

**The
Rockefeller Foundation
Annual Report**

1935

**49 West 49th Street
New York**

378.31

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1935

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Associate Counsel

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¹ Retired September 1, 1935.

² Appointed September 1, 1935.

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Counsel

THOMAS M. DEBEVOISE

Associate Counsel

CHAUNCEY BELKNAP

¹ Retired July 1, 1936.

² From July 1, 1936.

To the Members of The Rockefeller Foundation,
New York.

Gentlemen:

I have the honor to transmit herewith an account of the work of The Rockefeller Foundation for the period January 1, 1935, to December 31, 1935, including the reports of the Secretary and the Treasurer of the Foundation, the Director of the International Health Division, and the Directors for the Medical Sciences, the Natural Sciences, the Social Sciences, and the Humanities, and of the Vice-President in charge of program in China.

During the year the Foundation has continued its efforts in public health through the International Health Division. Financial assistance and the cooperation of its staff have supplemented governmental agencies in the training of public health personnel and in the control of disease, while the staff has continued its study of certain diseases in their environments, and also the laboratory research to which this study leads.

The program in China has placed emphasis on organized efforts at rural reconstruction through

aid to concrete studies and the training of personnel.

The remaining appropriations have been made, in minor part, to terminate the support of older interests of the Foundation, and, in major part, to carry on work in the following fields:

1. Social structure and functioning
2. Individual behavior
3. Individual and race development
4. Cultural appreciation and expression.

In the field of social structure and functioning, the Foundation has placed its emphasis on three groups of problems—those having to do with international relations, social security, and public administration. Support has been given to objective, realistic studies promising results of practical significance. The difficulty of obtaining such results is admittedly great, but the stakes are so important as to justify sustained and carefully directed effort.

Problems of individual behavior and race development were attacked through the programs in the medical sciences and the natural sciences. Work in mental health was furthered through the medical sciences, particularly by aid to the teaching of psychiatry and to the study of the complex phenomena of mental disease and maladjustment. Through the natural sciences, projects were assisted which focused the techniques

of the exact sciences upon research important to the understanding of human development, and for furnishing the basis for much of the research in psychiatry.

Certain types of cultural activities were selected for the work in the humanities, with the aim of extending public appreciation and participation, and of fostering international cultural understanding.

Respectfully submitted,

MAX MASON

President

REPORT OF THE SECRETARY

SECRETARY'S REPORT

The members and trustees of The Rockefeller Foundation during 1935 were:

John D. Rockefeller, Jr., <i>Chairman</i>	
Winthrop W. Aldrich	Ernest M. Hopkins
James R. Angell	Max Mason
Trevor Arnett	Thomas I. Parkinson
John W. Davis	John D. Rockefeller, 3rd
Lewis W. Douglas	Walter W. Stewart
John F. Dulles	Harold H. Swift
David L. Edsall	George H. Whipple
Raymond B. Fosdick	Ray Lyman Wilbur
Jerome D. Greene	Owen D. Young

The following were members of the Executive Committee during the year:

The President, <i>Chairman</i>	
James R. Angell	Raymond B. Fosdick
Trevor Arnett	Jerome D. Greene
David L. Edsall	John D. Rockefeller, 3rd
Walter W. Stewart	

The officers of the Foundation were:

John D. Rockefeller, Jr.	<i>Chairman, Board of Trustees</i>
Max Mason	<i>President</i>
Thomas B. Appleget	<i>Vice-President</i>
Selskar M. Gunn	<i>Vice-President</i>
Alan Gregg, M.D.	<i>Director for the Medical Sciences</i>
Warren Weaver	<i>Director for the Natural Sciences</i>
Edmund E. Day	<i>Director for the Social Sciences</i>
David H. Stevens	<i>Director for the Humanities</i>
F. F. Russell, M.D. ¹	<i>Director, International Health Division</i>
W. A. Sawyer, M.D. ²	<i>Director, International Health Division</i>
Norma S. Thompson	<i>Secretary</i>
Lefferts M. Dashiell	<i>Treasurer</i>
George J. Beal	<i>Comptroller</i>
Thomas M. Debevoise	<i>Counsel</i>
Chauncey Belknap	<i>Associate Counsel</i>

¹ Retired September 1, 1935.

² From September 1, 1935.

The following served as scientific directors of the International Health Division of the Foundation during 1935:

Rufus Cole, M.D., *Chairman*
Albert J. Chesley, M.D. Waller S. Leathers, M.D.
Alphonse R. Dochez, M.D. Eugene L. Opie, M.D.
Wilson G. Smillie, M.D.
The Director of the Division, *Secretary*

Meetings

Regular meetings of The Rockefeller Foundation were held on April 10 and December 11, 1935. Eight meetings of the Executive Committee were held during the year to take actions within general policies approved by the trustees.

Financial Summary

The following is a summary of receipts and disbursements of the Foundation in 1935. Disbursements in many instances involved appropriations made in former years; on the other hand, in some cases payments represented but a portion of appropriations made during 1935, remainders of which are payable during succeeding years.

**Statement of Funds Available and Disbursements
During the Year 1935**

FUNDS AVAILABLE

Balance available December 31, 1934

To meet appropriations, pledges,
and authorizations..... \$33,666,635.62
Available for appropriation..... 4,997,244.41

\$38,663,880.03

Authorizations allowed to lapse, re-
verting to Principal Fund.....

50,000.00

\$38,613,880.03

Income and refunds received during
the year 1935.....

7,909,730.83 \$46,523,610.86

DISBURSEMENTSUniversities and other educational
institutions

Education

Medical sciences..... \$692,524.79

Public health..... 8,285.26

Nursing..... 511,242.73

Social sciences..... 133,485.39

Natural sciences..... 20,557.43

Humanities..... 36,000.33

Departmental development..... 599,412.49

Research programs..... 2,217,425.56

Land and buildings..... 150,462.08

Research institutions and organiza-
tions

Education

Medical sciences..... 5,091.20

Social sciences..... 28,083.79

Humanities..... 5,000.00

General..... 9,915.63

General development..... 1,478,914.71

Research programs..... 699,214.33

Land and buildings..... 364,388.96

Special committees and commissions 109,397.06

Fellowships and grants in aid..... 1,410,635.60

Studies of pressing economic prob-
lems..... 348,429.26

Miscellaneous..... 359,412.20

Public health..... 2,443,179.62

General..... 313,859.93

Administration..... 780,520.99 \$12,725,439.34

Balance

To meet appropriations, pledges, and authorizations.....	\$30,362,699.30	
Available for appropriation.....	3,435,472.22	\$33,798,171.52

Summary of Expenditures in 1935

UNIVERSITIES AND OTHER EDUCATIONAL INSTITUTIONS

Medical Science Education

Cheeloo University, Tsinan, China.....	\$4,168.75
China Medical Board, Inc., New York City.....	460,850.00
Chulalongkorn University, Bangkok, Siam.....	7,214.35
University of Brussels, Belgium.....	200,000.00
University of Colorado. School of Medicine, Denver.....	7,791.69
University of Montreal, Canada.....	12,500.00

\$692,524.79

Public Health Education

Dalhousie University, Halifax, Canada.....	\$8,285.26
--	------------

Nursing Education

University of Toronto, Canada.....	\$8,238.18
Vanderbilt University, Nashville, Tennessee....	500,000.00
Miscellaneous.....	3,004.55

\$511,242.73

Social Science Education

American University, Washington, D. C.....	\$10,000.00
American University of Beirut, Republic of Lebanon.....	15,500.00
New York School of Social Work, New York City	27,500.00
Tulane University of Louisiana, New Orleans....	11,000.00
University of Chicago, Illinois.....	45,865.51
Western Reserve University, Cleveland, Ohio....	12,500.00
Miscellaneous.....	11,119.88

\$133,485.39

Natural Science Education

Fukien Christian University, Foochow, China...	\$2,500.00
Lingnan University, Canton, China.....	10,000.00
Yenching University, Peiping, China.....	8,057.43

\$20,557.43

SECRETARY'S REPORT

Humanities Education

Brooklyn Museum, Brooklyn, New York.....	\$11,000.00
Harvard University, Cambridge, Massachusetts.	750.33
University Broadcasting Council of Chicago, Illinois.....	9,250.00
World Wide Broadcasting Foundation, Boston, Massachusetts.....	15,000.00
	<hr/>
	\$36,000.33

Departmental Development

American University of Beirut, Republic of Lebanon.....	\$50,000.00
Harvard University, Cambridge, Massachusetts.	89,828.43
Institute of the Pennsylvania Hospital, Philadel- phia.....	16,750.47
Johns Hopkins University School of Medicine, Baltimore, Maryland.....	14,579.26
London School of Economics and Political Sci- ence, England.....	12,477.84
Massachusetts General Hospital, Boston.....	15,000.00
Museum of Modern Art, New York City.....	22,000.00
Nankai University, Tientsin, China.....	44,573.81
New York Museum of Science and Industry, New York City.....	5,000.00
State University of Iowa, Iowa City.....	22,500.00
Syracuse University, New York.....	9,000.00
University of California, Berkeley.....	20,000.00
University of Chicago, Illinois.....	55,725.00
University of Cincinnati, Ohio.....	17,500.00
University of Leipzig, Germany.....	8,486.63
University of Michigan, Ann Arbor.....	16,500.00
University of Oslo, Norway.....	5,848.98
University of Oxford, England.....	6,131.25
University of Paris, France.....	11,220.00
University of Szeged, Hungary.....	7,692.91
Yale University, New Haven, Connecticut.....	138,729.03
Miscellaneous.....	9,868.88
	<hr/>
	\$599,412.49

Research Programs

Amherst College, Massachusetts.....	\$6,660.12
California Institute of Technology, Pasadena....	45,000.00
China Medical Board, Inc., New York City.....	26,718.22
Columbia University, New York City.....	134,239.82
Cornell University Medical College, New York City.....	30,177.04

THE ROCKEFELLER FOUNDATION

Dartmouth College, Hanover, New Hampshire. Medical School.....	\$28,000.00
Harvard University, Cambridge, Massachusetts.	278,081.63
Harvard University and Radcliffe College, Cam- bridge, Massachusetts.....	43,549.13
Johns Hopkins University, Baltimore, Maryland	121,215.85
Leland Stanford, Jr., University, Palo Alto, Cali- fornia.....	50,500.00
London School of Economics and Political Sci- ence, England.....	9,082.50
Massachusetts Institute of Technology, Cam- bridge.....	22,000.00
McGill University, Montreal, Canada.....	31,500.00
New York University, New York City. College of Medicine.....	5,673.66
Ohio State University, Columbus.....	9,000.00
Princeton University, New Jersey.....	11,250.00
Royal Caroline Institute, Stockholm, Sweden...	5,056.50
State University of Iowa, Iowa City.....	10,000.00
Tulane University of Louisiana, New Orleans...	11,250.00
University of California, Berkeley.....	34,500.00
University of Chicago, Illinois.....	618,069.48
University of Copenhagen, Denmark.....	7,530.70
University of Hawaii, Honolulu.....	13,000.00
University of London, England.....	15,337.50
University of Manchester, England.....	5,000.00
University of Michigan, Ann Arbor.....	38,500.00
University of Minnesota, Minneapolis.....	37,500.00
University of North Carolina, Chapel Hill.....	30,000.00
University of Oslo, Norway.....	9,625.11
University of Paris, France.....	32,659.57
University of Pennsylvania, Philadelphia.....	39,311.13
University of Rochester, New York.....	39,847.70
University of Stockholm, Sweden.....	9,838.30
University of Texas, Austin.....	20,416.67
University of Uppsala, Sweden.....	7,184.09
University of Virginia, Charlottesville.....	13,750.00
Vanderbilt University, Nashville, Tennessee....	40,000.00
Washington University, St. Louis, Missouri.....	36,873.31
Yale University, New Haven, Connecticut.....	241,250.00
Miscellaneous.....	48,277.53
	<hr/>
	\$2,217,425.56
Land and Buildings	
Connecticut College for Women, New London...	\$10,000.00
McGill University, Montreal, Canada.....	6,239.72
Shanghai, China. Expenses in connection with transfer of land to Shanghai Medical Center..	6,051.66

SECRETARY'S REPORT

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University of Geneva, Switzerland.....	\$6,287.17
University of Oxford, England.....	55,945.67
University of Utrecht, Netherlands.....	57,887.50
Miscellaneous.....	8,050.36
	<hr/>
	\$150,462.08
	<hr/>

RESEARCH INSTITUTIONS AND ORGANIZATIONS

Medical Science Education

Chinese Medical Association, Shanghai.....	\$5,091.20
	<hr/>

Social Science Education

Foreign Policy Association, New York City.....	\$11,325.19
Laboratory of Anthropology, Santa Fe, New Mexico.....	10,443.32
Social Science Research Council, New York City.	6,315.28
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	\$28,083.79
	<hr/>

Humanities Education

Institute of Pacific Relations. American Council, New York City.....	\$5,000.00
	<hr/>

General Education

Canadian National Committee for Mental Hygiene, Toronto.....	\$9,915.63
	<hr/>

General Development

American Schools of Oriental Research, Baghdad and Jerusalem.....	\$39,950.43
Brookings Institution, Washington, D. C.....	37,500.00
Canton of Geneva, Switzerland.....	102,730.07
Institute of Economic and Social Research, Paris, France.....	42,395.99
Institute of Economics and History, Copenhagen, Denmark.....	5,462.50
Institute of Pacific Relations. American Council, New York City.....	25,000.00
Institute for Psychoanalysis, Chicago, Illinois...	7,500.00
International Institute of African Languages and Cultures, London, England.....	30,127.95
Library of Congress, Washington, D. C.....	5,500.00
Long Island Biological Association, Cold Spring Harbor, New York.....	12,000.00
National Bureau of Economic Research, New York City.....	73,918.02
Social Science Research Council, New York City.	48,750.00

10 THE ROCKEFELLER FOUNDATION

Woods Hole Oceanographic Institution, Massachusetts.....	\$1,040,000.00
Zoological Station of Naples, Italy.....	8,079.75
	<hr/>
	\$1,478,914.71

Research Programs

American Council of Learned Societies, Washington, D. C.....	\$17,435.21
Australian National Research Council, Sydney..	21,636.69
Brookings Institution, Washington, D. C.....	37,500.00
Canadian National Committee for Mental Hygiene, Toronto.....	18,830.12
Chicago Area Project, Illinois.....	17,277.16
Community Council of Philadelphia, Pennsylvania.....	8,750.00
Council on Foreign Relations, New York City...	25,000.00
Dutch Economic Institute, Rotterdam, Netherlands.....	8,069.00
Economic Foundation, New York City.....	29,176.56
Emma Pendleton Bradley Home, East Providence, Rhode Island.....	7,500.00
Foreign Policy Association, New York City.....	39,298.77
Geneva Research Center, Switzerland.....	10,613.31
Institute for Psychiatric Research, Munich, Germany.....	7,488.44
Institute of Pacific Relations, Honolulu, Hawaii..	50,000.00
Massachusetts Department of Mental Diseases, Boston.....	13,700.00
Medical Research Council, London, England...	16,985.00
National Committee for Mental Hygiene, New York City.....	30,000.00
National Institute of Industrial Psychology, London, England.....	7,233.27
National Research Council, Washington, D. C...	65,629.18
New Hampshire Foundation, Concord.....	13,215.00
Orthological Institute, London, England.....	7,500.00
Roscoe B. Jackson Memorial Laboratory, Bar Harbor, Maine.....	12,500.00
Royal Institute of International Affairs, London, England.....	19,492.50
Rumanian Institute of Social Sciences, Bucharest	7,500.00
Social Science Research Council, New York City.	105,927.61
Welfare Council of New York City.....	60,000.00
Worcester State Hospital, Massachusetts.....	12,610.60
Miscellaneous.....	28,345.91
	<hr/>
	\$669,214.33

SECRETARY'S REPORT

Land and Buildings

Jungfrauoch Scientific Station, Switzerland....	\$3,952.21
Kaiser Wilhelm Institutes of Cell Physiology and Physics, Berlin-Dahlem and Berlin, Germany.	360,436.75
	<hr/>
	\$364,388.96

SPECIAL COMMITTEES AND COMMISSIONS

Governor's Commission on Unemployment Relief, New York State.....	\$5,000.00
Harvard Infantile Paralysis Commission, Cam- bridge, Massachusetts.....	5,000.00
International Commission for the Polar Year 1932- 33, Copenhagen, Denmark.....	5,425.00
International Committee of Historical Sciences, Zurich, Switzerland.....	2,054.03
National Research Council, Washington, D. C. Committee on Drug Addiction.....	48,064.88
Committee on Effects of Radiation on Living Or- ganisms.....	4,005.26
Science Advisory Board, Washington, D. C.....	15,000.00
Social Science Research Council, New York City Committee on Government Statistics and Infor- mation Services.....	11,868.54
Public Administration Committee.....	12,979.35
	<hr/>
	\$109,397.06

FELLOWSHIPS AND GRANTS IN AID

American Council of Learned Societies, Washing- ton, D. C.....	\$157,829.80
Fellowships administered by The Rockefeller Foun- dation.....	444,086.16
Grants in aid under the medical, natural, and social sciences and the humanities.....	184,083.29
Medical Research Council, London, England.....	16,401.45
National Research Council, Washington, D. C.....	191,566.45
Peiping Union Medical College, China.....	25,033.29
Research aid funds in the medical, natural, and social sciences and the humanities.....	285,582.59
Research and developmental aid in China.....	21,585.50
Social Science Research Council, New York City..	73,932.30
Miscellaneous.....	10,534.77
	<hr/>
	\$1,410,635.60

12 THE ROCKEFELLER FOUNDATION

STUDIES OF PRESSING ECONOMIC PROBLEMS

Appraisal and Planning Projects

Brookings Institution, Washington, D. C. \$90,155.57
 Social Science Research Council, New York City. 59,756.54

Direct Grants to Operating Government Agencies

Federal Emergency Relief Administration, Wash-
 ington, D. C. 1,903.60

Subventions to Cooperating Private Agencies

American Municipal Association, Chicago, Illinois 98,291.48

American Public Welfare Association, Chicago,
 Illinois. 35,000.00

Commission on Interracial Cooperation, Atlanta,
 Georgia. 12,075.75

Industrial Relations Counselors, New York City. 8,202.14

National Association of Housing Officials,
 Chicago, Illinois. 38,266.28

Miscellaneous. 4,777.90

\$348,429.26

MISCELLANEOUS

American Council of Learned Societies, Washing-
 ton, D. C. \$31,673.00

American Geographical Society, New York City. 14,500.00

American Psychological Association, Princeton,
 N. J. 7,300.50

American Statistical Association, Washington, D. C. 7,500.00

Bibliographical Society of America, Providence,
 Rhode Island. 8,500.00

Chinese Mass Education Movement, Ting Hsien,
 Hopei, China. 32,586.13

League of Nations, Geneva, Switzerland. 6,764.03

Library of Congress, Washington, D. C. 10,000.00

Long Island Biological Association, Cold Spring
 Harbor, New York. 7,000.00

Massachusetts Institute of Technology, Cambridge 5,000.00

Medical literature for Russia. 10,005.83

National Academy of Sciences, Washington, D. C. 15,760.34

National Research Council, Washington, D. C. 78,302.83

Social Science Research Council, New York City. 11,711.56

University of Chicago, Illinois. 76,087.93

Virginia Historical Society, Richmond. 6,000.00

Miscellaneous. 30,720.05

\$359,412.20

PUBLIC HEALTH

Central Medical School for Native Medical Students, Suva, Fiji.....	\$7,419.44
Regular program of the International Health Division in state and local health work, public health education, control and investigations of specific diseases.....	2,015,470.95
League of Nations Health Organization, Geneva, Switzerland.....	105,220.56
National Health Administration of China, Nanking	19,534.91
Schools and institutes of hygiene and public health Hungary. Budapest.....	9,804.06
Italy. Rome.....	10,853.93
Japan. Tokyo.....	27,757.64
University of Brussels, Belgium.....	247,118.13
	<hr/>
	\$2,443,179.62

GENERAL*

Commission on Interracial Cooperation, Atlanta, Georgia.....	\$36,689.55
East Harlem Nursing and Health Service, New York City.....	19,166.67
Institute of International Education, New York City.....	30,000.00
Institute of the Educational Sciences, Geneva, Switzerland.....	9,795.92
Peiping Union Medical College, China.....	1,115.05
Playground and Recreation Association of America, New York City.....	50,000.00
State University of Iowa, Iowa City.....	84,667.40
University of Minnesota, Minneapolis.....	72,425.34
University of Toronto, Canada.....	10,000.00
	<hr/>
	\$313,859.93

ADMINISTRATION

Maintenance of New York, European, and Shanghai offices.....	\$780,520.99
	<hr/>
	\$12,725,439.34

* These appropriations, while administered by The Rockefeller Foundation under terms of the consolidation agreement, represent items which would not, in general, be included in the present program of the Foundation.

I4 THE ROCKEFELLER FOUNDATION

Funds and Property

As of December 31, 1935

PRINCIPAL FUND

Balance in The Rockefeller Foundation Principal Fund as of December 31, 1934.....	\$153,609,942.09
Funds reverting to the Principal Fund	
Pledge allowed to lapse.....	50,000.00
	<hr/>
	\$153,659,942.09
	<hr/> <hr/>

BUILDING AND EQUIPMENT

In New York	
Furniture and equipment of offices.....	\$51,543.52
In Paris	
Part interest in building occupied by the Paris office.....	64,514.29
	<hr/>
	\$116,057.81
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INTERNATIONAL HEALTH DIVISION

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INTERNATIONAL HEALTH DIVISION¹

Public Health General Program

The year 1935 was a significant one in the history of the public health work of The Rockefeller Foundation, since it marks more sharply than any other year the shift in program from the old to the new. This transition has not been an abrupt one. It began some five or six years ago and is not yet wholly ended, but, in general, 1935 may be considered as marking the completion of one phase of the work.

The dominant feature of the former worldwide program was the creation and development of technically competent local, state, and national health services. This was the outcome of the still earlier hookworm work, which led to an interest in the formation of well-rounded health departments which would include the control of hookworm disease and similar types of public health work as an integral part of their regular health-protection programs. In the majority of countries in which the Foundation has been active, demonstrations have now been made to

¹ A more detailed report devoted exclusively to the activities of The Rockefeller Foundation in 1935 in the field of public health is available on request.

show the feasibility of this sort of administrative machinery in applying existing knowledge for the advancement of public health.

The demonstrations in which the Foundation has participated, and the ever-increasing application of present-day methods by governments, have undoubtedly greatly extended the benefits of public health service, but at the same time they have brought out, as nothing else could have done, the very real limitations of existing knowledge and particularly its frequent inadequacy when applied to specific problems under special conditions. Through experience it has become apparent that the Foundation can render its greatest service in the public health field by shifting its emphasis from the rapid and extensive application of existing knowledge to the securing of additional facts necessary to effective and economical control of disease. The changed program still includes extensive cooperation with governments in disease control by means of demonstrations and supplying the services of experts, but the important preceding and concurrent critical studies have been extended and intensified and the resulting observations made widely available.

The dominant feature of the new program is field research, through which it is hoped to arrive at the control of certain specific diseases. Among

the diseases studied in 1935 yellow fever heads the list; malaria likewise occupies a position of major importance. Significant contributions were, however, also made in schistosomiasis, yaws, tuberculosis, undulant fever, and other diseases.

The attempt is not made to engage in research on all the diseases in the field of public health. Efforts are concentrated on a limited number of clear-cut public health problems, with emphasis on the need for studies of disease in its environment and on closely related laboratory investigations, in order to define the problems with greater accuracy and to search for more effective and less expensive methods of disease control.

Whether the Foundation concentrates on administrative procedures or on the advancement of knowledge in public health and hygiene, the matter of public health education cannot be neglected. For this reason advancing the education of public health officers and nurses through a fellowship program and aid to institutions receives continued attention. Provision of opportunity for the field practice required by schools of hygiene is also a feature which is still emphasized in the Foundation's program. It is the need for such field centers which has led to cooperation in the establishment of a number of new health centers in Europe and elsewhere.

Projects of the Year

Grants were made for yellow fever studies in Brazil; for research on yellow fever, malaria, and other diseases at the laboratories of the International Health Division at the Rockefeller Institute; for field research on malaria in Cuba, Puerto Rico, Albania, Bulgaria, Greece, Italy, Portugal, Spain, and India, and for laboratory studies of this disease at the University of Chicago under Dr. W. H. Taliaferro; for demonstrations in the control of malaria in Colombia, Nicaragua, Salvador, and Albania; for investigations and control of hookworm disease in Egypt, and for surveys to determine the present status of hookworm disease in areas of North Carolina where campaigns for its control were carried on from 1910 to 1915 by the Rockefeller Sanitary Commission and the International Health Commission; for studies of tuberculosis at Cornell University Medical College under Dr. E. L. Opie, and in Alabama, Austria, Jamaica, and Tennessee; for the study of yaws in Jamaica and of undulant fever in France; for research at Columbia University on the common cold; for diphtheria investigations in Austria and Peiping, China; for studies on influenza, to be carried out for the most part in the United States; for research on typhoid fever at the State Institute and School of Hygiene, Warsaw, Poland; for

studies of mental hygiene in Tennessee and under the auspices of the Johns Hopkins University School of Hygiene and Public Health in Baltimore, Maryland; for the development, under the Polish National Department of Health, of a division of mental hygiene in the Warsaw School of Hygiene; and for research on smallpox vaccine at the National Institute of Hygiene in Madrid, Spain.

Assistance in the development of government health services included grants to the central health departments of seven states in the United States and to Guatemala, India, Java, Mexico, the Philippine Islands, and the islands of the South Pacific, toward the cost of administering local health organizations; to the health departments of thirteen states in the United States and to Denmark, for the development of epidemiological services; to the health departments of Arizona, South Dakota, Tennessee, Egypt, Greece, and Jamaica, for the support of sanitary engineering services; to the health departments of Alabama, Missouri, and Tennessee, for their divisions of vital statistics; to the Provincial Bureau of Health of Quebec, toward the establishment of a division of industrial hygiene and a division of the hygiene of nutrition; to the health departments of North Carolina, Tennessee, Colombia, and Puerto Rico, for the develop-

ment of public health laboratory services; to the Health Department of Nicaragua, for the support of a training center for public health laboratory personnel; to the Health Department of the city of Baltimore, for work in the communicable diseases division of the city laboratory; to the National Department of Health of Poland, for its Division of Public Health Nursing.

Aid to local health departments was given in Kentucky, North Carolina, Virginia, Austria, British Columbia, Costa Rica, Hungary, India, Java, Manitoba, Mexico, Nicaragua, Puerto Rico, Spain, and Turkey.

Public health education was assisted through emergency grants for maintenance to the State Hygienic Institute, Budapest, Hungary, and the School of Public Health at Zagreb, Yugoslavia; by appropriations to the Central Medical School for Native Medical Students, Suva, Fiji, for enlarging the laboratory building; to the Rumanian Health Service, for the development of a health center at Bucharest in connection with the Institute of Hygiene; to the School of Hygiene at Athens, Greece, toward the establishment of a model health center for the training of personnel; and by the support of training stations for public health personnel in Colombia and Puerto Rico. Contributions were made toward the maintenance of schools of nursing at

Skidmore College, Vanderbilt University, Western Reserve University, the University of Washington, and in Bucharest, Rumania. Fellowships in public health and in public health nursing were provided, and health personnel were given opportunities for training through health demonstrations and travel.

Yellow Fever

Geographical Spread

Ten years ago yellow fever was believed to be restricted, as far as the South American continent was concerned, to a district in the northeast of Brazil, and to be rapidly disappearing as a result of antimosquito services in a few of the larger cities. It is now realized that yellow fever is widely disseminated over the continent east of the Andes and north of Paraguay, and the hope that the disease might shortly be brought under control or disappear has been deferred. Ten years ago yellow fever was regarded as an urban disease transmitted by *Aedes aegypti*, a mosquito living and breeding almost entirely in houses, whereas today it is known that yellow fever is widespread in the interior and occurs as a jungle disease hundreds of miles away from the nearest *Aedes aegypti* habitat.

In 1930 an attempt was made to intensify

antimosquito measures in Brazil, and to organize them in even the smallest towns. It was also resolved to look for yellow fever in country places where it had not previously been recognized. There were a number of outbreaks of disease that looked like yellow fever at unexpected places between 1930 and 1935, but its discovery in Goyaz and elsewhere in south central Brazil in 1935 was one of the dramatic events in epidemiology. The area in Goyaz was one in which yellow fever had never previously been reported; it was investigated simply in order to complete a survey. By accident one of the doctors making the survey had a conversation with a local practitioner who mentioned that from up country there had come a fatal case of malaria with some unusual features. On going into the district concerned many other cases of a disease found to be yellow fever were discovered in a stretch of country extending over one hundred thousand square miles. This was country which could not be considered jungle or wild territory, because it contained towns with populations of over thirty thousand, but the strange thing was that the disease did not come into the towns.

