



THE BECKMAN CENTER FOR THE HISTORY OF CHEMISTRY

Oral History Program

RELEASE FORM

This document contains my understanding and agreement with the Center for History of Chemistry with respect to my participation in a tape-recorded interview conducted by

Robert Kohler and Richard Sawyer on 7 May 1990 . I have read the transcript supplied by the Center and returned it with my corrections and emendations.

- The tapes and corrected transcript (collectively called the "Work") will be maintained by the Center and made available in accordance with general policies for research and other scholarly purposes.
- 2. I hereby grant, assign, and transfer to the Center 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 the Center 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 the Center.
- 4. I wish to place the following conditions that I have checked below upon the use of this interview. I understand that the Center will enforce my wishes until the time of my death, when any restrictions will be removed.
 - a. No restrictions for access.
 - b. My permission required to quote, cite, or reproduce.
 - c. ____ My permission required for access to the entire document and all tapes.

This constitutes our entire and complete understanding.

(Signature) Charles M. Rice 9 (Date)

(Revised 24 February 1988)

This interview has been designated as Semi Restricted Access.

One may view the oral history. However, the permission of the interviewee is required to quote from, cite, or reproduce the oral history.

Please contact CHF to request permission.



Chemical Heritage Foundation Center for Oral History 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, technologies, and industries in shaping society

CHARLES M. RICE

1952	Born in Sacramento, California on 25 August
	Education
1974 1981	B.S., Zoology, University of California, Davis Ph.D., Biochemistry, California Institute of Technology
	Professional Experience
1981-1984	California Institute of Technology, Pasadena, CA Post-Doctorate, Virology
1985	Australian National University, Canberra, Australia Visiting Fellow, Biochemistry
1986-present	Washington University School of Medicine, St. Louis, MO Assistant Professor, Microbiology & Immunology
	Honors
1975-1977	California State Scholarship
1975-1979	Earle C. Anthony Fellowship
1975-1980	Graduate Research Assistantship, California Institute of Technology
1979	National Institutes of Health Predoctoral Traineeship
1980-1981	California Institute of Technology Fellowship
1981-1982	Gosney Research Fellowship

1986 Pew Scholars Award

ABSTRACT

Charles Rice grew up in California. His father was an insurance adjuster and his mother a housewife. He intended to be veterinarian, so he entered University of California, Davis where he majored in zoology while there he worked for Dennis Barrett and spent summers at Woods Hole Marine Biology Laboratory. He loved Spanish language and literature; after graduation he traveled in Latin America before he returned to be a teaching assistant for the Physiology Course at Woods Hole.

For graduate school Rice decided on the California Institute of Technology (Caltech), where he worked in James Strauss' lab on RNA viruses. He continued in that lab as a postdoc, collaborating with Henry Huang on Sindbis virus and beginning to work on the yellow fever virus vaccine strain.

After a mini sabbatical with Lynn Dalgarno in Australia, Rice accepted a position at Washington University in St. Louis. There he continued to collaborate with Henry Huang and Sondra Schlesinger. He had fewer administrative duties than at other institutions; and a broader swath of science and scientists. He feels he is still learning how to manage his lab, but hopes to develop his students into independent and creative thinkers. His lab continues his work in RNA viruses and has recently begun work on hepatitis C. Rice's overall objective is to learn how to inhibit virus replication without harming the hosts.

Rice discusses the influence of Caltech. He explains his lab composition, his management style, and how his collaborations enriched his science. He loves bench work but is not so fond of administrative duties. He does not like fashionable science or having to spend so much time seeking grants and believes that the current discouraging state of funding agencies is turning away good people. He stresses importance of basic science. He may work more intensively on hepatitis C and thinks Sindbis has other uses as model system.