It was soon observed that this was the type of yellow fever which has been designated "jungle yellow fever," initially described and discussed



Photograph Excised Here

Surveyor in the Annapolis, Brazil, yellow fever headquarters, at work on a map of the state of Goyaz, a sparsely settled region where numerous cases of jungle yellow fever occurred during 1935.



Photograph Excised Here

Catching mosquitoes feeding on a native on the outskirts of a jungle in Goyaz where yellow fever is endemic.

Second Intentional Exposure

in the Rockefeller Foundation Annual Report for 1934. The definition of jungle yellow fever has had to be widened. Jungle yellow fever may be defined as yellow fever occurring in rural, jungle, or fluvial zones in the absence of *Aedes aegypti*. Jungle yellow fever has now been observed long and thoroughly enough for its clinical identity with the type transmitted by *Aedes aegypti* to be firmly established. Cases of every degree of severity were seen in jungle yellow fever, just as in urban yellow fever. As seen under the microscope, the damages to the liver are identical. The virus in jungle cases when inoculated into mice or monkeys gives exactly the same results as does the urban virus. The characteristic difference between jungle yellow fever and the yellow fever of the urban type transmitted by the *aegypti* mosquito is that the former is acquired away from houses, whereas the latter is transmitted by a domestic mosquito and contracted in the house itself. This gives rise to an entirely different distribution of cases in the population. The urban fever occurs to about the same extent among females as among males, but the jungle fever is much more common among men. In the jungle cases the peak of distribution occurs at about the age of twenty-five, while in the urban type people are attacked at all ages. In one area this jungle type of yellow fever is



Photograph Excised Here

Damming the Tirana River in Albania to divert the entire summer flow into an irrigation system to prevent mosquito breeding during the malaria season.



Photograph Excised Here

Field instruction under the Malaria Division of the Institute of Public Health, Rome, for foreign students attending the League of Nations course in malariology in Italy, June 18 to August 17.

known as "the fever of the young engaged man," because it so often occurs among young persons who are setting up a home and moving farther out into the wilds or jungle. It was the jungle cases and also cases of the urban variety among young children that had been largely missed in past years.

During the year there was published further information on a general survey of the continent of Africa with regard to the geographic distribution of yellow fever. In Africa yellow fever immunity in man, as determined by blood tests in mice, is widely but irregularly distributed in a region extending from the coast of Senegal eastward for approximately 3,300 miles to the upper reaches of the White Nile in the Anglo-Egyptian Sudan. The northern limit of this region is the Sahara desert. The western and southern boundaries follow the coast of the Atlantic Ocean from Senegal to the extreme northern part of Angola and then turn eastward across Angola and the southern part of the Belgian Congo. The region has a maximum width of about 1,400 miles and lies between the latitudes of 16° North and 6° South. Human blood specimens from localities scattered throughout the parts of Africa lying outside of this region were found to be without power to protect mice against yellow fever virus except in a few rare instances which may be ex-

plained without invalidating the general rule. The region thus delimited may be considered as endemic in the sense that the infection is always present and widely distributed. This is the endemic region of the Eastern Hemisphere. It is one of the two great endemic regions of the world, the other being the one in South America discussed above.

The African yellow fever region may be divided into two parts. There is a western area which extends to the eastern border of Nigeria and includes also the coastal regions from Nigeria to Angola. This western area has had numerous epidemics of yellow fever, both on the coast and in the interior, and is still having them. All the historic outbreaks of yellow fever in Africa south of the Sahara have occurred within this area. In the eastern area, which includes the remainder of the endemic region, the situation is radically different. Yellow fever, outside of perhaps a single sporadic case, has never been recognized there. It is possible that we may here be dealing with strains of yellow fever virus which differ from those in classic epidemics by having a lowered virulence or a lack of selective localization in vital organs. There may be environmental conditions similar to those responsible for the perpetuation and limitation of the jungle yellow fever now being studied in South America. This

eastern zone of high prevalence of yellow fever infection as indicated by resulting immunity requires further intensive study.

Control and Vaccination

As far as the jungle variety of yellow fever is concerned, there has been up to now little to offer in the way of control. Vaccination gives some hope for the protection of the individual, but as a means of controlling the disease it is as yet out of the question. Until more is known of the source of infection in the jungle and the mechanism of its transmission from such a source to man, a program for control cannot be drawn up.

But yellow fever in the cities can be prevented through mosquito control, and methods in Brazil have been so greatly perfected during the past two years that the control of *Aedes aegypti* in urban districts can now be carried out at a fraction of the cost of five or ten years ago. In the earlier days of anti-*aegypti* work it was found that if the breeding index, or the proportion of houses in which larvae could be found, was brought down to 5 per cent or lower, yellow fever spontaneously disappeared from the community. But the attempt to reduce the breeding index to zero was frustrated by enormous expense. Until recently routine practice was able

to bring the breeding index down to 2 or 3 per cent, but latterly it has been found economically possible to bring it down practically to zero. In Rio de Janeiro, with a population of over one and a half million, and with 270,000 houses containing millions of potential breeding places, it is now possible to go for weeks at a time without discovering a single *stegomyia* mosquito; when such a mosquito is discovered, it is along the waterfront or railway line, indicating the reintroduction of the species rather than previously undetected breeding places.

Most of the activities of yellow fever investigation at the laboratories of The Rockefeller Foundation in New York City were concentrated in 1935 on improving the method of vaccination in order to make immunization more practical and more readily available to large populations. Encouraging results were obtained in the prolonged cultivation of yellow fever virus in tissue cultures for the purpose of reducing its virulence without altering its valuable antigenic properties.

Although the virus grown in tissue cultures loses much of its initial virulence, and is used at present for human vaccination in place of the highly neurotropic mouse passage virus previously employed, it is still considered unsafe for use in human vaccination without simultaneous

protection with immune serum. In the past, immune human serum has been used exclusively for this purpose. The use of this human serum makes the application of human vaccination on a large scale impracticable, as few persons maintain a highly protective serum in their blood for a long period of time after recovering from the disease. Moreover, as such serum must be purchased from donors, the cost of a single vaccination is high. In order to obtain a more practicable source of immune serum for vaccination purposes, an investigation was undertaken to determine the feasibility of using goats for the production of yellow fever antiserum. Results were sufficiently encouraging to warrant undertaking the production of immune goat serum on a larger scale. The goat serum was tried on two members of the laboratory staff and in both instances severe urticaria and local edema resulted. Further work was undertaken on this serum for the purpose of reducing its toxicity and concentrating the immune substances to reduce to a minimum the amount of foreign protein injected in vaccination. The results achieved indicate that the serum still gives undesirable reactions, although much milder than those caused by untreated goat serum.

Concurrently a study was undertaken to determine whether a hyperimmune serum could be

produced in monkeys. By using the general technique employed in producing a high potency serum in rabbits, it was possible to obtain from monkeys a serum found to have a protective power over twenty times as great as that of the human immune serum previously used for vaccination purposes. Four cubic centimeters of this serum were considered sufficient to allow an ample margin of safety in the vaccination of an adult of average weight. This new type serum is at present being used on a fairly large scale in Brazil for vaccination under field conditions. The results in the laboratory using tissue culture virus together with this serum were highly satisfactory, in that good immunity, with little adverse reaction, was obtained. Reports from Brazil on its use under field conditions have been similarly gratifying.

Malaria

The 1935 budget of the International Health Division of The Rockefeller Foundation contained items providing for field research on malaria in Cuba, Puerto Rico, Albania, Bulgaria, Greece, Italy, Portugal, Spain, and India; laboratory studies of this disease at the University of Chicago under Dr. W. H. Taliaferro; and demonstrations in the control of malaria in Colombia, Nicaragua, Salvador, and Albania.

What can be done when efforts against malaria are exerted faithfully from year to year is shown by the following table with regard to work at Fiumicino, Italy. The table covers fifteen years, from 1921 to 1935. Antimosquito work was begun in 1926. The figures indicate that mosquitoes

FIUMICINO: ANNUAL CATCHES OF ANOPHELINES IN RELATION TO MALARIA CASES 1921-1935

Year	Anopheles taken in fixed catching stations	Population		Malaria dispensary cases per 1,000 population
		Winter	Summer visitors	
1921	No observations	3,300	0	221
1922	No observations	3,300	0	263
1923	No observations	3,300	0	360
1924	No observations	3,500	0	337
1925	No observations	3,500	0	232
1926*	5,132	4,000	?	94
1927	1,488	4,500	?	30
1928	2,644	4,500	8,200	40
1929	312	4,500	8,700	26
1930	246	4,500	8,700	39
1931	53	6,000	9,000	14
1932	29	7,500	11,500	5
1933	1	8,300	12,000	6
1934	1	8,300	12,800	5
1935	1	8,500	11,000	2

* Larva control work begun.

gradually disappeared, that malaria was vanquished, and that the population of the town increased until it has now become a prosperous summer colony.

The work at Fiumicino was in the nature of a strictly local demonstration. The Foundation makes no attempt to aid in combating malaria

throughout the length and breadth of any country. Certain restricted areas are selected to show what, if anything, can be done to control malaria by methods adapted to that locality and within the means of the population concerned. Since work is undertaken only in cooperation with the local authorities or government the result of these demonstrations usually is that further work along the same lines is incorporated as a part of government activities.

The Rockefeller Foundation is interested in malaria field studies in Albania, where a malariologist, a drainage engineer, and an entomologist collaborate with the Albanian Government in devising permanent antilarval measures based on sound biological and engineering investigations. Under new conditions such as exist in Albania a permanent solution of local malaria problems, while it may be more expensive in the beginning, is to be preferred to temporary measures, such as the application of larvicides. It is possible to awaken enthusiasm in the population to make the financial sacrifices necessary to secure permanent measures of control that do not need constant maintenance.

Various experiments were carried out in Portugal in an effort to arrive at a satisfactory control of malaria in the rice fields. The attempt was made to provide surrounding barriers of animals

to draw off the mosquitoes as a protection to the population, but this was unsuccessful. It is believed that the local race of *Anopheles* prefers sheltered feeding to feeding in the open, and that this is one of the reasons why these animal barriers (rabbits and pigs) gave but little protection. Screening experiments were also carried on. Work is under way and further experiments are to be made in the biological control of malaria. Extensive field studies of rice fields and malaria are likewise being continued in Petritch, Bulgaria.

During the year there were completed four years of successful malaria control by antilarval measures in Spain. The original objective in setting up a station at Campo Lugar, Cáceres, Spain, has been attained. In Greece the year 1935 brought to an end five years of successful antilarval field studies in a rural and an urban area; cooperative antilarval demonstrations were continued in three other regions for another year. A screening demonstration was continued effectively for the fourth year. The antimalaria drainage project carried out in 1932 in the Nea Macri area of the Marathon plain continued to show a decrease in malaria and anophelism. A new project was the initiation of malaria studies in Cyprus, with a preliminary malaria survey in 1935.

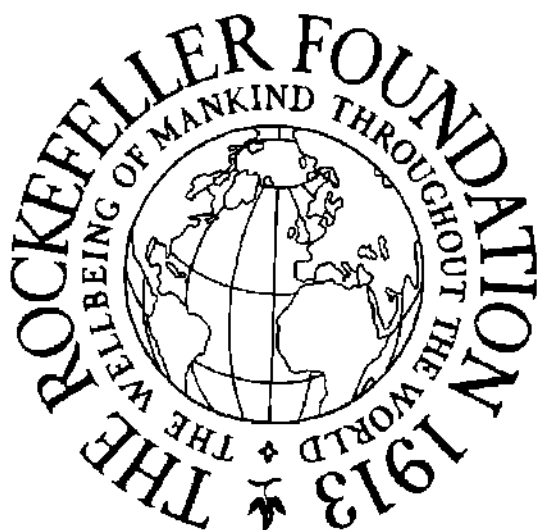
A simple method has been devised for detecting the eggs of *Anopheles* in the breeding places of mosquitoes. A thumbless mitten or bag of white cloth is worn on the left hand; the surface of the water is skimmed with a pan, and the contents of the pan are strained through the mitten. The material collected on the mitten is examined immediately with a hand lens. The usefulness of this method is greatest in regions where the eggs of *Anopheles* are easily identified. In parts of Europe where *A. elutus*, *A. maculipennis*, and *A. superpictus* are found, the method has proved very practical.

In the United States a field study is at present being carried on at the station located in Tallahassee, Florida, where malaria naturally induced for its therapeutic effects is being studied with the cooperation of the Florida State Hospital at Chattahoochee. Important work in both avian and simian malaria is being continued with Foundation aid by Dr. W. H. Taliaferro of the University of Chicago. Thus far the principles involved in infections in birds have been found to be the same as those in mammals, but the time relationships are entirely different. Everything is speeded up in birds, but general principles from bird work can be applied almost directly to monkey infections and these in turn are probably directly applicable to man.

Hookworm and Schistosomiasis

In former years The Rockefeller Foundation engaged extensively in work connected with the investigation and control of hookworm disease. This work was carried on in many countries in the tropical and semitropical belt encircling the world. Many cases were cured; numerous control campaigns involving preventive sanitation work were instituted; and, gradually, work against hookworm disease was incorporated in most countries as part of the regular routine of the health departments. At present the only regions in which the Foundation is still actively supporting hookworm work are North Carolina and Egypt.

During the years 1910 to 1915 the Rockefeller Sanitary Commission and, later, the International Health Commission of The Rockefeller Foundation conducted a hookworm control program in North Carolina which aided materially in checking this disease. With the development of county health units, in North Carolina and elsewhere, hookworm disease control was incorporated as a part of the local health program. In 1935 a survey was inaugurated to determine the present status of hookworm disease in North Carolina. This survey is supported jointly by the North Carolina State Board of Health, Vanderbilt University, and the International Health



Photograph Excised Here

Students' laboratory, Malaria Division, Institute of Public Health, Rome. The Foundation contributed funds toward the building and equipping of the institute, which was opened in 1934.



Photograph Excised Here

Malariaologist in Greece employing a simple method of detecting *Anopheles* eggs in suspected breeding places. A loose, thumbless mitten of wide-meshed white cloth is worn on the left hand, while the right hand is used to dip water in a pan. The mittened hand is held cupped and the fingers are slowly manipulated to strain the water, leaving the eggs in convenient position for examination.

Division of The Rockefeller Foundation. The program covers the period from October 1, 1935, to March 31, 1937. By the end of 1935, 103 schools, seventy-eight of them white and twenty-five Negro, had been surveyed in sixteen counties in eastern North Carolina. Almost 10,000 specimens had been obtained from the 103 schools, and the survey was well under way.

The work in Egypt concerns a continued demonstration in the control of soil pollution. As is well known, the only effective way of preventing hookworm disease is to prevent soil pollution by human excreta. This involves the provision of sanitary latrines and an educational campaign to inculcate their use. In Egypt an effort is being made to sanitize three villages in each of the fourteen provinces and three governates of the country. If the present rate of progress can be continued, the program will be completed by the end of 1936. In Egypt a change in the habits of the people living in villages in rural areas is already noticeable. Practical sanitation is being achieved.

During 1935 there was also completed a helminthological survey of Egypt, in which at least 40,000 representative individuals were investigated through a microscopic examination of over 150,000 slides containing stool specimens. Originally this study was planned as an attempt solely



Photograph Excised Here

Clinic at Harewood, St. Catherine, opened in June for the treatment of yaws by the Jamaica Yaws Commission.



Photograph Excised Here

Lines of sanitary latrines being installed on a coffee plantation by the Turrialba health unit, Costa Rica, in its work for the control of soil pollution diseases.

to evaluate the effect of sanitation with bored-hole latrines by studying worm parasite infestation, but as the survey proceeded it supplied in addition a knowledge of the distribution of various parasites over the country as a whole. It revealed the differences of infestation level which might occur even within small areas. It indicated the natural variability of infestation level from year to year and with the different seasons of the year. From this survey, which has extended over a period of six years, a good idea can be obtained of the helminthological or worm parasite infestation in the country.

For the past five years the Foundation has also been cooperating with the government in Egypt on the problem of schistosomiasis. This is a disease caused by parasitic worms of the genus *Schistosoma*, which enter the skin in larval form from infested water and invade various organs, causing severe inflammation or irritation. The intermediate host for *Schistosoma* is a snail. Before the problem of schistosomiasis can be solved, it is obvious that the snail problem must be understood. Little has been known about snails as carriers of disease, but the work has now reached the stage where it seems that canal clearance offers considerable hope for ridding irrigation canals of snails. Control of the snail and thereby of schistosomiasis lies uppermost in the

minds of many workers in the field of medical research in Egypt. It is thought that in a vigorously conducted attack on the intermediate host lies the best possibility of success.

Tuberculosis

At three places in the United States, in Jamaica, and in Austria the Foundation has aided tuberculosis work. A study is being made of the prevalence, distribution, and importance of tuberculosis in Lee County, Alabama. During 1935 a unit was equipped with a truck and portable x-ray outfit to facilitate the taking of x-ray films in rural communities out of reach of electric current. In this study special attention is given to families in which there are manifest cases of tuberculosis, or in which tuberculosis deaths have occurred since 1925. A family graph is being used to summarize the observations made. Tuberculin tests are also being applied to population groups. A field study of rural tuberculosis is being conducted in Williamson County, Tennessee. A detailed and systematic investigation, both epidemiological and clinical, of all persons with tuberculosis is being made in order to acquire more exact knowledge of the clinical course of tuberculosis. Further purposes are to determine the pathological conditions that exist among the immediate contacts of cases of tuber-

culosis, to arrive at a more effective program of case finding in the community, and to learn more of the relationship between childhood tuberculosis and subsequent breakdown in adult life. The final purpose, of course, is the development of an effective program of tuberculosis control. The Foundation is also aiding an epidemiological study of tuberculosis by the Cornell University Medical College and the New York Hospital which aims to obtain further insight into the character, frequency, and mode of spread of tuberculosis in the districts about the New York Hospital Tuberculosis Clinic, to determine the value of control procedures now in practice, and ways in which they may be improved.

Cooperative tuberculosis work in Jamaica began in 1928. At that time a tuberculosis dispensary was established to afford an opportunity for a detailed study of the disease as found in colored races in a tropical country. In 1931 this study was extended into the homes of the people to acquire more detailed knowledge of the epidemiology of the disease. Extensive surveys were carried out and, as a result of the information obtained from the dispensary work and from the surveys, it was possible by 1933 to recommend to the government an acceptable plan for the control of tuberculosis in the colony. Wide interest in the control of tuberculosis was aroused

among the people. Dispensaries for the diagnosis and treatment of tuberculosis have been established in thirteen of the fourteen parishes. Infirmaries for the care of advanced cases have been provided in eight of these parishes and are under construction in two other parishes. Arrangements are being made to erect a central tuberculosis sanatorium of one hundred beds at Kingston. The tuberculosis work in Jamaica is part of a larger health program busily engaging all the public health forces of the island.

The Foundation is also interested in the Epidemiological Bureau of Denmark, where it is cooperating in field and laboratory research. During 1935 the bulk of the work under the special Foundation grant related to tuberculosis and, more specifically, to an investigation dealing with tuberculin.

Cooperation in an investigation of tuberculosis in Eisenstadt, Austria, was begun in 1932. The work is carried on as part of the Eisenstadt local health department activities. At present it is estimated that about 60 per cent of all the open cases in the area under observation are known, and efforts are under way to search out the remaining 40 per cent. The Foundation has made a contribution for the continuation of this work, which will involve the use of a portable x-ray apparatus. During 1935 efforts in Austria were

concentrated on intensifying family studies and on statistical work with material already collected.

Other Diseases

Foundation aid to a diphtheria research program in Eisenstadt began in 1933. Successful initial work against diphtheria by immunization with formol-toxoid, authorized in Austria in 1935, led to an active campaign enlisting the cooperation of physicians, public health workers, county officials, and health supervisors. The research program was practically completed by the end of 1935. In the coming years it is intended to extend this immunization to all parts of the country.

During 1935 funds were designated for diphtheria research in Peiping, China. A member of the staff of the International Health Division of The Rockefeller Foundation acted in an advisory capacity in connection with this research program.

In 1932 the Foundation began to conduct cooperative studies in Jamaica to devise effective methods for the control of yaws. In a district with a high incidence of yaws intensive studies were made of the onset, symptoms, course, and spread of the infection, using different drugs under careful control in the treatment of the disease. The knowledge thus gained led to the

organization of two treatment units, which since 1933 have been highly successful in bringing the disease under control in areas where its incidence had been very high. During 1934 the Foundation, in addition to cooperating with the government in the treatment units, maintained a research unit which made important studies of the epidemiology of yaws, including animal experiments. During the last half of 1934 and the first half of 1935 there was conducted an island-wide survey to determine the distribution of yaws in Jamaica and the correlation between the presence of yaws and such factors as rainfall, soil and geological formations, and the social and economic status of the people. This study has been completed. The disease appears to be prevalent in Jamaica in districts having a high rainfall, a relatively impervious soil, and a population of low economic status living under insanitary conditions. On the entomological side, an investigation has been carried out demonstrating that *Hippelates* flies can carry yaws infection mechanically from man to rabbits. Further studies of the rôle played by these flies are in progress.

The Rockefeller Foundation has given aid to the smallpox vaccine laboratory of the National Institute of Hygiene, Spain. At this laboratory there are under way important technical studies in connection with the cultivation of smallpox

vaccine virus in chick embryo tissues. Cooperation in this vaccine work has been established with the authorities in Austria. The Spanish smallpox laboratory has furnished the Austrians a culture vaccine which is being tried out under field conditions. The work, therefore, is important not only for its influence in Spain but also for its influence outside of the country.

Work was started in November 1935 in connection with a field study of scarlet fever in Rumania. Headquarters have been established at Jassy.

After more than four years of investigation the cooperation of the Foundation in undulant fever work in Southern France terminated in the fall of 1935. The work will be continued under government auspices. Undulant fever in France is almost exclusively a rural disease occurring among individuals whose occupations bring them into direct contact with sheep, goats, or cows. The most hopeful solution appears to be the control of infection among animals through precautionary measures in breeding and raising them.

Studies of the viruses of the common cold and of influenza were pursued in 1935 along the lines of maintaining cultures in chick embryo tissue and using the cultured virus in experimental vaccination; and carrying on experimentation

with a view to adapting the cultured viruses to various animals which might be useful in the laboratory in the study of influenza and the common cold. These studies, receiving Foundation support, were conducted under the leadership of Dr. A. R. Dochez of Columbia University. Toward the end of the year an allotment of funds was made for influenza research at the Laboratories of the International Health Division in New York City.

Public Health Nursing

Aid for the development of public health nursing during 1935 was given to centers in Europe, the Near and Far East, South and Central America, Canada, and the United States. It included financial assistance for the establishment of health centers, for buildings, endowment, equipment, maintenance, and personnel of nursing schools, travel study grants and fellowships, and investigations and surveys.

An indispensable condition for Foundation collaboration with European nursing schools has been the inclusion of practical public health nursing in the basic undergraduate curriculum. To effect this end the Foundation has often participated in the development of health centers suitable for training fields when such were not already present, as in Athens, Bucharest, Cleve-

land, and Istanbul. The School of Nursing of the University of Lyon received final payments during 1935 on a total grant of \$198,196.99 for building costs and equipment, and the School for Public Health and Social Welfare Nurses at Prague received \$100,000 for the same purpose. The sum of \$18,333.33 was granted to Vanderbilt University for maintenance of the School of Nursing in 1935. A grant for maintenance was made to the School of Public Health Nursing at Zagreb, and further payments were made on an appropriation to the general expense fund of the East Harlem Nursing and Health Service, New York. An appropriation of \$262,000 made to the University of Brussels for the endowment of the university School of Nursing is discussed on page 110.

New projects in public health nursing were initiated in 1935 in Rumania and Greece. Aid to various former projects was terminated with the assurance of continued local support.

One purpose of fellowships in nursing granted by the Foundation is the preparation of teachers for schools of nursing with which the Foundation is cooperating. Travel grants have been awarded to experienced nursing executives for the purpose of breaking down national barriers in nursing thought: two grants of this type were given to representatives of the Maternity

Center Association in New York, for the study of midwifery in Europe. A survey made of nursing conditions in Portugal led to the initiation of a fellowship program for the improvement of public health nursing in that country.

Public Health Education

Aid has been given to the Johns Hopkins School of Hygiene and Public Health for the development of a field training and study area in the city of Baltimore (Eastern Health District) over a period ending August 31, 1937. The various health and welfare agencies working in the area have been coordinated with a view to greater efficiency, and, where necessary, especially selected personnel have been added to the staff. Major difficulties of organization have been overcome. Entirely satisfactory working agreements have been established with the city Health Department and with other public health agencies. While each of the several agencies maintains its separate identity, their activities and personnel within the district are not merely coordinated but are actually consolidated under one administrative head. In general, it is the principal function of the district to furnish the direct personal services, chiefly of nurses and physicians, required to supplement and utilize the much more extensive and costly services pro-

vided from other sources. An outstanding development has been the extension of child hygiene facilities. A building adjacent to the school and owned by the university was rented. These additional quarters added to the old provide an excellent plant for ordinary operation of a child health service, for practical student nurse experience, and for public health students interested in the administrative, pediatric, or research phases of child hygiene.

A field training area in connection with the Harvard School of Public Health has been established at Newton, Massachusetts. Work under the first budget for this project commenced June 1, 1935. Arrangements were made for the students from the School of Public Health to receive practical field training in the Newton municipal Department of Health. Arrangements were also made for similar training for students from the Simmons College School of Nursing. The health officer in charge of the area is Dr. Harold D. Chope, a former International Health Division fellow who received his M.P.H. degree from the Harvard School of Public Health.

In Oslo, Norway, a five-year program for aid in the development of a school of public health terminated on June 30, 1935. This school is now receiving the support not only of public health

officials but also of local health officers for whose education it was originally designed. It is felt that the courses offered at the school thus far have been of great value in improving hygienic conditions in Norway. It has been especially pointed out by the public health officers in their annual reports that they have observed an increased interest in public health matters and improvement of hygienic conditions in those districts where summer students of the school have worked.

Since 1923 the International Health Division has maintained an active interest in the Warsaw School of Hygiene in Poland, first by contributing toward its construction and equipment, then by lending the services of a professor and by training men through fellowships for teaching positions in the school. Emergency aid to enable the institute to continue its work was later granted. Assistance for these purposes terminated March 31, 1935.

Continued aid to the Zagreb School of Public Health, Yugoslavia, was designated in 1935 as an emergency grant for a period ending December 31, 1936. Without some outside aid the school was faced either with a reduction of essential services or with delay in the plans for production of neosalvarsan. Interest in this grant extends beyond Yugoslavia, for the school's

technique for improving village life has had an important influence on the health authorities of other countries where similar conditions exist.

In Hungary an extension of the building of the State Hygienic Institute in Budapest was made possible by Rockefeller Foundation financial help. The new rooms completed late in 1935 are occupied by the Division of Chemistry and the Division of General Hygiene. Excellent teaching activities are carried on in this institute. The School of Nursing connected with it is now filled to capacity, owing to the increased demand for public health nurses. At the beginning of the year three groups of students attended this school, the total number being seventy-seven. The increasing number of students necessitated the extension of teaching facilities for those engaged in practical training in rural health work. Several health districts scattered throughout the country are used as the training fields for the students. Out of a large number of applicants, twenty-four physicians were admitted to the course given for public health officers from January to September, and all finished the course and were graduated.

The establishment of a cooperative health center in the Ambelokipi district of Athens was the most important project initiated in Greece during 1935 by The Rockefeller Foundation. This



Photograph Excised Here

Children enjoying the sand boxes and pool in the garden of the Health Center, Istanbul, Turkey. The Foundation has contributed to the center's budget for the past year.

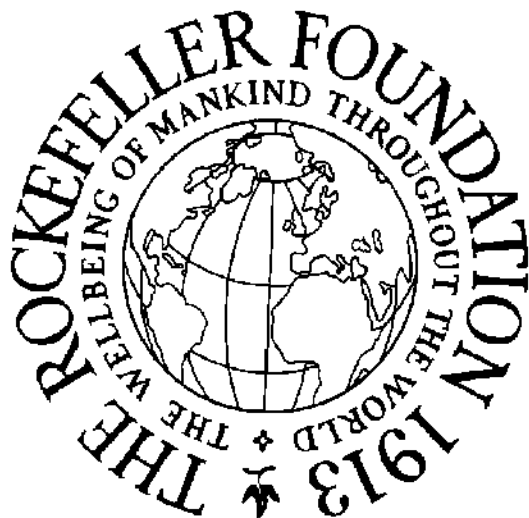


Photograph Excised Here

Ambelokipi Health Center, Athens, Greece, inaugurated in September 1935, under a cooperative agreement between the city of Athens, the School of Hygiene, and the Foundation.

center, called the Ambelokipi Model Health Organization, unifies the separate health services already extant in the district, where most of the larger hospitals and laboratories are located, and has added others. Its purpose is twofold: to furnish a model health service, and to provide a training ground for students of the School of Hygiene and health workers in general. It cooperates with government, hospital, and private agencies in furnishing service within the district in the prevention and care of communicable diseases, instruction in and supervision of sanitation, school hygiene, prenatal and preschool care, and dental hygiene. Its work is carried on in daily clinics and by the visits of its nursing staff to homes and schools. Funds for the maintenance of this center are provided jointly by the city of Athens, the School of Hygiene, and The Rockefeller Foundation.

In Ankara, Turkey, the Institute and School of Hygiene occupy a group of buildings toward the construction and equipment of which the Foundation has contributed. The school has four departments: epidemiology and statistics, sanitary engineering, parasitology, and social hygiene. A representative of The Rockefeller Foundation has been assigned to Ankara to cooperate in the development of this school, which is responsible for the training of health officers and



Photograph Excised Here

Class entering the School of Nursing of the American University of Beirut, October 1935. The Foundation has contributed to the development of this school through a long-term grant to the university for the improvement of teaching facilities.



Photograph Excised Here

Public health nurse conducting a hygiene class for mothers at the Health Center, Terracina, Italy. During 1935 nineteen such classes were held with a total attendance of 463 mothers. The nurses made more than 5,000 visits to mothers with infants in the homes in the region.

sanitary inspectors and which is making plans for further rapid development. The success of this institution will, in the long run, determine the degree of perfection in public health operations throughout Turkey. The first full year of unbroken activity at the health center in Istanbul, toward which the Foundation is contributing, came to a successful close in 1935. It is proposed to use some of the nurses who graduated in the spring in developing public health nursing at Ankara.

Public Health Fellowships

An important part of Foundation activities in the field of public health consists of the administration of an extensive fellowship program. Fellowships are granted for the purpose of meeting definite needs in public health service. They are given only to persons carefully selected for specific work and only with the understanding that the recipients, on the completion of their training, shall be appointed to pivotal positions in the health services of their own countries. Experience has shown that from the men who have benefited by these fellowships are recruited many of the leaders in public health work throughout the world.

During 1935 the Foundation directed the studies of 188 men and women to whom it had granted fellowships in public health. The follow-

ing table shows the fields of special interest into which the group was divided:

<i>Classification</i>	<i>Number</i>	<i>Per Cent</i>
Public health administration.....	111	59.1
Public health nursing.....	32	17.0
Sanitary engineering.....	12	6.4
Public health laboratory.....	7	3.7
Vital statistics.....	4	2.1
Industrial hygiene.....	1	0.5
Special.....	19	10.1
Incomplete.....	2	1.1
	188	100.0

The 188 fellows came from a wide geographical area embracing twenty-eight different countries. In the United States awards were given to persons from twenty-one states, every section of the country being represented. Of the 188 fellows, 165 studied in twelve universities and schools in the United States, ten studied abroad during the entire period of their fellowships, and thirteen were assigned to field studies or non-academic institutions.

In addition to providing the fellowships described above, the International Health Division arranged and supervised programs for thirty-five nurses, of whom seventeen were studying nursing procedures on fellowships, and eighteen had received travel grants enabling them to visit nursing projects in this country or Europe.

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¹ Retired September 1, 1935.

² Appointed September 1, 1935.

³ Until September 1, 1935.

Resigned July 21, 1935.

⁶ Appointed July 1, 1935.

⁷ Assigned to China Program.

⁸ Appointed September 21, 1935.

⁸ Appointed November 1, 1935.

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THE MEDICAL SCIENCES

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THE MEDICAL SCIENCES

During 1935 The Rockefeller Foundation appropriated \$2,733,050 for work in the field of medical science. Of this sum, \$1,459,450 was contributed to projects for the advancement of psychiatry. This emphasis on a specific branch of medicine reflects the Foundation's present policy of devoting the major part of the funds which it has available for distribution, to the furtherance of knowledge in selected fields. The term psychiatry as used here is an inclusive one, comprising clinical psychiatry; clinical neurology; the anatomy, physiology, chemistry, pharmacology, and pathology of the nervous system; some aspects of psychology; and those phases of other branches of medicine which bear directly on the understanding of human behavior.

As a subdivision of medicine, psychiatry and its allied fields need greater numbers of adequately trained workers and increased facilities for research and for the application of existing knowledge. To aid in meeting these needs the Foundation, in 1935, contributed funds to certain schools to enable them to offer opportunities for training and research in psychiatry of a character to attract students of the best type; it

provided fellowships for exceptionally qualified students in this field; gave support to specific research projects; and cooperated in programs for the utilization of modern psychiatric knowledge in the care of persons with incipient, acute, or chronic mental diseases or incapacity. In addition to this work in psychiatry the Foundation maintained an interest in the teaching of public health to medical students, discharged certain obligations in connection with its previous program in the medical sciences, and made a few grants for projects outside the limits of its fields of concentration. In the following pages the year's activities are discussed briefly.

Program in Psychiatry

Aid for the Development of Teaching Centers

In six institutions in the United States where circumstances are especially favorable for the development of teaching and research in psychiatry the Foundation is cooperating in programs to improve the presentation of this subject to medical students and to bring it into closer relation with other branches of medicine. At another institution, the School of Medicine of the University of Chicago, which heretofore has had no facilities for psychiatric teaching and investigations, assistance is being given in the establishment of a subdepartment of psychi-

atry. In 1935 a total of \$493,200 was appropriated for these purposes. The programs receiving support are described below.

**Institute for Psychoanalysis, Chicago
Development of Teaching and Research**

Training in psychoanalysis is of great importance to the psychiatrist, but at the present time facilities for such training are limited. To aid in extending opportunities in this field the Foundation made a grant of \$100,000 to the Institute for Psychoanalysis, Chicago, payable over a three-year period beginning October 1, 1935, to enable it to enlarge the scope of its teaching and research.

The Institute for Psychoanalysis was established in 1932 to operate on a non-profit-making basis for the following purposes: to study the application of psychoanalytic technique to voluntary patients; to conduct systematic comparative research on a series of similar cases; to organize the teaching of psychoanalysis according to accepted academic standards; to provide orientation in psychoanalysis to physicians practicing in other branches of medicine and to scientists working in borderline fields; and to further the correlation of medical and physiological problems with the findings of psychoanalysis. The Foundation's grant will assist the

institute during a developmental period, enabling it to lay explicit emphasis on teaching and research as contrasted with mere therapeutic work, and to hold a valuable group of teachers and investigators at teaching which is much in demand and at research which is critically important for the validation of a significant school of psychiatric activity.

**The Johns Hopkins University School of Medicine
Study and Teaching of Child Psychiatry**

In the study of mental diseases child psychiatry is one of the basic fields to be investigated. In recent years The Rockefeller Foundation has contributed toward research in this field at several institutions. The Annual Report for the year 1934 told of a grant to the Johns Hopkins University School of Medicine toward the support for one year of a program of study and teaching in child psychiatry to be carried on under the joint auspices of the Departments of Psychiatry and Pediatrics. In continuance of this aid an appropriation of \$55,200 was made to the school in 1935 toward the support of the undertaking for three additional years.

The work is being carried out in the Pediatric Clinic, where a thorough study is being made of the complaints, personality developments, and characters of children showing deviations from

ordinary behavior and attitudes. An important feature of the project is the opportunity it affords for teaching medical students, interns, and young pediatricians the methods of interpreting and dealing with the social, moral, intellectual, and emotional abnormalities of childhood.

Dr. Leo Kanner, a former Rockefeller Foundation fellow, who is in charge of the study, plans to continue observations on individual children over a period of five to ten years in the hope of gaining valuable information on the relation of early maladjustment difficulties to the development of mental disease in adult life.

**Institute of the Pennsylvania Hospital
Training and Research in Psychiatry**

Excellent opportunities for training in psychiatry are offered by the Institute of the Pennsylvania Hospital, Philadelphia, Pennsylvania. The institute is a division of the hospital engaged in the study and treatment of the milder mental abnormalities and adjustment problems. In addition, it carries on research in the hospital's Department of Mental Diseases and in a small school which the hospital maintains for children of good intelligence who present behavior problems. Members of its staff act as consultants in psychiatry for the schools and colleges in and near Philadelphia. Its studies

o

thus cover a wide range of mental conditions, and it is able to offer the student a varied experience in psychiatric work.

In 1934 the Foundation made a grant to the institute to assist it over a one-year period in maintaining additional teaching and research personnel. In 1935 another appropriation, amounting to \$36,000, was made by the Foundation to provide similar assistance for an additional two-year period.

**Harvard Medical School and Massachusetts General Hospital
Joint Program in Psychiatric Training**

The Harvard Medical School and the Massachusetts General Hospital are cooperating in a program to enlarge the scope of teaching and research in psychiatry and to relate this work more closely to instruction in other fields of medicine. These institutions are well equipped for this joint undertaking. The hospital has established a small psychiatric division, where the study and treatment of mental conditions are coordinated with the general medical activities of the hospital. This division is staffed by the Harvard Medical School and is under the direction of Dr. Stanley Cobb, professor of neuropathology. In the curriculum of the medical school and throughout the various hospital services emphasis is given to mental phenomena.

The Departments of Anatomy and Physiology of the medical school offer exceptional facilities for the study of problems related to the organization and function of the nervous system.

The Rockefeller Foundation appropriated \$78,000 toward the support of this project during the year beginning September 1, 1935. This grant was a continuation of aid given during the previous year.

**Medical School of the University of Michigan
Extending the Scope of Psychiatric Training**

At the Medical School of the University of Michigan changes and expansion in the Department of Psychiatry were carried out under the direction of Dr. A. M. Barrett¹ to bring psychiatric teaching and research into more effective relation with the various divisions of the teaching hospital of the university and with other excellent clinical facilities. These latter include the large outpatient clinic of the hospital, which has about two thousand new patients a year; a 1,000-bed state hospital for the insane situated nearby; and eight other state institutions for the insane and the mentally defective, which offer interesting and varied cases for study.

¹ Dr. Barrett died April 2, 1936.

To assist the Medical School in this program for the improvement of teaching and research in psychiatry the Foundation contributed toward laboratory expenses and the salary of additional personnel during the academic year 1934-35. In 1935 it made an appropriation of \$36,000 to continue this support for a period of two years.

**School of Medicine of the University of Colorado
Teaching Psychiatry in Medical, Surgical, and
Obstetrical Clinics**

The outstanding center of psychiatric training and research in the Western United States is the Colorado Psychiatric Hospital. The School of Medicine of the University of Colorado is affiliated with this hospital and thus its students profit from the excellent facilities for the study of mental diseases. As a result the course in psychiatry offered at the school is one of unusual excellence. In 1934 the school undertook to introduce psychiatric teaching into its medical, surgical, and obstetrical clinics for the purpose of demonstrating the application of psychiatric knowledge to the study of physical maladies. The Rockefeller Foundation agreed to assist in this project for a period of one year by providing the salary of a psychiatrist to act as consultant and teacher in the various clinics, and the salaries of a social worker and a secretary. In 1935 it

made an appropriation of \$20,000 to continue this aid for the two-year period ending July 31, 1937.

**School of Medicine of the University of Chicago
Establishment and Maintenance of a Subdepartment
of Psychiatry**

The School of Medicine of the University of Chicago has been one of the few important medical schools of the United States without a department of psychiatry. Plans to remedy this defect have been under consideration at the university for some time. The possibility of aid for research work from the Sprague Fund has made the project especially attractive. The proposed plans are now being put into effect with the aid of a Rockefeller Foundation grant of \$168,000. This sum will cover the cost of the building alterations and the equipment necessary to the establishment of a subdepartment of psychiatry in the School of Medicine and will provide for its maintenance and for the salaries of personnel over the three-year period ending June 30, 1938. The new subdepartment, which will at first be a small unit, will be intimately affiliated with other clinical, laboratory, and teaching activities of the university. Especially close connection will be maintained with the Department of Medicine.

Psychiatric Research

Of the total sum of \$1,459,450 appropriated by the Foundation in 1935 for the development of psychiatry, \$903,950 was provided for the advancement of research in this field. Of special significance in stabilizing and consolidating research and teaching in any discipline are grants for endowment. Where space for scientific work is seriously defective and insufficient, important service is rendered by contribution toward a laboratory building. Only in exceptional cases does the Foundation provide assistance of this type. In 1935 such aid was given to the National Hospital, Queen Square, for the Relief and Cure of Diseases of the Nervous System Including Paralysis and Epilepsy, London.

Other assistance provided during the year for the furtherance of psychiatric studies included grants toward the support of fourteen research undertakings in clinical psychiatry and related fields. These grants range in duration from one year to five years and in amount from \$5,000 to \$90,000. Their purpose in every case is to make possible or facilitate clearly defined investigations by a group of scientists. Forty-three grants in aid of psychiatric studies of relatively less scope than those just mentioned were also made during the year.

National Hospital, Queen Square, London
Aid for Building and for Endowment of Research

The National Hospital, Queen Square, for the Relief and Cure of Diseases of the Nervous System Including Paralysis and Epilepsy, London, received a grant of \$600,000, of which half is to be used toward the cost of erecting and equipping a new building and half for the endowment of research. The hospital authorities own the land for the building and will pay part of the construction and equipment costs and the increased operating costs.

The National Hospital, founded in 1859, has a long history of achievement in the training of neurologists and the promotion of research on nervous and mental diseases. Its influence on neurology in the English-speaking world has been outstanding. During the past thirty years it has attracted numerous graduate students from other countries. In the ten-year period 1924-33, 174 physicians came for practical clinical and laboratory work; seventy-seven of these were from the United States, fifty-four from the British Isles, twenty-two from Australia and New Zealand, and seventeen from Canada. A considerably larger number of physicians, chiefly British, attended the regular lecture and demonstration courses given during this

period. These courses are of two months' duration and are held twice a year. They include lectures on the principles and practice of neurology and demonstrations on the anatomy, pathology, and physiology of the nervous system.

The primary object of the staff at Queen Square is to provide increased facilities for teaching and research. The existing hospital building is barely large enough to house the 200 bed patients and the outpatient service, which has an annual attendance of more than fifty thousand. There is little space available for laboratories, library, and lecture rooms. The new building and the research endowment will not only furnish increased accommodations for patients but will emphasize the value of research and teaching.

Maudsley Hospital, London

Development of Research in Psychiatry

A grant of \$45,000 was made to the London County Council toward the support of research in psychiatry over the three-year period beginning July 1, 1935, at Maudsley Hospital, the central institution of the London County Council Asylums.

Maudsley Hospital has 200 beds and an outpatient clinic in which about two thousand new cases are received annually. The hospitalized

patients are selected: only those with recent and curable cases of neurosis or the milder forms of psychosis are admitted. Custodial patients are referred to other hospitals of the London County Council, but all patients in these institutions are available to Maudsley Hospital for study.

Investigations which are under way or contemplated at the hospital include studies of the possible rôle of tuberculosis and other infections in the etiology of dementia praecox, the significance of disturbances in the sex function in neuroses of women, and analyses of psychoses of pregnancy and psychotic disturbances associated with certain physical diseases. The primary object of the Foundation's grant is not, however, the support of these particular studies, but rather the promotion of psychiatric research in the principal center for such investigations in London. The most pressing need of this institution is trained investigators, and the grant will be used chiefly toward the salaries of research personnel. A by-product of the aid will be improved teaching of psychiatry, for the hospital offers facilities for undergraduate instruction to several of the London medical schools, and advanced courses are held there for physicians who are preparing for posts in the country's numerous mental hospitals.

Galton Laboratory, University of London**Studies in Human Genetics in Relation to Mental Disease**

An appropriation of \$35,000 was made to the Medical Research Council, Great Britain, for the support of studies in human genetics in relation to mental disease, to be carried out at the Galton Laboratory of the University of London during the five-year period from July 1, 1935, to June 30, 1940, under the direction of Dr. R. A. Fisher. From the funds thus provided the salaries of research workers and a laboratory attendant will be paid and equipment and supplies will be purchased. The Medical Research Council will act as disbursing agent and will coordinate the studies with other investigations in this field which it is sponsoring. The Galton Laboratory will furnish working space and the services of Dr. Fisher as director of the studies. The laboratory has an unusual amount of material on human heredity.

Dr. Fisher's project is essentially a study of human inheritance along the line of serological research upon persons mentally defective or diseased. Serological studies of Hirschfeld, Landsteiner, Schiff, Todd, and others have shown that the blood of human beings contains determinable substances which are transmitted by heredity in definite and recognizable ways. There is evidence for assuming that these substances are

so closely linked with the genes responsible for mental defect that a study of the manner in which they are transmitted by heredity may throw light on the way mental defects are transmitted. Mental defects are variable and elusive in their manifestations; those factors in the blood which are probably closely linked to mental defects promise a more direct genetic interpretation than is possible from symptoms and many types of measurements.

**Columbia University
College of Physicians and Surgeons
Psychiatric Research in the Department of the
Practice of Medicine**

A grant of \$5,000 a year for a period of three years beginning June 1, 1935, was made to Columbia University for the salary of a psychiatrist to give full time to research in the Department of the Practice of Medicine of the College of Physicians and Surgeons.

For more than ten years the Presbyterian Hospital, which is the teaching hospital of the university, has had on its medical and surgical staffs psychiatric consultants serving on a part-time basis. Studies by these men of the relation of the mental symptoms of patients to their physical ailments have resulted in better understanding and more intelligent treatment of the patients. For the past four or five years the psy-

chiatrists have been holding conferences with the clinical clerks on the cases assigned to these students for study. This procedure has brought about a noticeable change in the attitude of the students toward the total problem of the patient.

In order that greater progress might be made toward an understanding of psycho-somatic relationships, the university authorities wished to secure the services of a man well trained in medicine and psychiatry, who would give his full time to investigations in this field. The Foundation's grant was made to assist the university in establishing this post.

University of Amsterdam, Netherlands
Research on Dementia Praecox

The Foundation made an appropriation of \$9,050 to the University of Amsterdam toward the support of research on dementia praecox in the Neurological Clinic, under the direction of Dr. Herman de Jong, during the three-year period beginning April 1, 1935. This grant will provide the salaries of a biochemist and assistants, and certain equipment and supplies.

The University of Amsterdam and the neighboring University of Utrecht constitute one of the world's strongest centers of neuropsychiatric teaching and research. At both institutions clini-

cal and laboratory departments are well staffed and there is effective cooperation among the various units.

Several years ago Dr. de Jong, in collaboration with Professor Baruk in Paris, began a study of catatonia, one of the frequent signs in dementia praecox. Dr. de Jong has been able to produce the phenomenon in cats and to study its etiology in these animals as well as in man. The work which he has outlined for the next few years includes a continuation of these studies and an investigation of the rôle of disturbed liver function in the development of mental disease.

Worcester State Hospital, Massachusetts
Research on Dementia Praecox

The Foundation is also contributing toward research on dementia praecox at the Worcester State Hospital in Massachusetts. In continuance of a one-year grant made to the hospital in 1934 to enable it to extend its studies of this disease, the Foundation appropriated \$33,000 in 1935 toward the support of these investigations, for an additional two-year period.

The studies at the Worcester hospital are under the direction of Dr. R. G. Hoskins. They include research on the circulatory disturbances and metabolism of dementia praecox patients and investigations of the relation of the supra-

renal cortex to the symptoms and progress of the disease. To control the results accurately, comparisons are made with normal persons living at the institution under the same conditions as the patients. The Foundation's grant covers salaries of research personnel, equipment needs, and expenses of hospitalizing normal persons as controls.

Cornell University Medical College
Studies of Reflex Behavior in Relation to Neuroses

At Cornell University studies of reflex behavior in relation to neuroses are being conducted under the direction of Professor H. S. Liddell. The method employed in these investigations is the study of conditioned reflexes in animals, a technique for the investigation of reflex behavior introduced by Ivan Pavlov and offering many possibilities for further exploration, modification, and application.

The interest of Professor Liddell and his associates centers chiefly on the study of neurotic behavior in animals, as produced by modifying their conditioned reflexes, and the effect on such behavior of removal of the thyroid gland or administration of thyroid extract, cortin, or other internal secretions. This type of research has direct bearing on knowledge of the integrative action of the nervous system in neuroses

and states of inhibition; and as a method it is important to a better understanding of the action that certain drugs and internal secretions have upon the nervous system. In the production in animals of the analogue of neuroses, a means of further understanding character or behavior disturbances in man is offered.

The Foundation appropriated \$10,400 toward the support of this work during the year beginning August 1, 1935. The funds have been used for the salaries of a research worker and laboratory assistants, the purchase of equipment and experimental animals, and the maintenance of animals.

University of Chicago
Study of the Physiology of Sleep

For several years Dr. Nathaniel Kleitman, of the Department of Physiology of the University of Chicago, has been making a study of the physiology of sleep. To enable Dr. Kleitman to enlarge the scope of his work, The Rockefeller Foundation made a grant of \$6,300 to the university to cover the cost of a special investigation during the year beginning April 1, 1935. This project is in the nature of a test of a working hypothesis of the mechanism of sleep, its onset, duration, periodicity, phylogenetic development, and adjustment to the twenty-four hour cycle

of day and night. The funds provided by the Foundation will be used for salaries of research assistants, the purchase of equipment, and compensation for the subjects of study.

This study comes within the scope of the Foundation's program in psychiatry. Catatonic states, postencephalitic sleepiness, catalepsy, insomnia, and narcolepsy are closely related to the functions of the nervous system normally involved in sleep.

**Northwestern University Medical School
Research in Neuroanatomy**

The Foundation's program in psychiatry includes aid for research in neuroanatomy and neurophysiology, since investigation in these fields is basic to study of the diseased mind.

In support of research in neuroanatomy at the Northwestern University Medical School, under the direction of Dr. S. W. Ranson, an appropriation of \$8,000 was made for use over the two-year period beginning July 1, 1935. A previous one-year grant of \$4,000 had been made for this work in 1934.

Dr. Ranson's studies are concerned with cerebral localization, that is, the correlation of the anatomy of the brain with its physiology. Progress in such studies depends in large measure on refinements in technique. Dr. Ranson has elab-

orated precise methods for stimulating or destroying small areas of the brain. The effect of such excitatory or destructive stimulation on the functions of the organs of an animal and on its emotions are carefully observed. Dr. Ranson and his associates are interested particularly in determining the centers which control the activities of the endocrine organs.

**New York University College of Medicine
Research in Experimental Neurology**

An appropriation of \$5,000 was made to New York University toward the support of investigations in the laboratory of experimental neurology of the College of Medicine, during the year beginning May 1, 1935, under the direction of Dr. Foster Kennedy. A similar grant was made to the university in 1934 for this work. The Foundation's aid has provided certain necessary laboratory equipment and assistance and has enabled the university to retain the services of Dr. Franz Schück, a neurosurgeon, formerly of the Urban Hospital, Berlin, whose studies are an important contribution to the work of the laboratory.

Dr. Schück is investigating the functions of various parts of the brain, particularly the thalamus. He is interested in determining the significance of certain foci and nerve tracts in

sensation, with a view to working out better methods for the surgical relief of pain, a field of study which offers considerable promise.

Other investigations are being carried out in the laboratory by Dr. S. Bernard Wortis and his associates. These are concerned with the respiratory metabolism of brain and neurological tissue, with virus diseases of the central nervous system, and with migraine.

Dartmouth College Medical School
Research in Physiological Optics

Studies in physiological optics conducted at the Dartmouth College Medical School, by Professor Adelbert Ames and his associates during the past five years have shown the existence of a common visual defect not previously recognized, namely, aniseikonia, a difference in the size of the two retinal images. It has been found that a considerable percentage of patients with refractive errors present evidence of this condition, and it is probable that a large number of persons in the United States would profit from the application of the new knowledge. The application of this discovery may well refine the diagnoses of neurologists and psychiatrists, since the nervous disturbance due to aniseikonia may be so great as to be mistaken for the symptoms of brain tumor or psychic neurosis.

During the year 1934-35 The Rockefeller Foundation contributed funds to enable Dartmouth College to provide Professor Ames with the additional equipment and assistance necessary for perfecting instruments for diagnosing aniseikonia. Satisfactory progress was made in this work as well as in detailed calculations for grinding formulae for glasses; and the project reached the stage where the services of ophthalmologists of special training were required for the clinical work which would prepare the physiological and physical findings of Dr. Ames for widespread application. The Foundation made a second grant, amounting to \$90,000, to be used over a three-year period beginning September 1, 1935, for the salaries of the ophthalmologists and for the equipment required for this further research. It is expected that this support will enable the investigators to bring their work to a point which will insure its accurate and sound application.

University of Pennsylvania School of Medicine

Research on Growth of Living Tissues

A grant of \$12,500 was made to the University of Pennsylvania for the continuation, during the two-year period beginning July 1, 1935, of research by Dr. Eliot R. Clark on the growth of living tissues. This appropriation will terminate

the Foundation's support of Dr. Clark's studies. Two previous appropriations were made for these investigations: one of \$75,000, available over the five-year period beginning July 1, 1929, and one of \$7,500 made in 1934 for aid during an additional year.

The studies center around a method developed by Dr. Clark and his associates for the direct study of living tissues. A double window in the ear of a rabbit, or other suitable mammal, providing a shallow serum-containing chamber, permits the microscopic examination of growing tissues, including nerves and blood vessels, and observations on the reaction of such tissues to various stimuli. Recently the method has been used especially for investigating the growth and certain developmental changes of nerves. The technique is applicable, however, to a great variety of problems in the normal and pathological physiology of nerves and blood vessels, and of connective tissues in general. The changes which take place may be recorded by the cinematograph.

**Harvard Infantile Paralysis Commission
Field Studies in North Carolina**

The Foundation appropriated \$5,000 to the Harvard Infantile Paralysis Commission for a field study, during the summer of 1935, of the

epidemiology, causation, and therapy of poliomyelitis, one of the principal epidemic diseases attacking the nervous system. The study, directed by Dr. W. Lloyd Aycock, was carried out in North Carolina, where there had been a recent increase in the disease. Its purpose was to investigate the effect of population immunity on a given outbreak of poliomyelitis and, in turn, the effect of the outbreak on population immunity. Immunity tests were conducted in such a way that results will be comparable with existing data on immunity in northern populations.

The Foundation's grant was used for the traveling expenses of research personnel and for supplies.

**The Chicago Area Project
Field Study of Abnormal Behavior**

The Chicago Area Project is an experiment in the prevention of juvenile delinquency in four small districts of Chicago where such delinquency has been prevalent. A basic feature of the project is the study by psychiatrists and sociologists of examples of abnormal behavior among the young people of the districts. This phase of the work comes within the Foundation's field of special interest in the medical sciences. A grant of \$22,500 was made by the Foundation toward the general budget of the project for the

year beginning October 1, 1935. Of this sum, \$7,500 is to be paid unconditionally and the balance on a basis of one dollar for every dollar over \$20,000 secured from other sources. This appropriation is the Foundation's second grant of the same amount toward the support of the project.

Psychiatrists and district workers connected with the project maintain an intimate and friendly relationship with the young people of the area, a method of approach which is producing interesting results. The psychiatrist is afforded exceptional opportunity for studying delinquency in close and familiar association with a social group in which it occurs.

**Institute of the Educational Sciences
Geneva, Switzerland
Research in Child Psychology**

One of the chief functions of the Institute of the Educational Sciences, the former Jean Jacques Rousseau Institute, is research in child psychology, including the study of the normal and the diseased mind. Certain aspects of its investigative work are therefore within the scope of the Foundation's program in psychiatry.

For ten years the institute has received aid from Rockefeller boards toward the support of its general program, which, in addition to re-

search in child psychology, includes the training of teachers, with special emphasis on child psychology; the operation of a bureau for vocational guidance; and the maintenance of a center of educational information and propaganda. From 1925 to 1931 the institute was assisted by the Laura Spelman Rockefeller Memorial. In 1931 The Rockefeller Foundation took over the project as one of its unclassified activities, and pledged aid on a tapering basis through the fiscal year 1936-37. In 1934 the Foundation made a supplementary grant of \$5,000 to the institute to compensate it for loss in exchange and to aid it in meeting the deficit caused by decrease in local contributions. In 1935 a grant of similar nature, amounting to \$7,200, was made for the fiscal year 1935-36. These Foundation grants toward the general budget of the institute represent aid over a transitional period during which plans are being developed for cooperation in a research program coming within the Foundation's field of concentration in the medical sciences.

Application of Modern Psychiatric Knowledge

The Foundation made appropriations during 1935 to three organizations in the United States engaged in promoting the practical application of modern psychiatric knowledge.

The National Committee for Mental Hygiene was granted \$20,000 toward the support of its general activities during 1936. The committee has as its aim the education of the public in methods of conserving mental health, the improvement of professional training in mental hygiene, the encouragement of research in this field, and the betterment of diagnostic and therapeutic services in mental hospitals.