TABLE OF CONTENTS

Early Years	1
Grew up in California. Planned to become veterinarian.	
College Years Entered University of California, Davis, majored in zoology. Biology class with Dennis Barrett. Summers at Woods Hole Marine Biology Laboratory. Experiences in Latin America after graduation. Teaching assistant at Woods Hole.	4
Graduate School and Postdoctoral Work Entered James Strauss' lab at California Institute of Technology. Thesis work on virion envelope proteins. Continued postdoctoral work in Strauss' lab. Collaborated with Henry Huang on Sindbis virus and sequenced yellow fever virus as model system for other flaviviruses. Australia sabbatical.	8
First Independent Lab Accepted position at Washington University in St. Louis. Lab management. Day to day activity. Hepatitis C research.	22
General Thoughts Loves bench work. Lab administration and teaching. Future plans.	30
Index	36

INDEX

А

Ackers, Gary, 6 Argentina, 10, 11 Arias, Carlos F., 3 Asai, David J., 22 Australia, 22, 23

B

Baltimore, David, 14 Barciale, Thomas J., 25 Barrett, Dennis P., 4, 5, 6, 8, 9 Beadle, George W., 20 Bogotá, Colombia, 10 Boulder, Colorado, 22 Bridges, Calvin B., 20 Butler, Eugene T., 13

С

California, 1, 11 California Institute of Technology, 3, 7, 9, 11, 13, 16, 17, 18, 19, 20, 21, 22, 23, 24 Caltech. *See* California Institute of Technology Cebra, John J., 6 Central America, 3, 9, 10 Chico, California, 1 collaboration, 24, 25 Colombia, 10 Colorado Springs, Colorado, 1 Columbia University, 20 competititon, 25 Costantini, Franklin P., 22 Cuernavaca, Morelos, Mexico, 3

D

Dalgarno, Lynn, 23 Davidson, Eric H., 7, 9 Davidson, Norman R., 20 Davie, Joseph M., 24 Davis, Mark M., 22 Davis, Ronald W., 13 DNA, 13, 16, 17, 18, 30 cDNA, 13, 14, 15, 16, 30, 32

F

Frelinger, John, 22 Fresno, California, 10

G

grants/funding, 23, 33, 35, 36 Gutierrez-Hartmann, Arthur, 3

Η

Han, Chang S., 26 Harvard University, 22 HIV. *See* virus:human immunodeficiency virus Hogness, David S., 21 Huang, Henry V., 14, 21

K

Kornberg, Arthur, 18

L

Lewis, Edward B., 21 Little, Peter, 13 Lopez, Susanna, 3

М

Maniatis, Thomas P., 13, 22 Massachusetts Institute of Technology, 25 McMahon, Daniel S., 22 Mexico, 3 Miami, Florida, 10 Mitchell, Herschel K., 21 Morgan, Thomas H., 19, 20, 22

Ν

Neurospora, 21 Normark, Staffan J., 24

0

Oswaldo Cruz Foundation, 3 Owen, Ray D., 21

Р

Pauling, Linus, 19
PCR. *See* polymerase chain reaction
Pew Scholars Program in the Biomedical Sciences, 3, 22
polymerase chain reaction, 30
Pomona College, 1

R

Racaniello, Vincent R., 14 RNA, 12, 13, 14, 15, 16, 17, 18, 30, 31, 36

S

Sacramento, California, 1 Schultz, Jack C., 20 Seed, Brian, 22 South America, 3, 9, 10, 11, 23 Stanford University, 13 Strauss, James S., 3, 11, 12, 19, 23 Sturtevant, Alfred H., 20 Svedberg, Theodor, 8

U

UCSD. *See* University of California, San Diego United States of America, 3, 10

University of California, Davis, 2, 4, 5, 7, 8 University of California, San Diego, 9 University of Connecticut, 6 University of Pennsylvania, 6

V

virus, 3, 12, 13, 14, 15, 16, 17, 25, 26, 30, 31, 32, 35, 36 alphavirus family, 15 flavivirus family, 15, 23, 31, 36 hepatitis A, 31 hepatitis C, 31 herpes, 31 human immunodeficiency virus, 31, 35 sindbis, 14, 15, 16, 24, 25, 36 Togavirus family, 15 vaccinia virus, 3, 14 yellow fever, 3, 15, 16, 23, 30, 31, 32 Asibi, 15, 16

W

Wash U. *See* Washington University in St. Louis Washington University in St. Louis, 17, 22, 23 Weissman, Charles, 14 Wood, William B., 22 Woods Hole, Massachusetts, 4, 5, 7, 9, 10, 11 Worcester, Massachusetts, 1

Y

Yphantis, David, 6