The Commission for the Study of the Care of the Insane and Mentally Defective, appointed by the State of North Carolina, received \$16,300 toward its expenses during the period from September 1, 1935, to December 31, 1936. The program of the commission includes a survey of existing provisions in North Carolina for the care and treatment of mental patients, a detailed study of the needs for psychiatric service throughout the state, and an investigation of all means and methods, both proposed and in use, for the care and treatment of the insane and the mentally defective.

To the Department of Mental Diseases of the State of Massachusetts the sum of \$26,000 was pledged, to be available, as needed, during the five-year period beginning January 1, 1935, for the publication of statistical data on mental disease in the state. This grant will enable the department to put into permanent form the results

of its recently completed study of statistics on insane, epileptic, and mentally defective persons admitted to certain hospitals of Massachusetts between the years 1917 and 1933, and of the case records of these patients. The study was carried out during the years 1928 to 1934 with the support first of the Laura Spelman Rockefeller Memorial and later of The Rockefeller Foundation. At least four volumes of data are to be published. The first volume will present a broad general picture of mental disease in Massachusetts, based on analysis of more than 100,000 cases. The second will contain an intensive study of the clinical manifestations of mental disease in 20,000 patients. The third will be a general survey of mental deficiency and epilepsy, compiled from the case records of 10,000 mental defectives and 5,000 epileptics. The fourth will deal with the clinical manifestations associated with mental deficiency in 3,200 persons admitted to Wrentham State School.

Fellowships and Grants in Aid

The Foundation appropriated \$90,000 in 1935 for fellowships in the medical sciences under its own administration. A grant of \$45,000 was made to the National Research Council for its medical science fellowships during 1936-37, and the Medical Research Council, London, received

an appropriation of \$4,000 for the same use during 1935 and 1936.

During 1935 seventy-two fellowships in the medical sciences were supported and administered directly by the Foundation. Their distribution according to the fellow's country of origin was as follows: eight from the United States; six from England; five from Japan; four each from France, the Netherlands, Sweden, and Switzerland; three each from Greece, Hungary, India, and Portugal; two each from Argentina, Canada, China, Denmark, Germany, the Republic of Lebanon, and Poland; and one each from Australia, Austria, Brazil, Czechoslovakia, Estonia, Northern Ireland, Italy, Puerto Rico, Rumania, Siam, and the Union of South Africa.

Under the joint program of The Rockefeller Foundation and the General Education Board, twenty-five American physicians received post-doctoral fellowships from the General Education Board for the study of mental and nervous disease and public health teaching. Eight of the holders of these fellowships studied psychiatry; four each neuropathology and neurophysiology; three neurology; two each advanced psychiatry and neuroanatomy; and one each clinical psychiatry, public health administration, neurosurgery, psychoanalysis, endocrinology, educational psychology, and biochemistry. Five of

them worked in more than one field, and all concentrated on some special aspect of their chosen fields. Their studies were carried on in the United States, England, Switzerland, Austria, Germany, Canada, and the Netherlands.

Agencies toward whose fellowship programs in the medical sciences the Foundation contributed administered a total of 150 fellowships financed by Foundation funds. The National Research Council supervised nineteen such fellowships held by Americans. The Medical Research Council, London, administered thirteen fellowships for advanced study in the United States. The Notgemeinschaft der Deutschen Wissenschaft and the Hungarian Scholarship Council each administered one fellowship. The Peiping Union Medical College, with funds provided by the Foundation, administered fourteen fellowships granted to Chinese students for study abroad, and eleven granted to students for study at the college. Ninety-one students studied at the college for short periods of time on small grants.

The sum of \$125,000 was appropriated by The Rockefeller Foundation in 1935 for grants in aid in the medical sciences.

Forty-three grants in aid of research projects in psychiatry and related fields were made in 1935. These ranged in amount from \$490 to \$6,500, and totaled \$105,838.35. They were

distributed among twelve countries: two in Austria, one in Denmark, one in Finland, four in France, seven in Germany, six in Great Britain, two in the Republic of Lebanon, one in the Netherlands, one in Poland, two in Portugal, four in Switzerland, and twelve in the United States. Grants in Austria included \$6,000 for research in human psychology, directed toward further understanding of normal and abnormal personality, to be carried out at the University of Vienna by Professors Karl and Charlotte Bühler; and \$1,500 for studies of the neuropathology of the central nervous system, to be made at the same university, under the direction of Professor Otto Marburg. In Denmark \$839.78 was provided for research in neurophysiology at the University of Copenhagen. In Finland \$745.25 was made available for investigations by Dr. A. Vartiainen, at the University of Helsingfors, on the action of various substances on the vegetative nervous system. In France \$1,990.71 was granted toward the studies of Professor Henri Baruk at the Charonton National Hospital for the Insane, near Paris, on mental diseases, particularly experimental catatonia; \$5,200 for research on the electrophysiology of the nervous system, under the direction of Professor L. Lapique and Dr. L. M. Monnier at the University of Paris; \$1,976.29 for research on phenomena of hypo-

and hypersensibility of the central nervous system in relation to the problems of anesthesia and habit-forming drugs, under Professor Marc Tiffeneau, also at the University of Paris; and \$1,327.14 for studies of the physiology of the nervous system, under Professor A. Hermann, at the University of Lyon. In Germany \$6,100 was given to the Heckscher Institute, in Munich, for research on aphasia and other psychopathological conditions, under the direction of Professor Max Isserlin; \$2,000 for research on heredity in mental disease, under the direction of Professor Johannes Lange, at the University of Breslau; \$2,100 for investigations on psychophysical constitution, by Professors Bunke, Stepp, and Schittenhelm, in the Psychiatric Clinic of the University of Munich; and \$1,500 for research in brain anatomy in this clinic by Dr. Hugo Spatz; \$2,550 for research on the circulation in relation to the nervous system, the endocrine glands, and sympathetic innervation, by Professor Hermann Rein, at the University of Göttingen; \$1,670 for studies of the pathology of the nervous system, under the direction of Professor Ludwig Aschoff, at the University of Freiburg im Breisgau; \$500 for research on human muscle tone in relation to the central nervous system, by Dr. Georg Schaltenbrand, at the Neurological Clinic of the University of

Hamburg. Grants in Great Britain included \$3,000 to the Medical Research Council, toward the study of hereditary factors in mental disorders, by Dr. T. A. Munro, at the University of Edinburgh; \$2,477.50 to Guy's Hospital, London, for research, under the direction of Dr. R. D. Gillespie, on asthma and certain cardiac disorders in relation to neuroses; \$3,000 for studies under the direction of Sir Henry Dale at the National Institute for Medical Research, Hampstead, England, on conduction currents in nerves and on other problems related to the central nervous system and the neuromuscular apparatus, particularly from the biochemical angle; \$3,000 for research on the physiology of the nervous system, by Sir Charles Sherrington and Dr. J. C. Eccles, at the University of Oxford; \$2,477.50 for morphological and experimental work on the brain and research on the connections of the central nervous system, by Professor W. E. LeGros Clark and Dr. Solly Zuckerman, at the same university; \$2,165.94 for the study of nervous reactions in mammalian embryos which Professors Barcroft and Adrian are carrying on at the University of Cambridge by electrical methods. Two grants were made to the American University of Beirut, Republic of Lebanon—one of \$1,500 for the support of studies of brain metabolism by Professor S. E. Kerr, and one of

\$1,000 for research, under the direction of Professor Otto Kraye, on the pharmacology of the nervous system, particularly in relation to the effect of eserine, thyroxine, and similar chemicals on the parasympathetic nerves. In the Netherlands a grant of \$1,662.43 was made to the University of Utrecht for research by Professor J. Boeke and Dr. van der Sprenkel on the structure of colloids in blood and in nerve tissue culture media and cells. In Poland \$1,750 was provided for the promotion of research in neurophysiology at the Neurobiological Institute in Warsaw by Dr. Georges Chorobski. Two grants were made to the University of Lisbon, Portugal—one of \$1,500 for histological studies of the sympathetic nervous system by Professor A. P. Celestino da Costa, and one of \$490 to enable a member of the neurosurgical service to visit London Hospital for a period of three months to study neurosurgical technique under Dr. Hugh Cairns. In Switzerland two grants were made to the University of Bern and two to the University of Zurich. At the former, \$2,481.63 was provided for the general development of research on brain diseases in the Psychiatric Clinic under the direction of Professor J. Klaesi, and \$988.47 for research in this clinic on metabolism in certain types of mental disease; at the University of Zurich \$1,955.53 was contributed toward re-

search on brain anatomy and on normal and pathological reflexes, under the direction of Professor M. Minkowski,⁵ and \$1,940.18 for investigations in brain physiology, at the Psychiatric Clinic, under the direction of Professor Hans W. Maier. In the United States the following aid was given: three grants to Yale University—\$6,000 for research in neurophysiology and the training of advanced workers in this field under the direction of Professor J. F. Fulton, \$4,000 for research in neuroanatomy under Professor H. S. Burr, and \$1,000 for research in neuropathology under Professor H. M. Zimmerman; two grants to Harvard University—\$5,000 for research in the psychological clinic on normal and abnormal psychology under Dr. H. A. Murray, Jr., and \$1,100 toward a study of constitutional and social factors associated with traits of personality, which is being carried on in the Psycho-Educational Clinic and the Department of Psychology under the direction of Professors W. F. Dearborn and G. W. Allport; \$3,000 to Dr. W. H. Park, of the Bureau of Laboratories of the New York City Health Department, for research on immunity to poliomyelitis; \$5,500 to the Long Island College of Medicine, for the studies of the Infantile Paralysis Commission; \$6,500 to the Central Institute for the Deaf, St. Louis, for studies on the anatomy and physiology

of the brain, by Dr. Lorente de Nó; \$3,000 to the University of Alabama, for investigations on the functions of the brain stem and basal ganglia; \$2,000 to the University of Michigan, for studies by Professor M. M. Peet on brain tumors and sympathetic pathways; \$850 to the University of Pennsylvania, for research in neurophysiology under Dr. F. H. Lewy; \$500 for studies at the Thorndike Memorial Laboratory, Boston, under the direction of Dr. G. R. Minot, on the relation of vitamin B to dietary principles in normal man and in patients suffering from certain diseases involving disturbances of the nervous system.

Eighteen small grants, none exceeding \$3,000, were made during 1935 to aid in the completion of certain research projects not directly related to the present program. These were distributed among thirteen countries as follows: two each in Czechoslovakia, Great Britain, France, the Netherlands, and Sweden, and one each in Argentina, Denmark, Finland, Germany, Hungary, the Republic of Lebanon, Palestine, and Switzerland.

Teaching of Public Health in Medical Schools

In connection with its secondary program in the medical sciences, which is concerned with the teaching of public health, preventive medicine, and hygiene to medical students, the Foun-

dation appropriated \$29,000 during 1935. Of this amount, \$4,000 was for the financing of visits to be made by teachers of preventive medicine and deans of medical schools, for the purpose of conferring on teaching methods and problems in this field. The remaining \$25,000 was for a comparative study of the teaching of public health, preventive medicine, and hygiene in North American and Western European medical schools. This study will be carried out during the year beginning September 15, 1936, under the direction of Dr. J. G. FitzGerald, dean of the Faculty of Medicine and professor of hygiene and preventive medicine at the University of Toronto.

Up to the present time there has been no very extensive study of the methods employed in public health teaching. It is important to know the general status of instruction in this subject. The physician's responsibilities in public health, preventive medicine, and hygiene are steadily increasing, and it is essential that the medical student have proper preparation to meet the demands that will be made upon him along these lines. Furthermore, recruitment of medical graduates to the advanced schools of hygiene and public health, and thence to the public health services, depends upon the adequate presentation of public health in the medical schools.

Miscellaneous Grants

**The Johns Hopkins University
Institute of the History of Medicine**

An appropriation of \$37,500 was made to the Johns Hopkins University toward the support of its Institute of the History of Medicine during the period July 1, 1935, to June 30, 1938. The work of the institute is outside the Foundation's present fields of concentration, but it is of such exceptional importance in the light of the changes which are taking place in the status of medical practice, teaching, and research that this three-year grant toward its further development was deemed advisable.

The institute had its origin in a chair of the history of medicine established at the university in 1926, with an endowment of \$200,000 provided by the General Education Board. In 1930 the present institute was created, and the General Education Board furnished \$250,000 for its endowment and pledged \$12,500 a year for five years toward its maintenance.

Professor Sigerist, who now holds the chair in the history of medicine, is especially interested in the social rôle of the physician and in the utilization of past experience in organizing and controlling the practice of medicine. He has made the only known collection of records embracing the laws, regulations, and experience in the

United States, England, Russia, France, Germany, and Italy pertaining to social medicine, public health, and the control of licensed and unlicensed healers, and he is devoting a large part of his time to the study of this material.

Dr. Sigerist is conducting a course for first-year students, and seminars for second- and third-year students, on the ethical and social implications of the practice of medicine. The students have shown a deep interest in these aspects of medical practice, and there is great promise of a realization of the hope of the founders of the institute that it would counteract the tendency of medical schools to place too great emphasis on the purely scientific training of students or upon research accomplishment and to neglect the non-technical and humanistic side of medicine.

Cornell University

Conference of Workers in the Biological Sciences

The sum of \$1,000 was granted to Cornell University toward the expenses of a conference of workers in the biological sciences, held under the auspices of the university in June 1935. The subjects which were represented, namely, psychology, neuropsychology, physical anthropology, physiology, endocrinology, embryology, and biochemistry, are within the Foundation's spheres of interest in the medical and the natural sciences.

The conference was called at the suggestion of some of the younger workers in the fields mentioned, for the discussion of research projects which were in progress or definitely planned for the future and problems which concern more than one field. It gave opportunity for the exchange of information and points of view upon lines of work that should be brought into closer unity. It was attended by men from Cornell, Harvard, Yale, Columbia, Johns Hopkins, Northwestern, and Washington universities, the University of Chicago, and the Rockefeller Institute for Medical Research.

Special Research Aid Fund for European Scholars

The Foundation appropriated during 1935 a total of \$185,000 in continuation of emergency aid for eminent scholars of Europe who, for political reasons, have had to interrupt their scientific work and seek to establish themselves elsewhere. The amount allocated during 1935 to European scholars coming under this classification and working in the field of the medical sciences was \$16,100.

Former Program

The Foundation made a number of grants during 1935 in continuation of projects under-

taken in connection with its former program in the medical sciences.

The sum of \$454,000 was appropriated to the China Medical Board, Inc., toward the maintenance of the Peiping Union Medical College during the year July 1, 1935, to June 30, 1936.

Two appropriations were made to the University of Brussels, one of \$200,000 for endowment for the maintenance of St. Pierre Hospital as a teaching hospital for the Medical School of the university, and another of \$262,000 for endowment and purchase of equipment for the university School of Nursing. These funds were made available in fulfilment of Foundation pledges to the university in 1921 and 1928 guaranteeing the payment of such sums when buildings which the university was planning to erect to house these institutions had been completed. During 1935 notification was received from the university that the buildings were ready for occupancy.

An appropriation of \$10,000 was made to the Department of Public Health and Medical Education of Russia for the purchase of foreign medical publications for the central medical library in Moscow and a few important research institutes in the major scientific centers of the country. This grant represents a continuation of postwar aid, which will be terminated in 1937.

Summary of Appropriations Made in 1935

PROGRAM OF SPECIFIC CONCENTRATION

Psychiatry

Development of Teaching Centers

Harvard Medical School and Massachusetts General Hospital, Boston. Joint program in psychiatric training	\$78,000
Institute for Psychoanalysis, Chicago, Illinois	100,000
Institute of the Pennsylvania Hospital, Philadelphia. Training in psychiatry . .	36,000
Johns Hopkins University, Baltimore, Maryland. School of Medicine. Teaching of child psychiatry	55,200
University of Chicago, Illinois. School of Medicine. Establishment and maintenance of a subdepartment of psychiatry	168,000
University of Colorado. School of Medicine, Denver. Teaching psychiatry in medical, surgical, and obstetrical clinics	20,000
University of Michigan, Ann Arbor. Medical School. Teaching and research in psychiatry	36,000
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	\$493,200

Development of Psychiatric Research

Chicago Area Project, Illinois. Field study of abnormal behavior	\$22,500
Columbia University, New York City. College of Physicians and Surgeons. Psychiatric research	15,000
Cornell University Medical College. Studies of reflex behavior in relation to neuroses	10,400
Dartmouth College, Hanover, New Hampshire. Medical School. Research in physiological optics	90,000
Harvard Infantile Paralysis Commission. Field studies in North Carolina	5,000
Institute of the Educational Sciences, Geneva, Switzerland. Research in child psychology	7,200
London County Council, England. Psychiatric research at Maudsley Hospital	45,000

National Hospital, Queen Square, London, England. Construction of building and endowment of research.....	\$600,000	
New York University, New York City. College of Medicine. Research in experimental neurology.....	5,000	
Northwestern University, Chicago, Illinois. Medical School. Research in neuroanatomy.....	8,000	
University of Amsterdam, Netherlands. Neurological Clinic. Research on dementia praecox.....	9,050	
University of Chicago, Illinois. Study of the physiology of sleep.....	6,300	
University of London. Galton Laboratory. Studies in human genetics in relation to mental disease.....	35,000	
University of Pennsylvania, Philadelphia. School of Medicine. Research on growth of living tissues.....	12,500	
Worcester State Hospital, Massachusetts. Research on dementia praecox.....	33,000	
	<hr/>	\$903,950
Application of Modern Psychiatric Knowledge		
Massachusetts Department of Mental Diseases, Boston. Publication of statistical data on mental disease in Massachusetts.....	\$26,000	
National Committee for Mental Hygiene, New York City.....	20,000	
North Carolina Commission for the Study of the Insane and Mentally Defective..	16,300	
	<hr/>	\$62,300
Teaching of Public Health in Medical Schools		
Comparative study of the teaching of preventive medicine, public health, and hygiene in North American and Western European medical schools.....	\$25,000	
Visits of teachers of public health and deans of medical schools in the United States and Canada, to confer on methods and problems of teaching and research in preventive medicine.....	4,000	
	<hr/>	\$29,000
		\$1,488,450

FORMER PROGRAM

China Medical Board, Inc., New York City. Maintenance of the Peiping Union Medical College.....	\$454,000	
University of Brussels, Belgium. Endowment for maintenance of St. Pierre Hospital as a teaching hospital for the university Medical School.....	200,000	
Supplying medical literature to Russia during 1936.....	10,000	
University of Brussels, Belgium. Development and endowment of School of Nursing.....	262,000	
	<u>\$926,000</u>	\$926,000

MISCELLANEOUS GRANTS

Cornell University, Ithaca, New York. Con- ference of workers in the biological sciences	\$1,000	
Johns Hopkins University, Baltimore, Mary- land. Institute of the History of Medicine..	37,500	
Special research aid fund for European scholars in the medical sciences.....	16,100	
	<u>\$54,600</u>	\$54,600

FELLOWSHIPS

Administered by the Medical Research Council, London, England (1935, 1936)....	\$4,000	
Administered by the National Research Council, Washington, D. C. (1936-1937)...	45,000	
Administered by The Rockefeller Founda- tion, New York office (1936).....	90,000	
	<u>\$139,000</u>	\$139,000

GRANTS IN AID

Administered by The Rockefeller Founda- tion, New York office (1936).....	\$125,000	\$125,000
Total Appropriations.....		<u>\$2,733,050</u>

1935 Payments

American University of Beirut, Republic of Lebanon. Improvement of teaching facilities in the medical sci- ences, nursing, and the premedical subjects.....	\$50,000.00
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Canadian National Committee for Mental Hygiene, Toronto. Development of training centers for advanced students.....	\$9,915.63
Central Institute for the Deaf, St. Louis, Missouri. Research in neurology.....	990.86
Cheeloo University, Tsinan, China. School of Medicine. Maintenance.....	4,168.75
Chicago Area Project, Illinois. General budget.....	17,277.16
China Medical Board, Inc., New York City. Maintenance of Peiping Union Medical College.....	460,850.00
Chinese Medical Association, Shanghai. General budget	5,091.20
Chulalongkorn University, Bangkok, Siam.	
Aid for an addition to the pathology building and its equipment, and for a building for the School of Nursing.....	3,004.89
Visiting professors and nursing leaders.....	7,214.35
Columbia University, New York City. College of Physicians and Surgeons.	
Research in psychiatry.....	2,500.00
Research on virus diseases.....	4,193.24
Studies of the common cold.....	1,689.85
Cornell University Medical College.	
Studies of the rôle of the glands of internal secretion in relation to growth and inheritance.....	24,977.04
Study of reflex behavior in relation to neuroses.....	5,200.00
Dalhousie University, Halifax, Canada. Development of teaching in public health and preventive medicine.....	8,285.26
Dartmouth College, Hanover, New Hampshire. Medical School. Research in physiological optics.....	28,000.00
Fellowships in the medical sciences administered by The Rockefeller Foundation.....	96,511.13
Fellowships in psychiatry administered by The Rockefeller Foundation.....	15,149.38
Grants in aid in the fields of psychiatry and public health.....	66,987.66
Harvard Infantile Paralysis Commission, Boston, Massachusetts. Studies in poliomyelitis.....	5,000.00
Harvard Medical School, Boston, Massachusetts.	
Teaching and research in psychiatry.....	59,839.74
Biochemical studies of synovial fluid.....	1,497.54
Research in physiology and physical chemistry.....	29,288.11
Hungarian Scholarship Council, Budapest. Foreign scholarships in medicine.....	1,183.45
Institute for Psychiatric Research, Munich, Germany.	
Research in neurohistology, serology, and biochemistry.....	7,488.44
Institute for Psychoanalysis, Chicago, Illinois. Research and teaching.....	7,500.00

Institute of the Educational Sciences, Geneva, Switzerland. General budget.....	\$9,795.92
Institute of the Pennsylvania Hospital, Philadelphia. Development of research and teaching in psychiatry	16,750.47
Johns Hopkins University, Baltimore, Maryland. School of Medicine.	
Research in psychiatry.....	19,368.84
Study and teaching in child psychiatry.....	14,579.26
Study of deafness.....	13,719.36
Study of obstetrical records.....	5,178.24
Johns Hopkins University, Baltimore, Maryland. Institute of the History of Medicine. Support.....	6,250.00
✓ Kaiser Wilhelm Institute for Brain Research, Berlin-Buch, Germany. Special apparatus and maintenance	1,638.55
✓ Kaiser Wilhelm Institutes of Cell Physiology and Physics, Berlin-Dahlem and Berlin, Germany. Land, buildings, and equipment.....	360,436.75
Leland Stanford, Jr., University, Palo Alto, California. General research fund in the medical sciences.....	10,000.00
Lister Institute of Preventive Medicine, London, England. Purchase of ultracentrifuge for use in medical research.....	2,396.88
McGill University, Montreal, Canada. Construction and equipment of a laboratory in the Royal Victoria Hospital.....	6,239.72
Massachusetts Department of Mental Diseases, Boston. Research in psychiatry at the Boston State Hospital	13,700.00
Massachusetts General Hospital, Boston. Development of teaching and research in psychiatry.....	15,000.00
Massachusetts Society for Mental Hygiene, Boston. Work in the field of mental disorders.....	1,758.10
Medical literature for Russia.....	10,005.83
Medical Research Council, London, England.	
Fellowships.....	16,401.45
Research in puerperal fever.....	15,000.00
Studies in human genetics in relation to mental disease, at the Galton Laboratory of the University of London.....	1,985.00
National Committee for Mental Hygiene, New York City. Support of activities.....	30,000.00
National Conference on the Nomenclature of Disease, New York City. General budget.....	1,045.93
National Research Council, Washington, D. C.	
Fellowships in the medical sciences.....	17,358.33
Research aid fund.....	10,664.39
Work of the Committee on Drug Addiction.....	48,064.88
Neurophysiology in European countries. Surveys.....	1,294.56
New York University, New York City. College of Medicine. Research in experimental neurology.....	5,673.66

Northwestern University, Chicago, Illinois. Medical School. Research in neuroanatomy.....	\$4,000.00
✓Notgemeinschaft der Deutschen Wissenschaft, Berlin, Germany. Fellowships in the medical sciences.....	863.03
Peiping Union Medical College, China. Fellowships and grants in aid to graduate and departmental students.....	10,000.00
Foreign fellowships.....	15,033.29
Research aid funds, Europe.....	56,377.93
Research aid fund, Special, for European scholars....	16,100.00
Research and developmental aid in China.....	3,376.39
Shanghai, China. Purchase of land for medical school; expenses in connection therewith.....	6,051.66
Trudeau Foundation, Trudeau, New York. Research in tuberculosis.....	2,500.00
University of Amsterdam, Netherlands. Research on dementia praecox.....	2,910.55
University of Brussels, Belgium. Development of the School of Nursing.....	247,118.13
Endowment of St. Pierre Hospital.....	200,000.00
University of Chicago, Illinois. School of Medicine. Development of a subdepartment of psychiatry....	26,250.00
Investigation of the physiology of sleep.....	6,300.00
University of Colorado. School of Medicine, Denver. Teaching of psychiatry.....	7,791.69
University of Copenhagen, Denmark. Institute of General Pathology. Research on inheritance in relation to blood groupings.....	1,811.75
University of Leiden, Netherlands. Research in child psychiatry.....	3,091.73
✓University of Leipzig, Germany. Institute of Physiological Chemistry. Research aid.....	8,486.63
University of Michigan, Ann Arbor. Medical School. Development of teaching and investigation in psychiatry.....	16,500.00
University of Montreal, Canada. Faculty of Medicine. Development of laboratories.....	12,500.00
University of Padua, Italy. Institute of Histology and Embryology. Research.....	1,675.72
University of Paris, France. Department of Parasitology. Support.....	11,220.00
Radium Institute. Division of Biophysics. Support..	11,519.25
University of Pennsylvania, Philadelphia. School of Medicine. Study of living tissues.....	6,811.13
University of Rochester, New York. School of Medicine and Dentistry. Development of a child guidance clinic in the Division of Psychiatry.....	6,006.53

THE MEDICAL SCIENCES

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Special research in dental pathology.....	\$24,021.47
Special research in pulmonary capacity.....	1,173.99
Studies on the biological effects of heat.....	6,272.12
University of Szeged, Hungary. Department of Medi- cine.	
Maintenance.....	798.00
Scientific equipment.....	3,048.46
University of Turin, Italy. Institute of Anatomy. Re- search in problems of growth.....	824.93
Vanderbilt University, Nashville, Tennessee. School of Medicine. General research fund.....	40,000.00
Visits by teachers of public health and deans of medical schools in the United States and Canada.....	2,021.87
Walter and Eliza Hall Institute of Research in Pathol- ogy and Medicine, Melbourne, Australia. Research on virus diseases.....	1,977.50
Washington University, St. Louis, Missouri.	
General research fund in the medical sciences.....	10,000.00
School of Medicine. Research on virus diseases.....	2,173.31
Western Reserve University, Cleveland, Ohio. School of Medicine. Research on whooping cough.....	4,500.00
Worcester State Hospital, Massachusetts. Research on dementia praecox.....	12,610.60
Yale University, New Haven, Connecticut.	
Institute of Human Relations. Development of psy- chiatry and care of individuals under observation..	100,000.00
School of Medicine. General research fund.....	16,250.00
Special research in dental pathology.....	10,000.00

THE MEDICAL SCIENCES
STAFF DURING 1935

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¹ Resigned August 31, 1935.

THE NATURAL SCIENCES

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THE NATURAL SCIENCES

The behavior of a living organism presents some features which appear to belong largely to the broad realm of psychology, and other features that appear to belong largely to the broad realm of physiology. The growth of knowledge, however, continuously emphasizes the interdependence of these two aspects; and the constant interplay, if not the actual identity, of the psychical and somatic aspects of behavior becomes every day more evident.

To substantiate this statement would be to rehearse a large part of the progress of biology during the last quarter-century; and one or two striking but characteristic instances are perhaps all one need mention. About twenty years ago Professor W. B. Cannon of Harvard developed his now famous "emergency theory" to explain the interaction which occurs between the sympathetic nervous system and the adrenal glands when the subject (a cat in Dr. Cannon's experiments) is caused to experience pain, fear, or anger (by, for example, the presence of a barking dog). Under the influence of this emotional experience, and to meet this "emergency," a chemical substance called epinephrine is secreted by

the adrenal glands and "is automatically discharged into the circulation and serves to reinforce the activity of the sympathetic nervous system, whereby the body is placed in condition for activity to meet the demands of the occasion. . . . The stressful experience demands action. Large muscle masses come into activity and this can be continued for only a short time without mobilization of the physiologic resources. The heart begins to pump more forcefully, bringing more fuel material and oxygen to the muscles and carrying away the augmented wastes. The fuel as it is used up is replenished from the stored sugar (glycogen) of the liver. The air passages dilate to permit freer breathing. Constriction of the blood vessels of the skin and the abdominal organs increases the blood supply available to the muscles and the directing nervous system. The digestive functions go into abeyance until the emergency is over. In short, the whole animal is re-integrated for muscular activity. The picture could be supplemented by other supporting details but these major features will serve to suggest how a discharge of adrenine aids the animal in meeting the emergency."

The series of brilliant experiments which established this emergency theory constituted one of the early and impressive instances of the close relationship which may exist between the

psychical aspects of emotional states and various physiological functions. Indeed, for important aspects of the relationship one must even leave the physiologist's laboratory and consult the biological and organic chemists; for the specific substance which is secreted by the gland in question was isolated, purified, and found to have a composition $C_9H_{13}O_3N$, and a structure which is indicated by its name "dihydroxymethylamino-ethylbenzene."

There have been repeated instances of the similar establishing of direct relationships between "mental" activity, emotional states, etc., on the one hand, and physiological data on the other hand, these relationships being ultimately stated in biochemical terms. To indicate how deeply into the psychical realm such investigations can penetrate, one recalls the classical experiments of Pavlov who, a physiologist studying the digestive process in a dog, uncovered basic facts, if not indeed the basic facts, of learning, memory, control, and inhibition. One also recalls that the maternal instinct which leads a female animal to care for, fondle, feed, and protect her young has been demonstrated to be dependent upon various chemicals, one of which, manganese, is a metallic element also used to make tool steel hard and tough! To indicate how broadly such concepts now underlie the inter-

pretation of behavior, one may quote from the recent Horsley Memorial Lecture by Sir Walter Langdon-Brown on the topic "The Integration of the Endocrine System": "It has long been common knowledge that emotional states may modify secretion; the tears of sorrow and the dry mouth of fear are proverbial. In such instances it is obvious that a nervous impulse has produced or prevented a chemical process. But it is only quite recently that we have realised that *all nervous impulses have a chemical mediator between the neuron and the tissue cell, and indeed between one neuron and another.*"

The present program of the division of the natural sciences of The Rockefeller Foundation aims to stimulate and assist studies which contribute directly to, or form the necessary basis for, an understanding of behavior. Whereas the division of medical sciences, with its similar aim, emphasizes studies of the psychical aspects of behavior, the natural science program emphasizes studies of the somatic aspects. Although a rational understanding of the behavior of man himself forms the underlying purpose of the program, man is obviously too precious and too complicated an organism to serve often as the experimental material. It is clear, for example, that the human race needs, and needs desperately, a fuller and more useful knowledge of

human genetics, and yet it is equally obvious that genetics, at least for many years to come, must base its progress upon experimentation with lower forms of life.

The natural science program recognizes a special interest in the following fields:

- 1) Biochemistry and biophysics
- 2) Biology of sex
- 3) Embryology (developmental mechanics, chemical embryology, etc.)
- 4) General physiology (cellular physiology, etc.)
- 5) Genetics (including cytology)
- 6) Internal secretions (hormones, enzymes, etc.)
- 7) Nutrition (vitamins, metabolism, etc.)
- 8) Radiation effects (photochemistry, x-rays, ultra-violet light, etc.)

The choice of these fields reflects a confidence that findings of lasting significance will continue to result from the application to biological problems of the quantitative and analytical techniques of chemistry, physics, and mathematics. A major justification for this confidence is the fact that the topics here listed engage the attention of a large portion of the liveliest and most competent ability in modern experimental biology.

With the exception of a small number of items

closing out former projects, Rockefeller Foundation aid given during 1935 in the natural sciences was in general limited to projects in the above-mentioned fields of experimental biology.

There exist groups, sometimes including practically a whole department of biology, whose members are working together on problems which fall in several of the recognized subfields of interest of the Foundation's program. Grants to such groups serve to aid a concentrated program, and have the added significance of building up strong centers which may continue to exemplify the effectiveness of such an approach to biological problems. Such grants have been made to the University of Chicago, to Leland Stanford, Jr., University, and to the Long Island Biological Association.

A limited program of fellowships and grants in aid within the chosen field of concentration was continued during 1935.

One large item coming under the heading of former program deserves special mention. The sum of \$1,000,000 was given the Woods Hole Oceanographic Institution. A part of this replaces annual grants running to 1940 undertaken by the Foundation at the time of the original grant in 1930. The present grant closes out Foundation contributions, and puts on a permanent, self-sustaining basis an important and

highly valuable research activity connected with an earlier program.

**Program of Specific Concentration
Experimental Biology**

**Application of Physical and Chemical Techniques
to Biological Problems**

University of Copenhagen

Professors Bohr, Krogh, and von Hevesy

The sum of \$54,000 was appropriated to the University of Copenhagen for special researches in the application of the methods and techniques of physics, chemistry, and mathematics to biological problems. This grant is in support of the cooperative researches of Professor Niels Bohr, of the Institute of Theoretical Physics, Professor August Krogh, of the Institute of Physiology, and Professor Georg von Hevesy, of the Institute of Physical Chemistry.

The new possibilities for the investigation of fundamental problems in biology opened by the recent advances in atomic physics are a major preoccupation at the University of Copenhagen, where experimental biological researches have long gone hand in hand with theoretical discussions of physicobiological problems. This present project deals with biophysical problems. The grant now made is divided into four parts. The first part, of \$15,000, provides high voltage equipment for the production of radioactive ma-

terials. This was given in dollars so that it could be expended outside of Denmark. The second part of the grant, 14,000 Danish crowns annually for a period of five years, provides assistants to Professors Bohr and von Hevesy. The third part of the grant, 14,000 Danish crowns annually for a period of five years, provides materials and equipment to be used in the Institute of Theoretical Physics by Professors von Hevesy and Bohr. The fourth part, of 3,000 Danish crowns annually for a period of five years, is for materials and equipment for Professor August Krogh.

Columbia University
Heavy Hydrogen

An appropriation of \$12,500 was made to Columbia University for researches in the biological effect of heavy hydrogen. The work, which is under the general direction of Professor H. C. Urey, concerns the biological importance of the so-called "heavy hydrogen," for the discovery of which Professor Urey recently received the Nobel prize.

The solution of many problems of intermediary metabolism would be greatly facilitated by the availability of a method for labeling individual biological substances in some manner which avoids disturbance of their normal physiological behavior. Experiments during the year with fats and fatty acids have indicated that a

part of the hydrogen may be replaced by heavy hydrogen, and this part used as a marker. An extensive program for research on fat metabolism has been outlined. Numerous experiments are under way on the effect of various concentrations of heavy water upon biological processes. It is this work which will be continued under the present grant. A Foundation grant in 1934 provided \$10,000 for the purchase of heavy water. Professor Urey expects to have on hand for next year about two gallons of pure deuterium oxide which will be sufficient for the experiments in both chemistry and biology.

**National Research Council
Committee on Effects of Radiation on
Living Organisms**

During the year there was appropriated the sum of \$75,000 to the National Research Council for expenditure and allocation, or both, by the Committee on Effects of Radiation on Living Organisms during the three-year period July 1, 1935, to June 30, 1938. Aid was formerly given this committee by the General Education Board. The study of various types of radiation (x-ray, radium, ultra-violet, infra-red, etc.) offers a most promising avenue of attack, through the physical sciences, upon various important problems of biology. In the past the radiation committee referred to above has

devoted its funds to researches on the effects of radiations in the fields of genetics, cytology, and morphology. The results of the work supported by this committee have been prepared for publication in a two-volume work entitled *A Survey of Radiation*, to which some forty investigators have contributed chapters.

Investigations now in the foreground concern the nature of the action of radiations on the protoplasm of the cell and its products. Past investigations of radiation effects have been qualitative to a predominant degree, for the complex nature of biological materials scarcely permits of that definiteness and simplicity attained in the physical sciences. However, stress is placed upon projects and facilities capable of yielding results as quantitative as the materials may permit, and upon the fullest utilization of precise measurements and a rigid control of conditions. Professor B. M. Duggar, the chairman of the Committee on Effects of Radiation on Living Organisms, is professor of physiology and economic botany at the University of Wisconsin.

University of Leeds
Biophysics

In 1934 the Foundation provided scientific equipment for Professor W. T. Astbury's researches on the x-ray analysis of biological ma-

terials. During 1935 the Foundation appropriated \$17,750 to the University of Leeds, England, for use in connection with research in the x-ray analysis of biological tissues under the direction of Professor Astbury over the three-year period October 15, 1935, to October 14, 1938.

Not many years ago substances were catalogued as being either crystalline or non-crystalline, the crystalline substance being built up of molecules in accordance with a definite and regular pattern. Recently, however, it has been learned that many "non-crystalline" substances, even including water in the liquid state, have a considerable degree of regularity in their molecular building pattern, and studies have been extended to obtain new and important information concerning muscle, nerve, and other biological entities. Information concerning the nature and dimensions of such crystal patterns has been obtained through the use of x-rays, Sir William Bragg being the leading investigator in this field. Professor Astbury of the University of Leeds was a pupil of Sir William Bragg in the field of x-ray analysis. By x-ray examination of muscle, Professor Astbury has shown that the characteristic elastic properties of this tissue result from the long, spiral-like form of certain molecules occurring in the tissue. The detailed

structure of muscle has unexpectedly turned out to be closely analogous to that structure previously discovered in hair, nail, and other horny tissue. Preliminary experiments on nerve tissue have indicated that this technique is applicable here also. Professor Astbury has completed a new high power x-ray tube specially designed for the examination of living materials; and it is hoped that this, in connection with an x-ray microcamera which he has designed, will permit him to undertake investigations on chromosome structure.

University of Oxford

Theoretical Biology

The sum of \$12,750 has been appropriated to the University of Oxford for research in the application of mathematical analyses to biological problems by Dr. Dorothy Wrinch during the five-year period beginning October 1, 1935. For more than ten years Dr. Wrinch has been an important contributor to the research literature of mathematics and mathematical physics. During the past five years she has been explaining the possibilities of application of the techniques of mathematics and mathematical physics to certain problems in biology, notably those of cytology, genetics, histology, and physiology. Her present work is concentrated on the analysis

of the structure of chromosomes. There are two objectives: the first is to interpret in terms of concepts belonging to mathematics and the physical sciences the findings of the cytologists regarding the behavior of chromosomes, notably in their power to swell, contract, grow, and divide. The second is to relate the postulates of genetics to the molecular structure of the chromosomes, which should make possible a formulation in mathematical terms of types of genetic change and prepare the way for a description in terms of chemistry and crystal physics of the gene itself.

Researches are also in progress on the banded structure of chromosomes in the salivary glands of certain insects, as well as on the structure of other entities in the cell. These researches should find their natural sequel in the consideration of the physicochemical situation which regulates the laying down of tissues of different types, both in the embryo and in the adult organism. They will require the synthesis of many results coming from mathematics, physics, and chemistry, as well as data from selected parts of biology. The program worked out at the University of Oxford has the approval of such English workers in biology as J. B. S. Haldane, A. V. Hill, Lancelot Hogben, Joseph Needham, and J. H. Woodger.

University of Uppsala
Professor Svedberg

The researches of Professor T. Svedberg at Uppsala constitute a noteworthy instance of the application of physical techniques to biological problems. The lack of a reliable method for the determination of molecular weights of large molecules has been a serious hindrance to research in biochemical fields. Professor Svedberg has developed a new method for making these determinations, based upon the measurement of the sedimentation of molecules in strong centrifugal fields. His experiments involve the use of an ultracentrifuge.

In a recent published article, Professor Svedberg states: "The molecular weight analysis by means of sedimentation measurements in strong centrifugal fields requires a complicated and expensive machinery and a trained staff of mechanics for handling it. At the present time it seems to be the only reliable means we possess for carrying out such an analysis in systems like the proteins. We may hope that future development will simplify matters, and that future constructors may see other ways for realizing the experimental conditions which we have tried to fulfill in the ultracentrifuge."

Preliminary studies of the blood of healthy persons and of those having certain organic dis-

eases indicate that there is a marked difference in the number and size of the protein molecules of the two bloods. This fact may have important clinical applications. These questions will be studied at the Lister Institute in London, where a Svedberg centrifuge has been built under partial support of the medical sciences division of The Rockefeller Foundation.

The sum of \$55,000, or as much thereof as may be necessary to purchase a maximum of 185,000 Swedish crowns, has been appropriated to the University of Uppsala, Sweden, for support of the research of Professor Svedberg on the physical-chemical properties of proteins and other heavy molecules during the five-year period January 1, 1936, to December 31, 1940, the amount to be available annually not to exceed 37,000 Swedish crowns.

Technical Institute, Graz, Austria
Biophysical Chemistry

The sum of \$5,800 has been appropriated to the Technical Institute, Graz, for research in biophysical chemistry at the Physical Institute under the direction of Professor F. Kohlrausch during the two-year period beginning January 1, 1936. When the molecules of a substance are illumined by an intense beam of light they emit, at right angles to the incident beam, a

faint amount of scattered light known as the Raman spectrum. The study of this scattered light reveals various facts about the substance and structure of the molecules of the material in question. The method is particularly suited to large, complex, and relatively unstable molecules, and hence has important possibilities in the study of substances of biological importance.

Professor Kohlrausch, director of the Physical Institute, is a recognized authority in the field of Raman spectra. About one and a half years ago he turned his attention to the application of this technique to the amino acids, the basic substances which form the proteins. The grant in question relates primarily to these amino acid studies.

University of Michigan
Biophysics

For several years past Professor O. S. Duffendack, of the Department of Physics of the University of Michigan, has been cooperating with Dr. L. H. Newburgh, professor of internal medicine, in developing a spectroscopic method of measuring the amount of inorganic bases in body fluids. The advantages of this method are that it is more reliable, very considerably faster, and requires smaller samples than any known chemical methods. During the past year these methods

have been further developed with reference to their application for quantitative determinations of the constituent amino acids of protein substances.

The amino acids, although of high importance in vital processes, are difficult to analyze chemically. In fact for some of them there is no satisfactory technique and, where chemical methods exist, they are such slow and tedious processes as to make comprehensive investigations impracticable. The Foundation has appropriated the sum of \$14,000 to the University of Michigan for research in the applications of spectroscopic methods to biological and medical problems during the two-year period July 1, 1935, to June 30, 1937. Such studies have already demonstrated their usefulness, and the field is recognized as having possibilities of the highest practical importance.

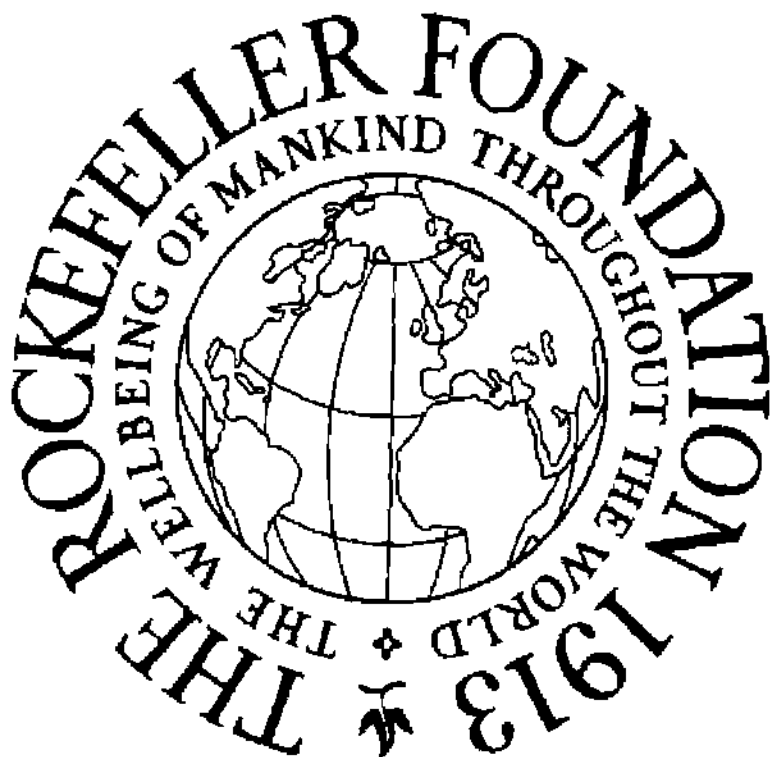
University of Chicago

Biological Problems. Spectroscopic Methods

The sum of \$14,000 has been appropriated to the University of Chicago toward research in the application of spectroscopic methods to biological problems during the year beginning July 1, 1935. The work is under the direction of a guiding committee composed of Professors Hogness, Koch, and Kraus.

In 1934 the Foundation appropriated \$11,750 to the University of Chicago for research on the spectroscopic analysis of such body fluids as blood, spinal fluid, urine, bile acids, and their hormone, vitamin, and enzyme constituents. During the first year of the work, most of the technical difficulties arising from refinement of methods and apparatus were solved. Two of the junior investigators associated with the project had previously used spectroscopic methods for the analysis of plant pigments. In this way there were determined the location and nature of the absorption bands for A and B chlorophyl, which, in turn, led to a quantitative determination of the relative amounts of A and B chlorophyl in a mixture. The originality and promise of these methods led to a widening of the scope of the work to include a variety of biological fluids and tissues. Encouraging progress has been made in studies of the male and female sex hormones and in more basic studies in sterol chemistry.

The present grant provides salaries of various investigators, supplies, and a sum for the purchase of a special motor generator set which furnishes electric current at a particularly constant voltage. The University of Chicago provides laboratory space, general maintenance, certain specialized and expensive apparatus, as well as clerical and unskilled services.



Photograph Excised Here

Corner of a laboratory in the Department of Chemistry at the University of Chicago where new apparatus and original and promising methods of analysis have been developed in connection with research in the application of spectroscopic methods to the solution of biological problems, under a grant from the Foundation.

University of Stockholm

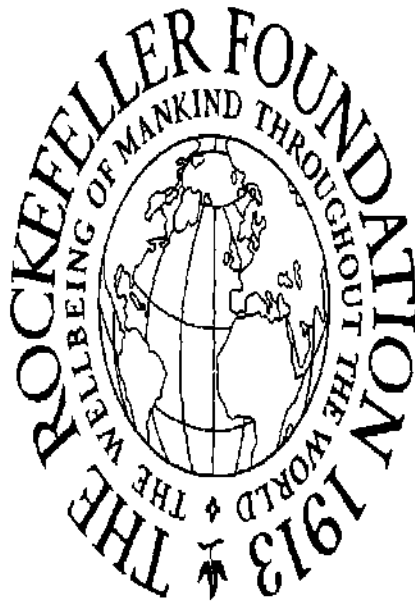
Cell Physiology

The sum of \$9,850, or as much thereof as may be necessary to purchase not more than 36,500 Swedish crowns, has been appropriated to the University of Stockholm toward the support of cooperative research in biophysics, chemical biology, and cell physiology. This research is being carried out under the direction of Professor John Runnström, one of the leading zoophysicologists in Sweden, who has gathered around him in Stockholm a group of unusually able young investigators. Work is centered on the study of the absorption spectra of certain oxidation reduction systems, to determine the effects of ultraviolet light on cells under different metabolic conditions. There is an especial interest in determining whether one can, by irradiation techniques, separate different components of what possibly is an enzyme complex. The study of the activated states of certain biologically important molecules is of interest as an approach to the study of the activation of molecules by enzymes. The work in hand involves the study of formaldehyde, of phosphate compounds, of the effects on respiration due to fertilization of the sea urchin eggs, and of the effects of CO_2 before and after fertilization. The main purpose of this grant is to provide equipment and supplies.



Photograph Excised Here

Cage-rearing of grasshoppers for research on the normal cell at the State University of Iowa. Grasshopper eggs are considered ideal material for this study. They are easily obtained throughout the year, are of convenient size, and are remarkably uniform. Eggs containing embryonic cells at any desired stage of development are at all times available.



Photograph Excised Here

Micro-manipulator designed by Robert W. Chambers and extensively used in studies on living cells. This device enables the microscopist to subject elements in the field of the instrument to a wide range of operations and to perform exceptionally minute micro-dissections. The Foundation has made a grant to New York University for three years' research in cellular physiology under the direction of Professor Chambers.

**Emma Pendleton Bradley Home
Electroencephalography**

An appropriation of \$46,500 has been made to the Emma Pendleton Bradley Home, East Providence, Rhode Island, toward special research in electroencephalography under the direction of Dr. Herbert H. Jasper during the three-year period September 15, 1935, to September 14, 1938. This research is related to the program of both the natural and the medical science divisions of The Rockefeller Foundation. It involves the study of brain potentials in the normal and in the diseased brain by electrical recording from electrodes placed upon the head. It offers a promising method of attack upon many problems in psychology, neurology, and psychiatry. The Emma Pendleton Bradley Home is under the general administrative direction of Butler Hospital. Dr. Jasper, director of research, is also an assistant professor at Brown University. At present the hospital accommodates about fifty patients.

During the past year two amplifier-oscillograph recording systems have been perfected which permit simultaneous recording of the electrical discharges of the brain from different parts of the head. Records taken from a region of the head beneath which the brain is known to be pathological are markedly different from rec-

ords taken from the same region on a normal brain. A study of the electrical discharges in various parts of the brain during epileptic seizures is under way.

McGill University
Biophysics

The sum of \$24,000 has been appropriated to McGill University, Montreal, for research in the application of spectroscopic methods to biological and medical problems during the three-year period July 1, 1935, to June 30, 1938. This sum provides support of cooperative researches in the spectroscopic analysis of chemical elements, especially lead, in spinal and other body fluids. With a new and improved quartz spectrograph it is possible to detect amazingly small concentrations of metallic elements in biological materials. Dr. John S. Foster was, in fact, able to detect and measure, by spectroscopic means, one hundred-millionth of a gram of lead from a sample of spinal fluid of only one-fifth of a cubic centimeter. The improvement of the spectrographic method opens up new fields of investigation hitherto inaccessible.

As a result of these experiments conclusions have been reached concerning the behavior of lead in the human body which are contrary to the prevalent views expressed in the literature. A satisfactory solution of the problem of lead

intoxication would go far toward the solution of the general problem of metallic intoxication. This project illustrates the cooperation between a physicist and medical men in a neurological institute working with various types of central nervous system diseases. Certain types of calcium therapy cause an improvement in the condition of patients suffering from nervous disorders suggestive of lead poisoning. Acidosis mobilizes the lead, and high calcium therapy stores it. By this means it is possible to de-lead the central nervous system tissues. The present method of lead detection by spectral analysis can also be applied to determine traces of metals in various plants and food stuffs.

University of Utrecht
Biophysics

There has been appropriated to the University of Utrecht, Netherlands, for research in spectroscopic biology under the direction of Professors L. S. Ornstein and A. J. Kluyver during the two-year period beginning January 1, 1936, the sum of \$16,800. Many notable contributions have come from the laboratory of Professor Ornstein, especially in regard to the measurement of spectral intensities. Professor Kluyver is one of the outstanding biologists in the Netherlands and has done important research in microorganisms. The work in progress concerns the

study of the effects of radiant energy on certain biological processes. An attempt is made to measure the energy radiated when oxygen is assimilated by a living organism, using for this purpose a strain of bacteria which luminesces as it uses oxygen. Other experiments are designed to determine the chemical activity of a living organism under the influence of radiant energy. In these researches the accurate quantitative measurement of energy relations is essential, and the physical techniques developed in this research constitute a new and distinctly favorable method for studying the problems of cell oxidation and of growth in plants. Further work on the spectrophotometric analysis of the thyroid principle in the blood stream is under way.

**George Washington University
Biochemistry**

The sum of \$25,500 has been appropriated to George Washington University for use over the three-year period beginning with the academic year 1935-36 for research in biochemistry under the direction of Professor Vincent du Vigneaud, the amounts available not to exceed \$9,000 during the first year, \$8,500 during the second, and \$8,000 during the third.

Strictly chemical problems loom large in the field of biology. For example, in endocrinology the isolation, purification, and ultimate synthesis

of the hormones in crystalline form is a biochemical problem. Much of the work in vitamins and enzymes is of a chemical nature. Biochemistry is fundamental to many of the important problems in the field of biology. Professor du Vigneaud is developing his department along two lines, emphasizing: (1) the biochemistry of the hormones, and (2) the chemistry and intermediary metabolism of the amino acids, peptides, and the proteins. In the endocrine field studies are in progress on the chemistry of insulin and other substances. Emphasis is also placed upon the chemistry and metabolism of cystine, a substance related to insulin and to the post-pituitary hormone.

**Massachusetts General Hospital
Parathyroid Hormone and Calcium and Phosphorus
Metabolism**

The sum of \$10,000 was appropriated to the Massachusetts General Hospital for use over a three-year period beginning September 1, 1935, for research on the parathyroid hormone and calcium and phosphorus metabolism under the direction of Dr. Fuller Albright, with the assistance of Dr. H. W. Sulkowitch, the latter working chiefly on the biochemical and physicochemical aspects of the problem. The grant was made in support of research in the endocrine control of calcium, phosphorus, and mag-

nesium metabolism and for the development and utilization of biophysics and biochemistry in the study of the deposition of calcium in the kidneys and bladder.

Studies carried out at the Massachusetts General Hospital have shown that in about 10 per cent of cases of kidney stone there is a condition of hyperparathyroidism. Important chemical and physical leads have opened up which promise to shed light on the cause of hyperparathyroidism. Professor Albright is of the belief that the parathyroid hormone acts primarily on calcium and phosphorus metabolism, leading to changes which, other things being equal, predispose to bone disease. It is the opinion of other workers that the hormone acts directly on the bone, producing changes in calcium and phosphorus metabolism. In the present work an attempt is made to see which of these two hypotheses is correct. The effect of the parathyroid hormone on organic and inorganic phosphorus compounds of the blood is also being studied. There is, likewise, an interest in knowing whether one can tell from the quantitative analysis of the kidney stones whether the stone is a result of parathyroid disease or not.

University of Rochester
Diathermy Studies

The University of Rochester has received a

grant of \$6,400 for work on the biological effects of heat under the direction of Dr. Stafford Warren during the one-year period September 1, 1935, to August 31, 1936. This project falls within the field of the application of the tools of physics to the solution of biological and medical problems. Previous sums totaling \$36,200 have been appropriated to the School of Medicine and Dentistry of the University of Rochester for studies on the physiological effects of fever temperatures.

The concept that temperatures in the fever range can kill bacteria deleterious to the host without damaging the host is one which has long been in controversy but now has real hope of clarification. Dr. Warren has been working for a number of years on the effects of artificially induced fever temperatures upon the bacterial and animal agents of certain chronic infections such as arthritis, gonorrhoea, syphilis, and leprosy. This fever treatment has now been administered at Rochester to some 500 patients. In many instances cultures were raised of the infecting organism, and the death time at $41\frac{1}{2}^{\circ}\text{C}$. for the particular strain of organism was determined prior to the fever treatment. The patients were then given a fever of $41\frac{1}{2}^{\circ}\text{C}$. for the determined time. In thirteen out of sixteen cases of gonococcus infection there was prompt and so

far complete recovery. The other three cases showed definite improvement. The work with syphilis is most encouraging, although the results are not so definite or so far advanced. Isolation of the various strains of pathogenic organisms and the determination of the heat resistance of each, and the perfection of instruments and methods for measuring temperature gradients within the body remain incomplete and will occupy a further year. Dr. Warren is working also on the relation of artificial fever to the augmentation of the normal body defense mechanisms, bacterial toxins, and the bacteria themselves.

Physiology and Genetics

California Institute of Technology

Professor Morgan. General Physiology

The Foundation has made an appropriation of \$40,000 to the California Institute of Technology for research in physiology under the direction of Professor T. H. Morgan during the two-year period July 1, 1935, to June 30, 1937. The program at the California Institute of Technology is primarily concerned with studies designed to bridge the gap between the gene-chromosome theory of genetics and the developed characteristics of the mature organism. Since 1928 Professor Morgan has developed at the California Institute of Technology a well-rounded research department of experimental biology. Sufficient

funds were obtained to carry on important research in genetics, plant physiology, biophysics, and biochemistry. The one department still to be built up was that of physiology. Under the present Foundation appropriation Professor Morgan, after an extensive search, selected as professor of physiology Dr. C. A. G. Wiersma, formerly of Utrecht, with Dr. van Harreveld, also of the Netherlands, as his assistant, to organize such a department.

**Washington University
Neurophysiology**

For special research in nerve physiology under the direction of Professor F. O. Schmitt during a three-year period from July 1, 1935, to June 30, 1938, there has been appropriated to Washington University, St. Louis, Missouri, the sum of \$16,500. Researches on the nature of the nerve impulse and the methods of its conduction are basic to the understanding of normal and abnormal behavior and are in close and direct relationship to the Foundation program in the medical as well as in the biological sciences. The group under Professor F. O. Schmitt has developed techniques for several lines of attack. Certain basic studies in nerve physiology have been published, and progress has already been made under the following four headings: (1) molecular orientation in the nerve; (2) molecular

film study; (3) nerve biochemistry; and (4) relation between electrical properties and metabolism in the nerve. It is held that an important approach to the problem of nervous activity is to be found in a thorough study of the molecular architecture and of the change of this architecture with activity. On Page 173 there is presented a picture of the oscillograph used in the analysis of nerve structure.

University of Michigan
Physiology

The sum of \$25,000 has been appropriated to the University of Michigan for research under the direction of Dr. Robert Gesell during the five-year period July 1, 1935, to June 30, 1940. Professor Gesell's group at Michigan is interested in the physiology of respiration and more particularly in the nervous control of respiration. This project is therefore partly neurophysiological in character. The university has purchased an oscillograph apparatus at a cost of \$2,400 for the study of action potentials of the central and peripheral nerve structures in their relation to respiration. Using delicate electrical devices, Professor Gesell has been experimenting upon the nature of the discharge of nerve cells within the central nervous system and has been determining, at least within close limits, the actual location of the origin of these electrical activities.

This has been followed by methods for the histological location of these same activities, and it has developed that the respiratory center, the region in major nervous control of respiration, is a diffuse region which extends not only through the medulla but also down the spinal cord as far as the lumbar segments.

State University of Iowa
Cellular Physiology

There has been appropriated to the State University of Iowa the sum of \$40,000 for special research on the normal cell under the direction of Professor J. H. Bodine during the five-year period from July 1, 1935, to June 30, 1940. One of the outstanding gaps in our knowledge of experimental biology and medicine is a thoroughgoing understanding of the properties of the normal cell. This has been a serious handicap to a better understanding of the abnormal behavior of cells and organisms. During the past ten years Professor Bodine has been accumulating information regarding the structural and physiological characteristics of a single organism (the grasshopper), because it furnishes suitable laboratory material for investigations into the fundamental behavior of normal growing cells. An accurate picture of cellular behavior from the time of the fertilization of the egg until hatching has been obtained. The embryo of the grasshop-

per was chosen for the basic cellular studies because of its relative simplicity as an organism, because of its lack of hormone or other disturbing factors, because of the fact that it is a cold-blooded animal so that temperature control is an easy matter, because of the relatively large size of its cells, and because of the amount of fundamental information already available concerning it. Many of the important problems of cellular biology can be attacked in a quantitative manner with this material.

University of Cambridge

Molteno Institute of Biology and Parasitology

An appropriation of \$30,600 has been made to the University of Cambridge for research in cellular physiology at the Molteno Institute of Biology and Parasitology under the direction of Professor David Keilin during the five-year period January 1, 1936, to December 31, 1940. The field of cellular physiology is a recognized interest of the program of the Foundation in the natural sciences. This institute at the University of Cambridge has broadened its original interest in parasitology to include work in virus and enzyme research as well as in cellular physiology. The latter work deals mainly with the study of cellular metabolism and the mechanisms of intracellular respiration. Investigations are under way on the intracellular enzymes. Other work

includes the purification of enzymes and intracellular pigments, and the kinetics of the reactions which they promote. The study of all these problems is essential for the proper understanding of the living cell under normal and abnormal conditions. They are of direct importance to biology and medicine.

New York University
Dr. Chambers

The sum of \$10,500 has been appropriated to New York University for support during the three-year period beginning January 1, 1936, of researches in cellular physiology under the direction of Dr. Robert W. Chambers. Dr. Chambers has designed a micro-manipulator now widely used in studies on the living cell, as it enables the experimenter to inject any substances desired inside the living cell and to operate microscopically as, for instance, in the removal of a chromosome from the cell or in the collection of the nuclei of cells for chemical analysis. The microcinematographic work done at this laboratory has also attracted considerable attention. The purpose of this laboratory is primarily the investigation of cell mechanics and the physical nature of protoplasm. The equipment enables the workers to analyze minute differences in the various components of the cell.

Some of the subjects being studied are the

mechanism of secretions, the permeability of a variety of cellular tissues, intracellular pH determination, the salt content of protoplasm, mitosis, and the problem of differentiation and monstrous growth in tissue cultures.

Columbia University
Physiology

Columbia University has received a grant of \$7,500 toward the researches of Professor Kenneth S. Cole of the Physiology Department over a period of two and a half years beginning January 1, 1936. Professor Cole for the past nine years has been concerned with the electrical characteristics of cells, of suspensions of cells, and of tissues. Measurements are made of the electrical properties of the interior substances and the retaining membranes in the case of both normal and abnormal living cells. While other investigators have usually worked with direct current, Professor Cole uses alternating currents whose frequencies vary over the wide range from 35 cycles a second to 16,000,000 cycles a second. This requires extensive and delicate apparatus, but produces results of increased significance.

Clark University
Neurophysiology

The amount of \$5,700, or as much thereof as may be necessary, has been appropriated to

Clark University for research in neurophysiology over a three-year period beginning with the academic year 1935-36. In the Department of Biology Clark University has built up a small but active group in the field of neurophysiology. The present grant will provide for the purchase of equipment and also for part of the salary of a research assistant to Professor Hudson Hoagland, the head of the department.

**University of California
Plant Genetics**

For the past twenty years Professor E. B. Babcock of the University of California has been working on the general problem of the evolution of the higher plants as exemplified in the genus *Crepis*, which has about 225 species. Nearly half of these species have been collected in the living condition and subjected to intensive investigation. There have been brought to bear the sciences of genetics, cytology, and comparative anatomy, in connection with the problems of hybridization and geographical distribution. More than fifty scientific papers have been published on the results of the *Crepis* investigations, dealing mostly with the cytology and genetics of species and interspecific hybrids. Focusing various lines of investigation on a single problem of this kind has forwarded our knowledge of the basic facts of evolution. Professor

Babcock now has need of additional trained assistants, and to make this possible the sum of \$12,000 has been appropriated to the University of California for use over a three-year period beginning July 1, 1935. This support aids in carrying forward a new program of research planned along the same general lines as the *Crepis* investigations.

It is proposed to concentrate all efforts on two large genera which are closely related to *Crepis*, namely *Prenanthes* and *Lactuca*. The principal object is to throw new light on the general problem of the evolution of the higher plants with reference especially to the nature of the genetic processes involved. As in the *Crepis* work, the method of attack involves the synthesis of analytic data derived from cytology, particularly a study of the chromosomes of as many species as possible.

**Roscoe B. Jackson Memorial Laboratory
Mammalian Genetics**

For a variety of technical and practical reasons the preponderant share of the known facts of genetics relates to fruit flies and to certain plants, particularly corn. A large amount of experimental work with small mammals, such as mice, must however be done as a necessary step in the general progress toward knowledge of the genetics of that most important mammal,

man. There are few places in the United States where broad research programs in mammalian genetics are carried on. An important center is the Roscoe B. Jackson Memorial Laboratory, at Bar Harbor, Maine, under the direction of Dr. C. C. Little.

The sum of \$35,000 has been appropriated to this laboratory toward expenses of research in mammalian genetics during the four-year period beginning January 1, 1936. The general budget of the laboratory was assisted during 1934 and during 1935 at levels of \$11,000 and \$12,500 respectively. The present grant provides \$12,500 for 1936, \$10,000 for 1937, \$7,500 for 1938, and \$5,000 for 1939. The program of the laboratory, with its important genetic material consisting of a stock of about 43,000 mice, some strains of which have been inbred for more than 100 generations, is, in brief, "long-term research on the genetics of physiological factors that influence continuing processes such as normal and abnormal growth."

**National Research Council
Research in Problems of Sex**

The National Research Council has received from the Foundation \$75,000 toward support during the year beginning July 1, 1936, of the work of the Committee for Research in Problems of Sex. A systematic research program of sex problems has been developed under the

leadership of this special committee of the National Research Council which to date has received financial support amounting to \$877,000. Of this sum \$507,000 was appropriated by the Bureau of Social Hygiene. The Rockefeller Foundation over the past five years has appropriated a total of \$370,000. This program of research combines several of the leading interests of the Foundation's program in the natural sciences, bringing a wide variety of precise techniques to bear on problems central to an understanding of the endocrinological, physiological, and behavioral aspects of sex phenomena. This committee has aided in the development of several strong centers of research on the endocrinological aspect of the general problem. The scientific and financial aspects of the work at these centers are now well stabilized and the committee is gradually relieving itself of responsibility for the centers and shifting the main interest of its own activity to the behavioral aspects of sex phenomena.

University of Rochester
Physiology of Reproduction

To the University of Rochester, for research on the physiology of reproduction under the direction of Dr. G. W. Corner during the three-year period beginning July 1, 1935, and ending June 30, 1938, there has been appropriated the

sum of \$9,900. Dr. Corner's activities are concentrated on a study of the oestrus cycle, using monkeys as the experimental animals. A colony of about thirty monkeys has been maintained, and experiments have furnished information on the normal histology of the reproductive cycle, the time of ovulation, the relation of ovulation to menstruation and other anatomically detectable correlations of the oestrus cycle. Work is continuing on two main lines: normal sex reproduction in the monkey, including the histology of ovary and uterus, and, secondly, the effects of the ovarian hormone.

Connecticut College for Women
Research in Plant Hormones

The sum of \$10,000 was appropriated to the Connecticut College for Women, New London, Connecticut, toward the cost of building a research greenhouse and dark constant temperature and humidity rooms for research in plant hormones. This equipment will make possible cooperative researches of which the aim is to study the functions of plant growth hormones affecting increase in tissue and organ size through cell division or cell enlargement, as well as plant hormone production and the distribution and activity of growth hormone as affected by various electrical potentials and conditions of radiation. The initial effort will be focused on the cell divi-

sion question. This will be followed by a study of the effects of specific radiations upon the production, movement, and activity of the hormones. The new greenhouse was completed in 1935. The research is directed by Dr. George S. Avery, chairman of the Department of Botany.

Endocrinology

University of California

Dr. Evans

The University of California has received an appropriation of \$20,000 for the study of the chemical aspects of vitamins and hormones by Dr. Herbert M. Evans during the year beginning July 1, 1935. For the past six years, Dr. Evans' work has received Foundation funds to the amount of \$20,000 a year. Dr. Evans and his associates have been primarily concerned, during the past years of support, with the sex cycle in the rat, a new test for vitamin A, the anti-sterility vitamin E, and the vitamin F which is related to fat metabolism. They have recently succeeded in crystallizing vitamin G and two potent derivatives of vitamin E. In their work on internal secretions they contributed in a major way to the discovery of the growth hormone of the anterior hypophysis and the purification of the lactogenic hormone from the anterior pituitary; and they have cleared up many im-

portant questions concerning the interrelationship of the various hormones. Attention is now concentrated on the problem of purifying the gonadotropic hormones and on the relation of the anterior pituitary to metabolism. In general, Dr. Evans' work has embraced both endocrinology and the biochemistry of the vitamins.

Ohio State University
Research in Endocrinology

Toward expenses of research during the period from January 1, 1936, to June 30, 1937, under the direction of Professor Frank A. Hartman on the chemical, physiological, and clinical aspects of the hormone of the adrenal cortex, the sum of \$18,000 has been appropriated to Ohio State University. The secretions of the adrenal cortex, which is part of the small endocrine gland located near the kidneys, play a significant rôle in various diseases, in carbohydrate metabolism, in the salt and water balance of the body, and in a variety of sex phenomena. Professor Hartman has for many years carried on extensive researches in the endocrinology of the adrenal glands. In 1927 he was one of the discoverers of the hormone cortin from the adrenals, which has already proved to be of striking importance in the treatment of Addison's disease and in the treatment of surgical shock, and of considerable interest in relation to functions of the nervous

system. In his present work the preparation of cortin and cortilactin is continued in order to provide material for animal and human experiments and for the purification and the study of the nature of these substances.

University of Paris
Laboratory of Histology

There has been appropriated to the University of Paris toward support of researches in endocrinology and vitamins in the Laboratory of Histology under the direction of Professor C. Champy during the three-year period from January 1, 1936, to December 31, 1938, the amount of \$8,400. This histological laboratory for animal experimentation in sex studies and in genetics is at Gentilly, near Paris, and adjoins the university student quarters. Its interests include genetics, endocrinology, radiation, and nutrition. Stress has been placed on two investigations: (1) a study, from the experimental side, of secondary sexual characteristics, using a variety of animals and involving experiments with hormones in relation to appearance of secondary sex characteristics; and (2) a study of the occurrence and rôle of vitamin C in endocrine organs. There has been developed a method for determining the quantity of this vitamin in the different tissues of the body, and further work is under way on

the absorption and elimination of vitamin C under varying physiological conditions, and upon the relation of chlorophyl and carotin to ascorbic acid.

University of Virginia
Endocrinology

The University of Virginia has received an appropriation of \$15,000 for researches in endocrinology under the direction of Dr. S. W. Britton of the Department of Physiology during the three-year period beginning January 1, 1936. Dr. Britton and his co-workers are devoting the energies of the department in the next three years to a study of adrenal functions, with particular reference to the preparation of cortical extracts; to studies of the interrelationships of the adrenal and sex glands; and to observations on carbohydrate metabolism and salt and water balance in relation to cortico-adrenal functions. In addition to the ordinary laboratory animals, two very important ancient forms, the opossum and the marmot, will be used in this study.

**Support to Groups Working on Several Phases of
the Natural Science Program**

Leland Stanford, Jr., University
Chemophysical Biology

To Leland Stanford, Jr., University, for researches in chemophysical biology under the direction of Professor C. V. Taylor, have been

appropriated \$12,500 for use during the year beginning July 1, 1935, and \$37,500 for use during the three-year period beginning July 1, 1936. At Leland Stanford there has been developed an exceptionally effective unit for the chemophysical attack upon important biological problems. This group does work on bioelectric phenomena, on ultra-violet irradiation, on developmental mechanics, on bacterial chemistry and pigments, and on cell metabolism and development. The individual interests of the group are sufficiently distinct to preclude undue overlapping, yet the training, common objectives, and compatibility of the men are such as to insure effective collaborative activity. A number of air-conditioned laboratories particularly suited to the work in hand have been provided. Teaching schedules are planned to permit frequent exchanges of staff investigators between the campus and the Hopkins Marine Station, thereby fitting together the work and the interests of both centers. Professor C. V. Taylor is professor of biology at the university and associate director of the Hopkins Marine Station at Pacific Grove.

University of Chicago
Biology

The University of Chicago has received from The Rockefeller Foundation \$150,000 for bio-

logical research during the three-year period July 1, 1935, to June 30, 1938. The money now voted will aid in the research activities of approximately twenty members of the Chicago faculty working in various fundamental fields of biology. The support given is at the level of \$50,000 a year, \$30,000 representing a continuation of annual grants made by the Foundation since 1929 for work under Professor Frank R. Lillie and Professor F. C. Koch, and \$20,000 a continuation of grants formerly made by the National Research Council's Committee for Research in Problems of Sex.

The major portion of the grant is for important research work in the preclinical departments, for basic studies in biochemistry and endocrinology, for work on immunity under Professor W. H. Taliaferro, and for sex research activities under the direction of Dean Lillie and Professor Carl R. Moore. Other important researches in physiology, neurology, genetics, and bacteriology are supported in part from the appropriation.

**Long Island Biological Association
Cold Spring Harbor Laboratory**

The Foundation has granted \$14,000 to the Long Island Biological Association toward the support of symposia to be held by the Cold Spring Harbor Laboratory in the summers of

1936 and 1937. This support provides traveling and living expenses for the participants, clerical and other administrative expenses, and costs of publication. The first of these summer symposia was organized in 1933. A group of recognized authorities is invited to spend from two weeks to a month in residence at the laboratory. Other scientists attend and take part in the discussions. During the month of the symposium two sessions are held daily; at each of these a single paper is presented, with ample time, often two or three hours, for general discussion by the entire group. The discussion is recorded stenographically, and a corrected digest is published along with the formal papers. The first symposium discussed "The Potential Difference at Interfaces and its Bearing upon Biological Phenomena"; the second was devoted to general problems of growth; the third was concerned with problems of photochemistry and of photosynthesis; and the fourth and fifth in 1936 and 1937 will probably deal with excitation phenomena and with enzymes, hormones, and vitamins.

Former Program

Woods Hole Oceanographic Institution

On February 13, 1930, The Rockefeller Foundation appropriated \$1,000,000 to the Woods

Hole Oceanographic Institution for building and other construction, boats, equipment, and endowment of upkeep, and another \$1,000,000 in partial endowment of the scientific work of this institution. An additional \$500,000 was appropriated for current expenses over ten years terminating March 4, 1940, at the rate of \$50,000 annually. In 1935 a further sum of \$1,000,000 was appropriated to the Woods Hole Oceanographic Institution for endowment, upon condition that the institution agree to cancel, as of date of such contribution to endowment, the Foundation's present appropriation to current maintenance. This condition was met. The contribution to endowment was made on October 21, 1935.

The principal functions of the Woods Hole Oceanographic Institution are to furnish the physical facilities for oceanographic work at sea, to maintain the necessary laboratory headquarters for this purpose, to stimulate interest and recruit trained personnel, to cooperate with other institutions, and to carry on an active program of oceanographic research. Its purpose is to encourage and carry on the study of all branches of oceanography. To this end it maintains at Woods Hole, Massachusetts, a marine laboratory, which serves as the headquarters of its regular staff. The location of the laboratory

was based on the combined advantages of close proximity to the Marine Biological Laboratory and the Laboratory of the United States Bureau of Fisheries, and of the exceptional opportunities for illustrative investigations in the major divisions of oceanography that are afforded by the neighboring waters. Woods Hole is so situated that almost all oceanographic problems can be attacked with profit. The institution owes its unique position among research centers to its excellent marine equipment, which includes two sea-going vessels for work both near shore and in the open ocean. The laboratory provides opportunity for a limited number of graduate students to obtain training in the field methods of oceanography during the summer months, and under the direction of members of the staff carries on a regular program of oceanographic investigation in the fields of physics, chemistry, geology, and biology.

Biological Abstracts

A terminal grant of \$40,000 was made to the National Research Council for expenses of editing and indexing the international *Biological Abstracts*. The total of this appropriation and a former one made in 1934 are to be available during the period ending December 31, 1937. During the present and former years the Foun-

dation's appropriations for *Biological Abstracts* have amounted, in all, to \$805,000.

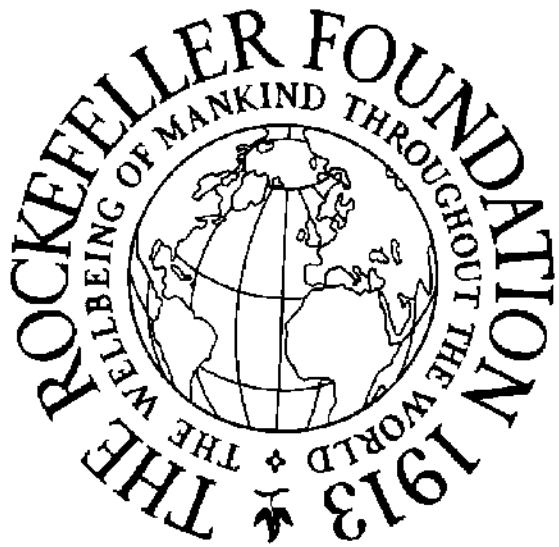
American Institute of Physics

The sum of \$6,000 was appropriated to the American Institute of Physics for underwriting its plans for financing scientific publication over a period of three years beginning July 1, 1935. By means of this appropriation the American Institute of Physics is enabled to carry to completion its plans for inducing the sponsors of research to accept total or partial responsibility for costs of publication as a legitimate part of the costs of research.

**Harvard University
Geophysics**

Harvard University has received a grant of \$40,000 toward expenses of researches in geophysics during the four-year period beginning October 1, 1936. An appropriation of \$50,000 was made for this same purpose in 1931 to provide for expenditures during a five-year period closing September 30, 1936. This former gift was on a conditional basis and a Harvard committee raised from private donors over \$50,000 to match the original grant.

The program at Harvard in geophysics concerns chiefly the experimental determination of the properties of natural rocks and minerals at con-



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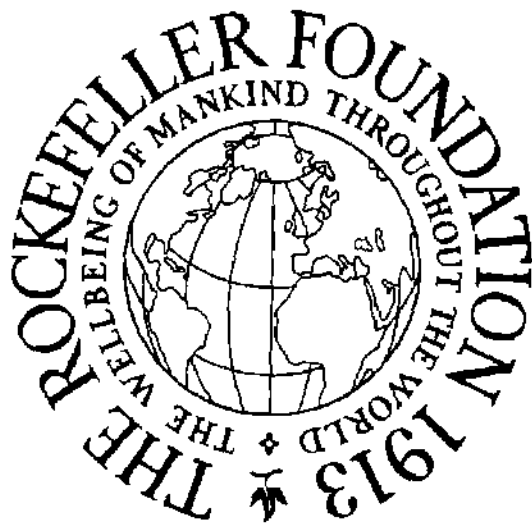
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Exterior and interior views of the portable cathode ray oscillograph used at Washington University in investigations of nerve impulses and related problems in nerve physiology.

ditions of extreme pressure and high temperature, such as exist deep in the earth. It has been necessary to spend several years and considerable sums of money in the development of specialized and elaborate apparatus and in the training of staff. The program has produced results of high importance. The Foundation is protecting its former investment and safeguarding the future of this program by making a final grant.

**Massachusetts Institute of Technology
Differential Analyzer**

A project outside the concentrated program of the division, but supported because of its unique interest and importance to the whole broad field of quantitative science, is the design and development at the Massachusetts Institute of Technology of an improved differential analyzer. Toward the expenses of this undertaking during the year beginning July 1, 1935, an appropriation of \$10,000 was made. The differential analyzer is a device for the mechanical solution of differential equations. It bears much the same relation to scientific analysis that a computing machine does to arithmetical work. The present differential analyzer was produced at the Massachusetts Institute of Technology after a development extending over eight years and involving three successive models. The proposed new analyzer will be a step forward in three aspects:



Photograph Excised Here

Differential analyzer developed over a period of eight years at the Massachusetts Institute of Technology. This is a machine for the solution of differential equations and bears much the same relation to scientific analysis that the computing machine has to arithmetical work.



Photograph Excised Here

Sketch showing the general layout of the improved differential analyzer planned for installation at the institute by 1939. The Foundation has made a grant toward the designing and development of the new model. Successful production of this machine will further analysis in fields where it is now prohibitively laborious.

(1) improved precision; (2) higher speed of operation; (3) increased scope of applicability. If for the purposes of research it is necessary to obtain twenty solutions of a certain differential equation these solutions might easily require several months' work by a mathematician with ordinary computing aids, two days' work with the present machine, and possibly two hours' work with the proposed new model. The present machine has been in continuous use on a wide range of problems for four years. It has been reproduced at the University of Manchester, England, and the University of Pennsylvania has recently put a unit into operation. Another unit is under construction at the Astrophysical Institute at Osic. These machines are used in studies on cosmic rays, geophysics, seismology, electrical machinery, acoustics, astrophysics, and radiation.

Fellowships and Grants in Aid

During 1935 the Foundation continued to contribute, although on a lower level than in previous years, to the fellowship programs in the biological and the physical sciences administered by the National Research Council. An appropriation of \$75,000 was made for the support of fellowships in these two fields during the year 1936-37. During 1935 there were sixty-three persons working under these fellowships in the physical

sciences and sixty-two in the biological sciences. The council also made fifty-two grants in aid, twenty-six in the physical and twenty-six in the biological sciences, from an appropriation made in 1934 by the Foundation to cover the years 1935-37.

Eighty-three fellowships in the natural sciences, including thirty-two financed by the General Education Board, were administered directly by the Foundation during 1935. Fifty-five of these fellowships were in experimental biology, twenty-one were in closely allied fields chosen for their service to experimental biology, and seven were foreign fellowships in the physical sciences granted to Chinese students in termination of a former program. The following table shows the distribution of these fellowships by country of origin.

FELLOWSHIPS IN THE NATURAL SCIENCES ADMINISTERED BY THE ROCKEFELLER FOUNDATION DURING 1935

Country of Origin	Number of Fellows
China.....	10
Czechoslovakia.....	3
Denmark.....	5
England.....	4
France.....	3
Germany.....	7
Greece.....	1
Hungary.....	1
Italy.....	2
Poland.....	7
Scotland.....	1
Sweden.....	5
Switzerland.....	2
United States.....	32
Totals.....	83

The table on page 178 shows the distribution of these fellows by country of origin and chief place of study.

FELLOWSHIPS IN THE NATURAL SCIENCES ADMINISTERED BY THE ROCKEFELLER FOUNDATION DURING 1935 ARRANGED ACCORDING TO COUNTRY OF ORIGIN AND CHIEF PLACE OF STUDY

Country of Origin	Austria	Denmark	England	France	Germany	Irish Free State	Netherlands	Sweden	Switzerland	United States	TOTAL
China.....
Czechoslovakia.....
Denmark.....	2	..	..	..	..	..	..	..	..
England.....
France.....	..	1	..	..	..	..	..	..	..	..	..
Germany.....
Greece.....
Hungary.....	1	..	..	..	..	..	..	..	..
Italy.....
Poland.....	1	..	4	..	..	..	..	..	..	..	..
Scotland.....
Sweden.....	1	1	..	..	..	..	..	..	..
Switzerland.....	..	1	..	..	..	..	..	..	..	..	..
United States.....	9(1*)	..	1	1	2	2	1	15	..
Totals.....	1	2	18(1*)	1	1	1	2	8	1	48	83

* Studied also in Denmark

Two appropriations were made during the year to continue the financing of such natural science fellowships, one of \$100,000 to be utilized for the work of Europeans in the specific field of experimental biology during the year 1936, and one of \$7,500 for completing the work of Chinese fellows working during 1935 in foreign countries.

Grants in aid were made during 1935 to individual scientists engaged in research along lines of Foundation interests. While such grants are always relatively small in amount, it frequently happens that the results accomplished through the opportunities they afford are of far-reaching significance. For grants in aid in the specific field of experimental biology the sum of \$140,000 was appropriated for the year 1936.

The following are typical of the larger grants in aid made during 1935: \$7,500 to the Department of Medical Chemistry of the University of Edinburgh for the investigations of Professor G. Barger on the chemical constitution of vitamin B-1; \$7,500 to the University of Utrecht for the cooperative research of Professor L. S. Ornstein of that institution and Professor A. J. Kluyver of the Delft Laboratory of Microbiology; \$5,600 to the University of Cambridge for studies under Professor David Keilin in cellular metabolism and the mechanism of intercellular respiration; \$5,000 to the University of Illinois for the separa-

tion and investigation of a hitherto unrecognized protein component essential to life, under Professor W. C. Rose; \$4,900 to continue the spectroscopic analysis of blood serum of anemic children, under Professor K. D. Blackfan of the Harvard Medical School and Professor G. R. Harrison of the Massachusetts Institute of Technology; \$4,250 to the University of California for the study of the deposition of fixed minerals in the living cell, by the microincineration method, under Professor T. H. Goodspeed; \$3,000 to Duke University for research by Professor D. T. Smith in connection with the identification of the pellagra factor and the development of a diet containing the antipellagra factor; \$3,000 to McGill University to provide controlled temperature chambers and other facilities for the development of the Department of Genetics; \$3,000 to Harvard University for the investigations of Professor Walter Bauer on the biochemistry of the synovial fluid.

During 1935 the Foundation also made three appropriations totaling \$185,000 designated as a special fund for grants in aid for the establishment, in countries other than their own, of eminent European scholars working in fields of the Foundation's interests, who, because of disturbed political conditions, have been forced to leave their own countries. Of this fund, \$14,675 was

used during 1935 for commitments in the natural sciences.

Summary of Appropriations Made in 1935

PROGRAM OF SPECIFIC CONCENTRATION: EXPERIMENTAL BIOLOGY

Application of Physical and Chemical Techniques to Biological Problems

Columbia University, New York City. Research in the biological effects of heavy hydrogen.	\$12,500
Emma Pendleton Bradley Home, East Providence, Rhode Island. Special research in electroencephalography.	46,500
George Washington University, Washington, D. C. Research in biochemistry.	25,500
McGill University, Montreal, Canada. Research in the application of spectroscopic methods to biological and medical problems.	24,000
Massachusetts General Hospital, Boston. Research on the parathyroid hormone and calcium and phosphorus metabolism.	10,000
National Research Council, Washington, D.C. Committee on Effects of Radiation on Living Organisms.	75,000
Technical Institute, Graz, Austria. Biophysical chemistry.	5,800
University of Chicago, Illinois. Research in the application of spectroscopic methods to biological problems.	14,000
University of Copenhagen, Denmark. Special researches in the application of methods and techniques of physics, chemistry, and mathematics to biological problems.	54,000
University of Leeds, England. Research in the x-ray analysis of biological tissues.	• 17,750
University of Michigan, Ann Arbor. Research in the applications of spectroscopic methods to biological and medical problems.	14,000
University of Oxford, England. Application of mathematical analyses to biological problems.	12,750
University of Rochester, New York. Research on the biological effects of heat.	6,400
University of Stockholm, Sweden. Cooperative research in biophysics, chemical biology, and cell physiology.	9,850

University of Uppsala, Sweden. Research on the physical-chemical properties of proteins and other heavy molecules	\$55,000
University of Utrecht, Netherlands. Research in spectroscopic biology	16,800
	<hr/>
	\$399,850
Physiology and Genetics	
California Institute of Technology, Pasadena. Research in general physiology	\$40,000
Clark University, Worcester, Massachusetts. Research in neurophysiology	5,700
Columbia University, New York City. Research on the electrical characteristics of cells	7,500
Connecticut College for Women, New London. Building a research greenhouse and dark constant temperature and humidity rooms for research in plant hormones	10,000
National Research Council, Washington, D.C. Committee for Research in Problems of Sex	75,000
New York University, New York City. Researches in cell physiology	10,500
Roscoe B. Jackson Memorial Laboratory, Bar Harbor, Maine. Research in mammalian genetics	35,000
State University of Iowa, Iowa City. Special research on the physiology of the normal cell	40,000
University of California, Berkeley. Research in plant genetics	12,000
University of Cambridge. Molteno Institute of Biology and Parasitology. Research in cellular physiology	30,600
University of Michigan, Ann Arbor. Research on the physiology of respiration	25,000
University of Rochester, New York. Research on the physiology of reproduction	9,900
Washington University, St. Louis, Missouri. Special research in nerve physiology	16,500
	<hr/>
	\$317,700
Endocrinology	
Ohio State University, Columbus. Research on the chemical, physiological, and clinical aspects of the hormone of the adrenal cortex	\$18,000
University of California, San Francisco. Study of the chemical aspects of vitamins and hormones	20,000
University of Paris, France. Laboratory of Histology. Researches in endocrinology and vitamins	8,400
University of Virginia, Charlottesville. Research in endocrinology	15,000
	<hr/>
	\$61,400

Support to Groups Working on Several Phases of Natural Science Program	
Leland Stanford, Jr., University, Palo Alto, California. Researches in chemophysical biology.....	\$50,000
Long Island Biological Association, Cold Spring Harbor, New York. Support of symposia.....	14,000
University of Chicago, Illinois. Biological research....	150,000
	<hr/>
	\$214,000
FORMER PROGRAM	
American Institute of Physics, New York City. Support of publication.....	\$6,000
Harvard University, Cambridge, Massachusetts. Research in geophysics.....	40,000
Massachusetts Institute of Technology, Cambridge. Design and development of an improved differential analyzer.....	10,000
National Research Council, Washington, D.C. Expenses of editing and indexing <i>Biological Abstracts</i>	40,000
Woods Hole Oceanographic Institution, Massachusetts. Endowment.....	1,000,000
	<hr/>
	\$1,096,000
FELLOWSHIPS AND GRANTS IN AID	
Fellowships in experimental biology, Europe.....	\$100,000
Completion of fellowships for Chinese fellows working in foreign countries during 1935.....	7,500
Grants in aid in experimental biology.....	140,000
National Research Council, Washington, D.C. Fellowships in the natural sciences.....	75,000
Special research aid fund for European scholars.....	14,675
	<hr/>
	\$337,175
Total Appropriations.....	\$2,426,125

1935 Payments

Alaska Agricultural College and School of Mines, Fairbanks. Study of the aurora.....	\$8,542.73
American Institute of Physics, New York City. Support of publication.....	2,511.91
American Mathematical Society, New York City. Support of publication.....	4,500.00
Amherst College, Massachusetts. Research in genetics and experimental embryology.....	6,660.12
California Institute of Technology, Pasadena. Research in biology.....	25,000.00
Research in chemistry.....	10,000.00
Research in general physiology.....	10,000.00

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China Medical Board, Inc., New York City. Peiping Union Medical College, China. Human paleontological research in Asia	\$26,718.22
Clark University, Worcester, Massachusetts. Research in neurophysiology	1,500.00
Columbia University, New York City. Research on pituitary-gonad interrelationship	2,498.71
Research on the biological effects of heavy hydrogen	16,059.16
Connecticut College for Women, New London. Construction of a research greenhouse and dark constant temperature and humidity rooms for research in plant hormones	10,000.00
Cornell University, Ithaca, New York. Conference of workers in the biological sciences	807.46
Emma Pendleton Bradley Home, East Providence, Rhode Island. Special research in electroencephalography	7,500.00
Fellowships in the natural sciences administered by The Rockefeller Foundation	78,071.95
Fukien Christian University, Foochow, China. Maintenance of science departments	2,500.00
George Washington University, Washington, D. C. Research in biochemistry	4,500.00
Grants in aid of research in the natural sciences, in the fields of vital processes, and the earth sciences	71,474.89
Grants in aid in the natural sciences, Europe	38,911.83
Hannover Polytechnic School, Germany. Scientific equipment for research in inorganic chemistry	4,759.71
Harvard Medical School, Boston, Massachusetts. Research on the spectroscopic analysis of the blood serum of anemic children	1,500.00
Harvard University, Cambridge, Massachusetts. Chemical research to determine the heats of organic reactions	8,000.00
Support of geophysical research	5,000.00
International Commission for the Polar Year 1932-1933, Copenhagen, Denmark. Equipment and expenses	5,425.00
Iowa State College of Agriculture and Mechanic Arts, Ames. General research fund in the natural sciences	3,750.00
Johns Hopkins University, Baltimore, Maryland. Support of biological research	58,750.00
Jungfrauoch Scientific Station, Switzerland. Construction and equipment of buildings	3,952.21
Leland Stanford, Jr., University, Palo Alto, California. Research in chemophysical biology	9,250.00
Lingnan University, Canton, China. Maintenance of science departments	10,000.00

Long Island Biological Association, Cold Spring Harbor, New York.	
Support of a symposium on quantitative biology	\$7,000.00
Work of the Biological Laboratory	12,000.00
McGill University, Montreal, Canada. Research in the application of spectroscopic methods to biological and medical problems	6,500.00
Massachusetts General Hospital, Boston. Research on the parathyroid hormone and calcium and phosphorus metabolism	2,000.00
Massachusetts Institute of Technology, Cambridge.	
Design and development of an improved differential analyzer	5,000.00
General research fund for physics, chemistry, geology, and biology	20,000.00
Research on the spectroscopic analysis of the blood serum of anemic children	2,000.00
National Academy of Sciences, Washington, D. C. General expenses of the National Research Council . . .	16,000.00
National Research Council, Washington, D.C.	
Committee for Research in Problems of Sex	62,629.18
Committee on Effects of Radiation on Living Organisms	4,005.26
Conferences	3,000.00
Fellowships in the physical and biological sciences . .	141,208.12
Publication of <i>Annual Tables of Constants and Numerical Data</i>	2,000.00
Publication of <i>Biological Abstracts</i>	76,302.83
Research aid fund	22,335.61
Ohio State University, Columbus. Research in endocrinology	9,000.00
Peiping Union Medical College, China. Human paleontological research in Asia	1,383.92
Research and developmental aid in China	3,376.39
Roscoe B. Jackson Memorial Laboratory, Bar Harbor, Maine. Research in mammalian genetics	12,500.00
Royal Caroline Institute, Stockholm, Sweden. Research in biochemistry	5,056.50
Special research aid fund for European scholars	14,675.00
State University of Iowa, Iowa City. Support of investigations on the physiology of the normal cell	10,000.00
University of California, Berkeley. Research in plant genetics	2,000.00
University of California, Medical School, San Francisco. Study of chemical aspects of vitamins and hormones	20,000.00
University of Chicago, Illinois.	
Research in application of spectroscopic methods to biological problems	9,937.50

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Research in the biological sciences.....	\$50,000.00
University of Copenhagen, Denmark. Special research in application of methods of physics, chemistry, and mathematics to biological problems.....	5,718.95
University of Geneva, Switzerland. Station of Experimental Zoology. Support.....	6,287.17
University of Michigan, Ann Arbor.	
Research in the application of spectroscopic methods to biological and medical problems.....	8,500.00
Research in the physiology of respiration.....	5,000.00
University of North Carolina, Chapel Hill. Research in the natural sciences.....	2,500.00
University of Oslo, Norway. Institute of Theoretical Astrophysics. Construction and equipment.....	6,960.48
University of Rochester, New York. School of Medicine and Dentistry. Research in the physiology of reproduction.....	2,373.59
University of Stockholm, Sweden. To provide increased facilities for investigations in zoophysiology.....	838.30
University of Szeged, Hungary.	
Maintenance of departments of natural sciences.....	798.00
Scientific equipment for departments of natural sciences.....	3,048.45
University of Uppsala, Sweden. Institute of Physical Chemistry.	
Additional research assistance.....	882.76
Research on the physical-chemical properties of proteins and other heavy molecules.....	6,301.33
University of Utrecht, Netherlands. Institute of Comparative Physiology. Construction of building.....	57,887.50
University of Warsaw, Poland. Institute of Physics. Research apparatus.....	1,549.02
University of Washington, Seattle. Building and equipment of laboratory and boat for oceanographic work; maintenance of boat.....	4,729.58
University of Wisconsin, Madison. Researches in endocrinology.....	2,000.00
Washington University, St. Louis, Missouri.	
General research fund.....	10,000.00
Research in neurophysiology.....	14,700.00
Woods Hole Oceanographic Institution, Massachusetts.	
Current expenses.....	40,000.00
Endowment.....	1,000,000.00
Yale University, New Haven, Connecticut. Institute of Human Relations. Maintenance of an anthropoid experiment station, Orange Park, Florida.....	38,729.03
Zoological Station of Naples, Italy. Current expenses....	8,079.75
Total Payments.....	<u>\$2,179,938.12</u>

**THE NATURAL SCIENCES
STAFF DURING 1935**

DIRECTOR

Warren Weaver

ASSISTANT DIRECTORS

Frank Blair Hanson

Harry M. Miller, Jr.

W. E. Tisdale

THE SOCIAL SCIENCES

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THE SOCIAL SCIENCES

In 1935 the Foundation program in the social sciences was reorganized along new lines with emphasis upon certain definite fields of interest. During the twelve-year period ending in 1935 the former Laura Spelman Rockefeller Memorial and, subsequently, the Foundation gave major support to institutional centers in the United States and abroad having programs of general research and advanced training in the social sciences. Financial aid was provided to enable the scientist to have direct contact with the situation he was studying, to give him relief from the routine responsibilities of academic life, to supply clerical assistance and leisure for publication. The improvement of personnel in the field of the social sciences was promoted by graduate fellowships and by grants to universities for the development of basic instruction.

During the past decade notable changes have taken place in institutional centers of research in the social sciences. The universities now recognize the importance of realistic training and research (in the social sciences) and are as-

suming the responsibility for providing them. The social scientist is relied upon to an increasing extent in American public life; his opportunities to participate in the handling of complex contemporary problems are numerous, and sometimes too insistently presented by laymen who are over sanguine as to the results to be achieved by the application of scientific knowledge. Continued study in the university and in the community outside should in time enable the social scientist to meet these expectations. //

The Foundation is bringing to a close its financial aid to general institutional research in the social sciences. Certain grants were made in 1935, and others will be made in 1936, to terminate Foundation financing of institutional research programs by the end of 1940. According to recent decision, the Foundation will for the present use the resources available for the program in the social sciences to develop specific areas of activity which hold possibilities of aiding in the solution of pressing social problems. Three areas of study have thus far been undertaken—social security, international relations, and public administration. The work now under way in each of these areas will be described at some length following a résumé of the enterprises receiving Foundation support under the general program.

A. General Program**1. Institutional Centers for Research and Advanced Training**

The objective of the Foundation's support of institutional centers was to stimulate general research and training in the social sciences at universities having national or regional importance. The grants usually provided funds for research placed at the disposal of a special committee which the university constituted for the express purpose of planning and initiating projects. In 1935 the institutions aided were the following:

*** INSTITUTIONAL CENTERS RECEIVING SUPPORT DURING 1935
UNDER PREVIOUS APPROPRIATIONS ‡**

United States

Brookings Institution, Washington, D.C. Research program in the social sciences.....	\$37,500*
Columbia University, New York City. Council for Research in the Social Sciences.....	70,000†
Harvard University, Cambridge, Massachusetts. Research fund for social sciences.....	75,000†
Leland Stanford, Jr., University, Palo Alto, California. Research fund for social sciences.....	35,000†
University of Chicago, Illinois	
Division of the Social Sciences. Research facilities and assistance.....	75,000†
Division of the Social Sciences. Endowment for development.....	500,000‡
Purchase of basic documents in the social sciences...	100,000‡
Faculty appointment in the social sciences (Interest on endowment grant).....	4,475
University of North Carolina, Chapel Hill. Institute for Research in the Social Sciences.....	30,000||
University of Texas, Austin. Research fund for the social sciences.....	25,000†
University of Virginia, Charlottesville. Institute for Research in the Social Sciences.....	10,000†
Canada	
McGill University, Montreal. Development of research in the social sciences.....	25,000†

Europe

Institute of Economics and History, Copenhagen, Denmark. General budget.....	\$6,000
International Institute of Public Law, Paris, France. Budget.....	3,971
London School of Economics and Political Science, University of London, England	
Improving facilities for research and postgraduate teaching.....	30,000†
Land.....	150,000‡
Library. Development.....	50,000‡
Research in the social sciences.....	17,000||
University of Oslo, Norway. Institute of Economics. Research program.....	10,000
University of Oxford, England. Development of program in the social sciences.....	£5,000†
University of Paris, France. General research and advanced graduate training in the social sciences....	Frs. 300,000||
University of Stockholm, Sweden	
Development of social science library.....	\$4,000
General research program in the social sciences....	9,000†
Special faculty appointment in the social sciences..	3,750||

Near East

American University of Beirut, Republic of Lebanon. Program in the social sciences.....	16,000
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§ In this table and in those that follow the total amount available for the year is shown. Inasmuch as all or a part of many grants was made on a matching basis, the individual items do not necessarily represent the amounts actually received by the beneficiaries during the year.

* For first half of year 1935; 1935 appropriation provides for second half.

† Academic year 1935-36.

‡ Total amount of appropriation; available as needed to date of termination of grant.

|| Academic year 1934-35.

Grants Made in 1935 to Terminate Foundation Support of Institutional Research Programs

Seven appropriations were made in 1935 to institutions which had previously received Foundation aid for general research in the social sciences. In each instance the grant was stated to

be final and the terms of payment provided for a gradual diminution of Foundation support over a period of years. In no case did the term of the grant extend beyond 1940. Terminating grants in the amounts specified were made to the following institutions:

London School of Economics and Political Science, England.	\$45,000
University of California, Berkeley.....	75,000
University of North Carolina, Chapel Hill.....	75,000
American University of Beirut, Republic of Lebanon.....	45,000
Rumanian Institute of Social Sciences, Bucharest.....	9,000
Harvard University, Cambridge, Massachusetts.....	150,000
University of Chicago, Illinois.....	150,000

Additional Grants for Institutional Research

The Brookings Institution is listed in the table on page 195 as receiving \$37,500 in 1935 under a former grant. In April 1935 a grant of \$75,000 was made toward support of the general work of the **Brookings Institution** during the year July 1, 1935, to June 30, 1936. In view of the relevance of the institution's research programs to the Foundation's specific areas of interest—social security, international relations, and public administration—continuance of support at the level of \$75,000 was approved by the trustees for an additional year.

At the time that grants were made to terminate support of general research, which had been given by the Foundation over an extended period to a number of institutions, an initial

grant was made to the **University of Paris** to aid in its establishment as a European center of realistic research in the social sciences. This grant had been under consideration even before the Foundation began its program in the social sciences. Negotiations begun in 1926 with representatives of the former Laura Spelman Rockefeller Memorial, and continued after 1929 with officers of the Foundation, finally resulted in 1934 in a formal request from the University of Paris for an appropriation to further research in the social sciences, for which a base had been carefully laid. In view of the protracted negotiations, the relatively retarded development of realistic research in the social sciences in France, and the importance of the projected program, the trustees of the Foundation acted favorably on this request and made \$25,000 annually available over a period of five years.

The program receiving support at the University of Paris is an interesting one. An advisory council has been created including the deans of the faculties of laws and letters, the directors of several university institutes, and the representatives of such institutions as the College of France, the Institute of Economic and Social Research, and the Center for the Study of Foreign Relations. The program of projects now

actually in progress undertakes the study of important current questions, such as, technical progress and mechanization of industry in relation to industrial and labor organization and to the psychology of the laboring class, the problems of nationalism and international relations, analysis of processes of cultural change among native French populations, the position of women, the organization of consumers.

The Foundation grant provides \$25,000 a year to the University of Paris for five years.

A grant of \$7,500 was made in 1935 to the University of Stockholm to permit the part-time employment of an American sociologist for a period of two years. A program of sociological studies is well under way in Sweden involving a cooperative arrangement with an American scientist who is training a group of Swedish graduate students to undertake concrete investigations.

SUMMARY OF APPROPRIATIONS TO INSTITUTIONAL CENTERS
IN 1935

United States

Brookings Institution, Washington, D.C. Research program in the social sciences.....	\$75,000
Harvard University, Cambridge, Massachusetts. General research fund in the social sciences.....	150,000
University of California, Berkeley. Research program of the Institute of the Social Sciences.....	75,000
University of Chicago, Illinois. Research facilities, Division of the Social Sciences.....	150,000
University of North Carolina, Chapel Hill. Institute for Research in the Social Sciences.....	75,000

Europe

London School of Economics and Political Science, University of London, England. General research fund in the social sciences.....	\$45,000
Rumanian Institute of Social Sciences, Bucharest. Administration and research program.....	9,000
University of Paris, France. Development of research program in the social sciences.....	125,000
University of Stockholm, Sweden. Special faculty appointment.....	7,500

Near East

American University of Beirut, Republic of Lebanon. Research in the social sciences.....	45,000
--	--------

Total.....	<u>\$756,500</u>
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2. Fellowships

The Foundation over a number of years supported a fellowship program designed to furnish opportunities for promising young scholars in the several social science disciplines to broaden their experience and to develop capacity for making useful contributions to research. In general, eligibility was restricted to candidates already holding the Ph.D. degree or its equivalent. The program was administered partly by the Foundation staff and partly by the Social Science Research Council, with jurisdiction over candidates from the United States and Canada delegated to the latter body.

Within the year covered by this report a decision was reached to narrow the scope of that part of the program directly administered by Foundation officers. Instead of continuing to offer fellowships to candidates from all the spe-

cialized branches of social science, it was determined that the Foundation-administered program should be linked to the fields to which active support was being given in designated areas of concentration. Specific appropriations were made for fellowships open to specialists in the fields of international relations, social security, and public administration, with the understanding that these fellowships would be available to American candidates as well as to those of other countries. In order to assure the development of a fellowship program designed to forward as usefully as possible work in the designated areas, a considerable degree of flexibility was afforded in eligibility requirements. Although it was determined to discontinue the general program of Foundation-administered fellowships in favor of the more closely focused procedure outlined above, an appropriation was made to allow for its gradual liquidation over the years 1936 and 1937. This will permit the awarding of a normal quota of extensions for current fellowship incumbents, as well as the accommodation, through new awards under general program, of cases pending at the time the new definition was adopted.

Support to the general fellowship program of the **Social Science Research Council** was continued without change of definition. The coun-

cil's fellowships are open to postdoctoral candidates of the United States and Canada in any of the social science disciplines, under eligibility rules determined by the council.

Thus the year 1935 marked the initiation of a period of transition during which the liquidation of an important part of the Foundation's former fellowship procedure was begun, and the groundwork for a new policy was charted but only partially developed. The specific appropriations made during the year for the several purposes outlined follow:

APPROPRIATIONS MADE IN 1935 FOR FELLOWSHIPS IN
THE SOCIAL SCIENCES

Fellowships in fields of social security, international relations, and public administration (for use in 1935).....	\$75,000
Fellowships in fields of social security, international relations, and public administration (for use in 1936).....	100,000
Fellowships in the social sciences, termination (period ending 1937).....	85,000
Social Science Research Council, New York City. Fellowships in the social sciences (1936-37).....	50,000
	<hr/>
Total.....	\$310,000

In 1935 the Foundation made thirty-five new fellowship appointments, including those under both old and new programs, and the Social Science Research Council made thirteen new appointments. A summary of new appointments by both agencies, from 1924 through 1935, is presented on page 205.

Besides making thirteen new appointments, the Social Science Research Council administered an additional thirteen fellowships during the year. These represented renewals or extensions of previously awarded fellowships, or cases in which fellows, appointed at an earlier date, were actively engaged upon their fellowship programs during the year. The countries in which these twenty-six fellows studied and the fields which they represented are shown in the following table:

**FELLOWSHIPS ADMINISTERED BY THE SOCIAL SCIENCE RESEARCH
COUNCIL IN 1935 WITH FUNDS PROVIDED BY THE
ROCKEFELLER FOUNDATION**

Country of Study	Number of Fellows	Field of Study	Number of Fellows
Africa.....	2	Anthropology.....	2
Austria.....	1	Economics.....	8
China.....	1	Geography.....	1
England.....	7	History.....	6
Germany.....	3	Political Science.....	2
Italy.....	1	Psychology.....	3
Rumania.....	1	Sociology.....	3
Russia.....	2	Social Statistics.....	1
Scotland.....	1		
Spain.....	1		
Switzerland.....	3		
United States.....	3		
	<hr/>		<hr/>
Total.....	26		26

The Foundation's thirty-five new appointments for 1935 are summarized in the table on page 204, which shows the countries from which the fellows came and their fields of specialization.

FELLOWSHIPS IN THE SOCIAL SCIENCES ADMINISTERED BY THE
ROCKEFELLER FOUNDATION IN 1935: NEW APPOINTMENTS,
DISTRIBUTED BY FIELD OF STUDY AND
COUNTRY OF ORIGIN

Country of Origin	Social Security	Economics	International Relations	History and Law	Public Administration	Sociology and Anthropology	Human Geography	Totals
Australia.....	1	1	..	1	..	..	..	3
Austria.....	..	..	..	..	..	1	..	1
Belgium.....	1	..	..	..	..	..	..	1
Bulgaria.....	1	..	..	..	..	..	..	1
Czechoslovakia..	..	..	..	..	..	1	..	1
Denmark.....	..	1	..	..	..	..	..	1
Finland.....	..	2	..	..	..	..	..	2
France.....	..	..	1	1	..	1	1	4
Germany.....	..	1	1	..	..	1	..	3
Great Britain...	1	1	..	..	2	..	1	5
Hungary.....	..	..	1	..	..	..	..	1
Italy.....	..	..	..	..	..	1	..	1
Lithuania.....	..	..	..	..	1	..	..	1
New Zealand....	..	1	..	..	..	..	..	1
Norway.....	..	..	..	..	..	1	..	1
Poland.....	1	..	1	..	..	1	..	3
Rumania.....	..	1	..	..	..	..	..	1
Sweden.....	..	..	1	..	..	..	..	1
League of Nations.....	1	..	2	..	..	..	..	3
Totals.....	6	8	7	2	3	7	2	35

If to the number of fellows appointed during the year is added the number of extensions, re-appointments, and fellows appointed at earlier dates who were actively engaged upon their fellowship programs during some part of 1935, the total number of social science fellowships administered by the Foundation during the year is 115.

**SUMMARY OF NEW FELLOWSHIP APPOINTMENTS IN THE SOCIAL SCIENCES
MADE BY THE ROCKEFELLER FOUNDATION AND THE SOCIAL
SCIENCE RESEARCH COUNCIL, 1924 TO 1935**

Administering												
Agency	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935
Rockefeller												
Foundation	16	24	44	48	45	43	44	73	60	44	53	35
Social Science												
Research												
Council	..	15	12	17	17	25	28	25	30	15	13	13
	—	—	—	—	—	—	—	—	—	—	—	—
Total.....	16	39	56	65	62	68	72	98	90	59	66	48

3. Grants in Aid

As in preceding years the Foundation continued in 1935 to provide limited financial assistance for the research of individual scholars and for small institutional projects. The funds given by the Foundation for this purpose in the United States are in the hands of the Social Science Research Council and are reserved exclusively for individual grants. The Social Science Research Council expended \$22,125 for aid to individuals in 1935, awarding forty-eight grants in amounts ranging from \$200 to \$700. The officers in the Paris office of the Foundation have followed a somewhat different policy in making European grants. There the primary purpose is to aid former Foundation fellows in the completion of work undertaken during the fellowship period. A secondary aim is to provide for a modest institutional research program within the fields of recognized Foundation interest. In 1935 six

grants were made to terminate the Foundation's financial responsibility toward the research activities of institutes whose work does not come within the modified program of the Foundation. Supplementary grants totaling approximately \$9,880 were also made to beneficiaries under earlier grants to compensate for losses in exchange due to the devaluation of the dollar.

The Paris office made forty-one grants, totaling \$59,584 and distributed as follows:

GRANTS IN AID IN EUROPE, 1935		
Purpose of Grant	Number	Amount
Aid to former fellows.....	27	\$33,727
Research in international relations and social security..	8	18,484
Completion of research under terminating programs....	6	7,373
Total.....	41	\$59,584

Under the new specific programs in the social sciences, grants in aid may be given directly by the Foundation in the United States as well as in Europe. In 1935 two grants in the field of public administration were so made: \$2,500 to the **Institute of Women's Professional Relations** for a study of positions open to men and women in the public service in Connecticut; and \$3,600 to the **National Institute of Public Affairs** for advisory services to the National Youth Administration's program of apprenticeships in state and local governments.

During the year, \$76,750 was made available

for the appointment of displaced European scholars to teaching or research positions in the social sciences in American and European universities. These grants were made from a special research aid fund appropriated by the Foundation to be used in all fields of work.

The appropriations made in 1935 to provide grants in aid in the social sciences were as follows:

APPROPRIATIONS MADE IN 1935 FOR GRANTS IN AID
IN THE SOCIAL SCIENCES

Grants in aid in the fields of social security, international relations, and public administration (for use in 1935)	\$45,000
Grants in aid in the fields of social security, international relations, and public administration (for use in 1936)	60,000
Grants in aid in the social sciences, Europe (to terminate former programs, available until December 31, 1937)	25,000
Total	\$130,000

4. Advisory and Planning Bodies

The Social Science Research Council since its creation in 1923 has played a central rôle in the development of the field of the social sciences. With a total membership of twenty-eight, it has twenty-one members representing seven national scientific societies which are concerned with the social sciences. An annual conference lasting several days gives unity to the work of numerous committees of experts which meet, on an entirely voluntary basis, several times in the year. The council has been attempting for more than ten years to promote research in areas not sufficiently explored, to improve the methods of work and

means of communication among social scientists, to develop research personnel, and to break down the artificial barriers existing between the various disciplines in the university. The council not only disburses funds in the form of fellowships and grants in aid but initiates research projects and plans their development.

The Rockefeller Foundation gives substantial financial assistance to the council in connection with the various activities described above. As has been mentioned earlier in this report, the Foundation relies on the council to administer a fellowship program providing opportunities on an advanced level of scholarship for Americans to travel abroad and to follow a specific research interest. The council also administers a research aid fund for the assistance of the individual American scholar who has a definite project under way. The Foundation made no new grants to the council in 1935 toward its general expenses, though funds were available under earlier appropriations.

SUPPORT GIVEN TO ADVISORY AND PLANNING BODIES
DURING 1935 UNDER PREVIOUS APPROPRIATIONS

American Statistical Association, Washington, D. C. General budget.....	\$7,500
Social Science Research Council, New York City	
Conferences and planning.....	50,000*
General budget.....	47,500*
General research projects.....	50,000*

* Academic or fiscal year 1935-36.

The American Statistical Association, mentioned in the table on page 208, is a second advisory and planning body receiving Foundation assistance. The opportunity was presented for the association to become a real link between Federal statistical offices and members of the association desiring access to Federal statistical records. The association thought that constructive leadership in the development of activities in Washington might also be exercised. In 1934, therefore, the Foundation provided \$7,500 toward the general budget of the association for one year. This grant enabled the association to transfer its headquarters to Washington and to employ a full-time administrative officer.

In 1935 a second and final grant was made to the **American Statistical Association** providing \$22,500 for use over five years to terminate satisfactorily the period of Foundation aid. The outlook is promising for the continuance of the work begun by the association at Washington.

5. Social Science Publications

During 1935 a final payment (\$11,711) was made by the Foundation to the Social Science Research Council for the liquidation of the publication of *Social Science Abstracts*.

The year 1935 marked the publication of the

fifteenth and last volume of the *Encyclopaedia of the Social Sciences*, toward which the Foundation made a substantial financial contribution.

B. Specific Research Programs

The Foundation has at the present time three programs of specific interest in the general area of the Social Sciences: social security, international relations, and public administration.

1. Social Security

Early in 1935 the trustees approved a new program in social security. This program has two main objectives:

- a) research directed to the description and measurement of cyclical and structural change and to the analysis of the causes of instability.
- b) development of more adequate protection against the main hazards that confront the individual, such as sickness, accident, old age dependency, and unemployment, through improved provision for social insurance and organized relief.

The program thus aims at prevention and protection. The preventive aspect is to some extent a continuation of the Foundation's earlier program of economic planning and control. The protective aspects of the problem have also received intermittent but, in the aggregate, substantial

support over the past five years. Illustrative of this interest were the Foundation's earlier grants to the Committee on the Costs of Medical Care, to the University of Minnesota for an economic and social study of unemployment, and to the Industrial Relations Counselors for studies of European unemployment experience.

The following table shows the social security activities receiving Foundation support during 1935:

INSTITUTIONS AND ORGANIZATIONS RECEIVING SUPPORT DURING 1935
UNDER PREVIOUS APPROPRIATIONS FOR RESEARCH IN THE
FIELD OF SOCIAL SECURITY

United States	
National Bureau of Economic Research, New York City.	
General budget.....	\$75,000
Europe	
Austrian Institute for Trade Cycle Research, Vienna. Research program.....	4,000
Dutch Economic Institute, Rotterdam, Netherlands. Research program.....	5,000*
Institute of Economic and Social Research, Paris, France. Establishment and support.....	Frs. 750,000
League of Nations, Geneva, Switzerland. Analytical research work of the Financial Section and Economic Intelligence Service.....	\$75,000
University of Louvain, Belgium. Institute of Economics. Business cycle research.....	Belg. Frs. 20,000

* Academic or fiscal year 1935-36.

During the present year three grants were made for support of fundamental research into the problem of economic instability. Two were for European institutes and represented continuation of earlier support. The Austrian Insti-

tute for Trade Cycle Research received \$12,000 to be available over the two calendar years 1936 and 1937. Its work has been described in preceding Foundation annual reports as attempting to provide a prompt and accurate factual picture of business conditions in Austria and to improve methods of analysis. The institute's studies are published in book form and are regarded as significant contributions to the growing literature on the business cycle.

The Foundation's grant of \$15,000 toward the budget of the **Statistical Institute of Economic Research** of the **University of Sofia** was made in recognition of the desirability of building up an institute similar to the Austrian institute to study the relatively simple agrarian economy of Southeastern Europe. The scientific director of the institute, trained in prewar Russia, has an international reputation. The institute itself receives substantial local support—more than that enjoyed by similar institutes in countries far more prosperous than Bulgaria. This work had been supported previously under a grant in aid from the Paris office of the Foundation.

The Foundation's third grant for economic research was to **Harvard University** to enable the **Department of Economics** to continue, with certain modifications, the work originally carried

on by the Harvard Economic Society. Thirty thousand dollars, available over the three-year period beginning May 1, 1935, was appropriated for this purpose. The Harvard program calls for the development of fundamental research into problems of equilibrium, and the publication of a journal, *The Review of Economic Statistics*. Foundation support is for the expenses of providing basic data and developing new statistical series of importance to the fruitful analysis of the causes of economic fluctuations.

Three grants were made under that part of program concerned with the development of more adequate protection against the main hazards that confront the individual. The largest grant, \$225,000, was given to the **Social Science Research Council**, to finance the work over a three-year period beginning July 1, 1935, of a **Committee on Social Security**, to which were appointed persons with interests committing them to a continuous concern with the field of social security. A full-time staff under a general director has been created by the committee to maintain close contact with operating governmental and private agencies, and thus to acquire a realistic sense of the actual problems which should be studied and reported upon. It is expected that the Committee on Social Security and staff will succeed in bringing to the attention

of officials existing knowledge relevant to the proper performance of their duties, whether related to long-range basic problems or to more immediately pressing short-range problems, and, in addition, will focus private research upon aspects of the problem that are significant to sound administration and to the development of constructive public policy. The committee has set up its staff headquarters in Washington under the direction of Dr. J. F. Dewhurst.

Reference should also be made to the Foundation grant to the **Social Science Research Council** for the use of its **Public Administration Committee** and staff. This committee is giving considerable attention to the strictly administrative problems connected with the social security legislation enacted during the course of the year. A fuller account of the purposes of the grant may be found in the section of this report devoted to the Foundation's program in the field of public administration.

The magnitude and the complexity of the administrative problems that have suddenly confronted Federal and state officials as a result of the passage of the Federal social security legislation have involved frequent and urgent calls for advisory services from the few men in this country possessing a recognized knowledge of foreign experience and American business organ-

ization. The personnel of the **Industrial Relations Counselors** have experienced particularly heavy demands upon their time, which the organization has felt could not properly be refused. As it was undesirable to seek compensation at the rates customarily asked of private industrial clients, and as it appeared advantageous to respond more freely to these calls, the counselors requested and received from the Foundation a grant of \$10,000 for use during the period beginning June 15, 1935, and ending December 31, 1935.

An appropriation of \$5,000 was made to the **Governor's Commission on Unemployment Relief** toward the expenses of a study of the emergency relief situation in New York State. The study was conducted under the auspices of a commission of prominent citizens appointed by the Governor in the summer of 1934, with the assistance of a large staff of investigators. The data assembled by the investigators and the conclusions and recommendations of the commission were published during 1935 in the form of three monographs dealing with the public employment services, the administration of home relief in New York City, and work relief projects of the public works type in New York State. The recommendations appeared as a legislative document.

The following table recapitulates the appropriations made during 1935 for projects in the field of social security:

APPROPRIATIONS MADE IN 1935 IN THE FIELD OF SOCIAL SECURITY

United States	
Governor's Commission on Unemployment Relief, New York. Study of relief situation in New York State. . . .	\$5,000
Harvard University, Cambridge, Massachusetts. Research on problems of the business cycle.	30,000
Industrial Relations Counselors, New York City. Services to governmental agencies.	10,000
Social Science Research Council, New York City. Work in the field of social security.	225,000
Europe	
Austrian Institute for Trade Cycle Research, Vienna. Research program.	12,000
University of Sofia, Bulgaria. Statistical Institute of Economic Research. Budget.	15,000
Total.	<u>\$297,000</u>

2. International Relations

The Foundation has long been concerned with international relations. The work of all divisions is international in scope and, in certain instances, directly promotes cooperative relationships between nations. The fellowship programs of the Foundation are effective in breaking down national isolation; they make possible travel and study in almost all parts of the world, and broaden the fellow's horizon and experience by giving him opportunity to study outside his own country.

Within the division of the social sciences, the Foundation has had during recent years a pro-

gram directed explicitly toward better international relations. This specific program has sought to bring about more satisfactory international relations by creating: (a) a fuller understanding of world affairs among larger sections of the public, and (b) greater competence in technical staffs attached to official bodies or governmental agencies charged with the handling of troublesome and important international questions. A program limited to these two approaches cannot, of course, be expected to produce an immediate effect upon international policy, but there is an evident restriction upon the Foundation in attempting to deal with many factors in the international situation.

It is believed that there are large possibilities of improving relations between nations by the study and dissemination of information upon the specific causes of friction, especially when definite action looking toward improvement can be proposed. While it is not easy to influence public opinion in a realm where emotion and tradition rather than reason often hold sway, the increase of understanding should yield results. Sound knowledge of international affairs has not yet been generally achieved, but there is an increasing awareness of the complexity and seriousness of international problems. Some of the organizations which are receiving Founda-

tion assistance carry on research for the purpose of offering objective data upon international questions to lay groups. In addition to publication of research they stimulate public interest through discussion, study groups, and conferences.

Increased reliance upon the expert and technical adviser by governmental authorities is a most significant development of the past decade. The Foundation has been in a position to make such services available in a number of instances, and there have been some notable results from these undertakings. The use of factual material gathered by experts is being made the basis of negotiation to an increasing extent. The double taxation study made under the auspices of the Fiscal Committee of the League of Nations and financed by the Foundation is a case in point.

Through the promotion of these two types of enterprise, i.e., the stimulating of more intelligent public opinion by a variety of activities and the furnishing of experts for specific planning or research, the Foundation program in international relations has achieved some results, and it is hoped that more will be accomplished in the future.

The organizations now assisted are of several types—official and non-official, academic and non-academic, international and national in structure. The League of Nations is the only

official organization receiving support. The International Health Division of the Foundation has aided the Health Organization of the league, and funds for the financial Section and Economic Intelligence Service of the secretariat, for analytical research with special reference to the business cycle, have been provided through the program in the social sciences. The Fiscal Committee of the league is receiving current support for a study of double taxation, as indicated in the table on page 221. In 1935 the Foundation made an appropriation to the International Institute of Intellectual Cooperation, an affiliate of the League of Nations, for the International Studies Conference described at some length later in this report.

The Institute of Pacific Relations, which is a non-official organization with an international membership, is also receiving Foundation support. The Pacific Council, including the central secretariat at Honolulu, has received assistance over a period of years toward the research program of the institute.

The major part of Foundation funds available for the program in international relations has gone to national organizations, academic and non-academic in character. Although the opportunity for tangible accomplishment seems heightened when the membership of an organi-

zation is representative of many nations, greater strength lies at present in nationally organized groups. The non-academic organizations direct their attention more or less specifically toward the creation of intelligent public opinion and, for this reason perhaps, their accomplishments are better known. The academic institutions to which the Foundation has made grants are directly concerned with research and the training of students in international affairs; they are only indirectly interested in educating public opinion.

As a rule Foundation grants have been made toward the continuing programs of organizations. In a few instances, however, support for a specific project, as the Millionth Map of Hispanic America under the American Geographical Society, has been undertaken.

There follows a table listing organizations receiving financial aid from the Foundation in 1935 under earlier appropriations:

INSTITUTIONS AND ORGANIZATIONS RECEIVING SUPPORT DURING 1935
UNDER PREVIOUS APPROPRIATIONS IN THE FIELD OF
INTERNATIONAL RELATIONS

United States

American Geographical Society, New York City. Preparation and publication of Millionth Map of Hispanic America.....	\$50,000†
Council on Foreign Relations, New York City. Research program.....	25,000
Foreign Policy Association, New York City. Support of Research Department.....	25,000
Harvard University and Radcliffe College, Cambridge, Massachusetts. Research in the field of international relations.....	50,000*

Institute of Pacific Relations. American Council, New York City. General expenses.....	\$25,000
Europe	
Canton of Geneva, Switzerland. Department of Public Instruction. Postgraduate Institute of International Studies. Maintenance..... Sw.Frs.	350,000
Geneva Research Center, Switzerland. General research budget.....	\$8,000*
League of Nations, Geneva, Switzerland. Fiscal Committee. Study of international double taxation problems.....	50,000†
Royal Institute of International Affairs, London, England. Research program.....	£8,000*
The East	
Institute of Pacific Relations, Honolulu, Hawaii. Research in the social sciences.....	\$50,000

† Total amount of appropriation; available as needed to date of termination of grant.

* Academic or fiscal year 1935-36.

In 1935 the Foundation made several grants in the area of international relations for the continuation of work formerly supported and also for new undertakings.

The Laura Spelman Rockefeller Memorial and The Rockefeller Foundation have given substantial support to the research program of the **Institute of Pacific Relations** since 1926, and have contributed through the American Council to the administrative expenses of the Pacific Council. In 1935 the Foundation made two appropriations to the **Pacific Council**: \$15,000 a year for three years toward the general expenses, and \$35,000 in 1936, \$30,000 in 1937, and \$25,000 in 1938 toward the research program of the institute. The activities of the Institute of Pacif-

ic Relations have been fully described in preceding annual reports of the Foundation. The institute is promoting a more accurate and sympathetic understanding of the problems of the Pacific among national groups with interests in that area. Seven national councils have been established to carry on comprehensive programs of research and education on a national basis. The secretariat arranges for a biennial conference, centers the research interests of the member countries upon the problems to be discussed at the conference, and itself directs a continuing program of research and adult education in Pacific affairs. Publication is emphasized by both the Pacific and the American Councils. A quarterly, *Pacific Affairs*, is published by the institute. The major fields of investigation at present are land utilization, food supply, population, and standards of living.

A grant of \$47,500 was made in 1935 to the American Council toward its general expenses over a three-year period. The American Council is seeking to develop understanding in the United States of the problems of the Pacific. It is the strongest of the national groups making up the membership of the Institute of Pacific Relations and assumes the responsibility of leadership in financing the secretariat of the institute and the biennial conference, and in stimulating research

and publication. The American Council works closely with universities and with other research and educational organizations. Language, history, and art courses preparing for life in Eastern countries and for understanding the problems of Eastern peoples have been introduced into American universities. A general interest in Pacific affairs is being stimulated by the objective interpretation of current events in periodicals and other publications. The fortnightly, *Far Eastern Survey*, is published in New York City by the American Council.

A grant of \$50,000 made in 1935 toward the research program of the **Council on Foreign Relations** will continue aid from the Foundation for four years. The council, situated in New York City, has by virtue of its type of membership unusual opportunity to promote intelligent thinking upon and formulation of American foreign policy. Membership is limited by invitation to those thought to have a positive contribution to make to the council's program through their scholarship or experience. The research activities of the council include financing and publication of individual researches, preparation and publication of certain handbooks, organization of study groups, conferences of specialists to consider critical problems of national policy still in the formative stage, and the dispensing of in-

formation to members of the council and to students throughout the United States.

Two grants were made in 1935 to the **Foreign Policy Association**. A grant of \$75,000 was given toward the support of the **Research Department** of the association for an additional three-year period, continuing Foundation assistance at the level which has been maintained since 1933. The work of the Research Department, which furnishes the basis for all the other work of the association, has been described in preceding annual reports of the Foundation. Its publications are widely used in the academic world and have an appreciable effect upon the reporting of foreign affairs in the newspapers of this country. In its publications, current international developments are analyzed in comprehensive fashion. The *Foreign Policy Reports* are used in the teaching of courses in history, government, and international relations in many colleges and universities and form an essential part of the association's offering to the membership of 13,458 (April 1936).

An additional grant of \$37,500 was made to the **Foreign Policy Association** toward the support of an experimental educational program to be carried on over an eighteen-month period ending December 31, 1936. The purpose of the experiment is to supply, to a wider audience

than was formerly reached, elementary material dealing with international questions. Two types of publication are being distributed: the *Headline Books*, popular pamphlets of twenty to thirty pages written in terse, vivid English and illustrated by drawings or graphs; and short, vital reports of three or four pages on foreign policies, prepared for special study groups, public forums, labor and farm groups. The main channels of distribution are welfare organizations, agencies of adult and secondary education, and various commercial publishing agencies interested in the distribution of popular-priced informational literature. There are also daily or semiweekly releases over the radio and by the newspaper.

An initial grant was made to the **Center for the Study of Foreign Relations**, a newly organized group in Paris, France. The Foundation appropriated \$70,000 for use over three years toward a research program in international relations to be carried on by individuals and institutes connected with the University of Paris. The research is supervised by eminent sociologists, lawyers, and economists, and special attention is given to the development of groups for the study of contemporary problems. An information and advisory service, the publication of a quarterly review, and stimulation of the research of individuals are other activities of the center.

For several years the Foundation gave assistance to the **International Institute of Intellectual Cooperation, Paris**, to permit the employment of a secretary-rapporteur at the biennial meetings of the International Studies Conference. In 1935 the Foundation appropriated \$30,000 to the institute for use over the period preceding the 1937 **International Studies Conference** to permit a better organization of the research program than the institute was able to finance with its own funds. The institute is an officially recognized international institution set up by the League of Nations but administered by its own board of directors. It serves as the executive and administrative agency of the Commission of Intellectual Cooperation of the League of Nations. In 1927, on the initiative of the institute, the first meeting of the International Studies Conference was held. The conference is now attended by representatives of fifteen recognized national groups and five international institutions specifically concerned with the study of international relations. It is completely autonomous and determines its own program. In the intervals between meetings, an administrative committee made up of delegates nominated by eight of the member organizations deals with preparation for the succeeding conference. The aim of the conference is to awaken a wider interest in international prob-

lems in European countries. The next meeting, to be held in 1937, will be devoted to discussion of the important subject "Peaceful Change."

Grants were made in 1935 to two universities carrying on research and advanced training in the field of international relations. The Foundation appropriated \$100,000 to Yale University for the support of its Department of International Relations over a five-year period beginning July 1, 1935. During eight years Yale University has engaged in extensive development of the study of international relations and had established the department as a separate administrative division of the Graduate School. With the aid of the Foundation's grant, an Institute of Research in International Relations has been organized with a definite program for the study of the range of methods employed by nations to promote peace. Group research will be carried on by the staff of the institute, and the cooperation of outside persons will be invited. The institute, which seeks to achieve practical results, will direct its publications to that end. The research program of the institute draws strength from the large and active undergraduate and graduate departments of international relations, from the School of Law, which has manifested marked interest in international problems, and from the Institute of Human Relations, which is con-

cerned with research of direct and indirect importance to international relations. The plans of the graduate department and of the Institute of Research in International Relations should make Yale University a center for the study of problems of foreign relations and for the formulation of practical proposals as to policy. An integrated four-year course of study featuring international relations has already been set up in the undergraduate college.

A second university grant was made in 1935 to **John Casimir University** at Lwow, Poland, toward the research program of the **Institute of Constitutional and International Law**, the chief university center in Poland for teaching and research in international relations. Formerly the Foundation had given financial assistance to the institute through small grants from the Paris office. Under the 1935 appropriation \$5,000 is available annually for three years. The Lwow institute is under the directorship of Professor Ludwik Ehrlich, a recognized authority on international problems. In 1934 the institute organized a conference of representatives of universities from ten countries in Eastern Europe, from Scandinavia to Greece, to discuss the development of university teaching and research in international relations in this area.

Two projects were assisted by Foundation

grants in 1935. The 1934 Annual Report contained a description of the study of the **American Geographical Society** looking toward the publication of the **Millionth Map of Hispanic America**. A final grant of \$40,000 was made by the Foundation in 1935 to permit the completion of the project. The plan for the Millionth Map may be briefly summarized as follows: a project was begun in 1909 by international agreement for a world map of uniform style on the scale of 1:1,000,000. The limited work now under way is for a map which covers all of the land areas and contiguous waters of the Western Hemisphere south of the Mexico-United States boundary, including the West Indies. The 102 sheets now nearing completion will form the largest block of maps ever developed through international agreement and cooperation. The data made available through the publication of the Millionth Map of Hispanic America by the American Geographical Society have been, and will doubtless continue to be, of large value in the settling of boundary disputes and in the creation of better relations between the United States and the countries of Latin America.

The second project aided in 1935 was **Professor Henry C. Taylor's** study of world agricultural economics at the **International Institute of Agriculture at Rome**. The Foundation appro-

priated \$18,000 for use over a three-year period to provide Professor Taylor with necessary secretarial assistance and travel expenses in connection with his research. The plan of study is to survey world trade in agricultural products in the nineteenth and twentieth centuries from several points of view, and to analyze the moving forces in international agricultural trade. The conclusion of the study will present a plan of international economic cooperation and will appear in the volume entitled *Bases of International Planning in Agriculture*.

The following table summarizes the above-mentioned grants made in 1935 in the program of international relations:

APPROPRIATIONS MADE IN 1935 IN THE FIELD OF INTERNATIONAL
RELATIONS

United States

American Geographical Society, New York City. Preparation and publication of the Millionth Map of Hispanic America.....	\$40,000
Council on Foreign Relations, New York City. Research program.....	50,000
Foreign Policy Association, New York City	
Support of experimental educational program.....	37,500
Support of Research Department.....	75,000
Institute of Pacific Relations. American Council, New York City. General expenses.....	47,500
Yale University, New Haven, Connecticut. Research in international relations.....	100,000

Europe

Center for the Study of Foreign Relations, Paris, France. Research in international relations.....	70,000
International Institute of Intellectual Cooperation, Paris, France. Maintenance and conferences.....	30,000

John Casimir University, Lwow, Poland. Institute of Constitutional and International Law. Research on problems of international relations.....	\$15,000
World-wide study of agricultural economics.....	18,000
The East	
Institute of Pacific Relations. Pacific Council, Honolulu, Hawaii. General expenses and research program.....	135,000
Total.....	<u>\$618,000</u>

3. Public Administration

Over a period of years the Foundation has included within its social science program a number of projects in the field of public administration. Specifically, grants have been made to the Universities of Chicago, California, Syracuse, and Cincinnati for research and for training programs in this field; an endowment grant was made to the Institute of Public Administration, and support was given to the Committee on Government Statistics and Information Services, which played a useful part in the establishment of the Federal Government's Central Statistical Board. The Foundation offered initial support to the work of the Science Advisory Board created by executive order to render advisory service to a variety of Federal departments; and, under its emergency program, sponsored a variety of projects, of which many were related to some aspect of public administration. All these projects have been outlined in previous annual reports. There follows in summary form a list of

those receiving support from the Foundation during 1935:

INSTITUTIONS AND ORGANIZATIONS RECEIVING SUPPORT DURING 1935
UNDER PREVIOUS APPROPRIATIONS FOR PROJECTS IN
PUBLIC ADMINISTRATION

Harvard University, Cambridge, Massachusetts. School of City Planning. Support.....	\$35,000*
Science Advisory Board, Washington, D.C. General expenses.....	50,000†
Syracuse University, New York. School of Citizenship and Public Affairs. Research and training.....	8,000*
University of California, Berkeley. Bureau of Public Administration. Program of graduate training and research...	15,000*
University of Chicago, Illinois. Training and research in public administration.....	25,000*
University of Cincinnati, Ohio. Training in public administration.....	15,000*

* Academic or fiscal year 1935-36.

† Total amount of appropriation; available as needed to date of termination of grant.

In April 1935 the trustees specifically designated public administration one of the fields of concentration within the social science program, and approved in general terms its development through the support of research projects and training programs designed to promote the recruitment and education of better qualified government personnel within the United States.

In furthering this program in the year 1935, six grants were made totaling \$1,378,000. The largest of these went to another foundation—\$1,000,000 to the Spelman Fund of New York to be used at the discretion of the Fund's trustees in the general program of providing im-

proved public administration through collaboration with governmental agencies and organizations of public officials. Four grants, totaling \$213,000, were made in support of training projects: a grant to the American University in Washington, D.C., was for the support of an "in-service" training project under which special training facilities were offered to men and women already employed in the Federal services; grants to Harvard and Syracuse Universities were for graduate training programs offered to students aspiring to public service careers; and a grant to the National Institute of Public Affairs was for the maintenance in Washington of clearing, liaison, and directional facilities for students of American colleges and universities working upon internships which provide them with opportunities for a year of practical experience within some Federal government agency as part of their graduate training. The sixth grant was for a research and service project: \$165,000 to the Public Administration Committee of the Social Science Research Council to make possible an attempt to bridge the gap that has existed between public administrators faced with practical problems and scholars engaged upon academic research in the public administration field. There follows a brief description of each of these projects.

**Spelman Fund of New York
Public Administration**

The Rockefeller Foundation appropriated to the Spelman Fund of New York the sum of \$1,000,000 toward the general support of its work in public administration over the five-year period from 1936 through 1940, payments in any year of the grant not to exceed \$300,000.

For a number of years the Spelman Fund has directed its efforts toward the improvement of public administration through direct cooperation with public officials and governmental units. In words borrowed from one of its annual reports, it has sought "to forward this purpose through the strengthening of facilities for selecting and giving spread to useful results of experience and research in public administration; through the encouragement of cooperative undertakings by officials and governmental units; through the demonstration of administrative innovations; and through the development, testing, and installation of improved administrative methods and devices. The Fund has no political aims and confines its interest to administrative as distinguished from policy-forming activities."

The Spelman Fund has played a major part in the organization and maintenance of the Public Administration Clearing House in Chicago and of the fourteen organizations of governmental

units and public officials clustered about it. These organizations and their affiliates are maintaining contact with administrative officials and legislators in the several states, and with perhaps 70,000 municipal officials in 5,000 cities and towns having a combined population of approximately 50,000,000. Useful cooperative relationships have been established at the state and municipal levels and with many agencies of the Federal Government. Working relationships are also being formed with national and municipal clearing agencies in the international field.

The Chicago agencies serve to promote the general acceptance of new devices or techniques of government, many of which have been supported by the Spelman Fund upon a demonstration basis. One of these agencies, the Public Administration Service, is equipped to furnish upon request of governmental bodies an expert consulting service through which the best administrative practice, as demonstrated by experience and research, may be determined and installed under competent supervision.

Recognizing the importance of the Spelman Fund's work, the Foundation, rather than itself entering into a parallel and possibly overlapping program of work with governmental agencies or public officials, has elected to make a direct grant to be expended at the Fund's discretion. The

Spelman Fund program provides both a means for defining pressing problems in the administrative field and a mechanism for bringing to the attention of public officials the results of basic research upon such problems.

**American University
School of Public Affairs**

Two grants totaling \$28,000 were made during the year 1935 to the American University in Washington, D.C., toward the support over a period from January 1935 to July 1938 of an in-service training program for Federal employees.

This program was launched with the full collaboration of members of the United States Civil Service Commission and the personnel officers of the major Federal departments of government. It appeared that training which could be provided for government employees by an independent academic agency in Washington would aid in the important tasks of broadening the areas providing career positions in the Federal service and in improving the level of competence of those who occupy such positions.

In the second semester of the academic year 1934-35 courses were offered in public personnel management and Federal administrative statistics. For the academic year 1935-36 these

courses were repeated and additional ones were offered: administrative problems common to all departments, classification problems, housing and home financing, government and statistical methods applied to census data. In addition, a seminar was conducted on methods of in-service training. Special cooperative arrangements for training work were made with the Department of Agriculture, the Farm Credit Administration, and the Bureau of the Census. The enrollment was very satisfactory, 429 students participating in the work for the academic year 1935-36. Since applications far exceeded acceptances, it was possible to select candidates of excellent caliber and previous training.

**Harvard University
Public Service Training Program**

Harvard University received a grant of \$66,000 toward the support of a program of public service training over a five-year period from July 1, 1935, to June 30, 1940. The grant was made to support a program developed by the Department of Government, under which a small number of specially selected men, who are granted fellowships by the university, are offered facilities designed to equip them for public service careers as administrators, legislators, or publicists. The fellows enroll for a three-year

training program, of which, ordinarily, the first year is devoted to acquiring any background necessary to the individual fellow; the second year is spent in the field upon an internship or apprenticeship which is carefully arranged to afford wide opportunity for experience in public service employment, whether Federal, state, or local; and the third year, again in residence, is to be organized around the preparation of a thesis and participation in a general seminar devoted to detailed analysis of public policy and problems arising out of the apprenticeship experiences.

In addition to this program for selected fellows, the Harvard Department of Government is providing an orientation seminar for particularly able and promising specialists from other departments of the university who are contemplating a career in the public service. To plan the seminar and to advance the general public service training program, an informal committee of advisers has been organized which includes men from other departments and schools of the university, and a group of cooperating fellows who are prominent men of affairs.

The university administration has evidenced great interest in this project, not alone for the direct end of training public servants, but for the expected by-product of focusing and coordinat-

ing the social science program of the university. Subsequent to the Foundation's grant, a substantial endowment was provided by a Harvard alumnus, Mr. Lucius N. Littauer, for a school of public administration designed to bring about much more extended development in this field throughout the university.

Syracuse University
School of Citizenship and Public Affairs

Within the year covered by this report an appropriation of \$39,000 was made to allow the School of Citizenship and Public Affairs at Syracuse University to expand its training course in public administration and to lengthen the course from one to two years. This school has pioneered in training for the public service over the past ten years. Since 1932 the Foundation has been contributing to research and training projects at the school, which previously had been aided by grants from the Laura Spelman Rockefeller Memorial.

The training program has provided an intensive year of graduate work focused upon practical problems that arise in the administration of a wide variety of governmental activities. An effort has been made to professionalize training and to abstract for teaching purposes general principles of administrative procedure in the belief that, paralleling the experience of medi-

cine, law, and business, a professional curriculum for administration might be organized. Classroom work has been supplemented with apprenticeship experience with public or quasi-public agencies, and a large percentage of the school's graduates have found public service employment. Many of these graduates have risen to positions of importance within a surprisingly short period.

Since there is general agreement that a twelve-month period is too short for adequate training of the type attempted, the current grant was made to permit expansion to a two-year basis. The past record of accomplishment appeared to warrant a fair trial at Syracuse University for the focused, professional type of training, in contrast to the broader, more generalized training offered at Harvard and elsewhere. With its expanded opportunities the program of the School of Citizenship and Public Affairs should afford a fair test of the relative worth of this procedure as compared with those which attempt to promote the same ends through other methods.

National Institute of Public Affairs

Within the year, \$80,000 was appropriated to enable the National Institute of Public Affairs, during the three-year period from October 1, 1935, to September 30, 1938, to act as a liai-

son agency between Washington governmental groups and American universities and to direct the programs of graduate students attached to the Federal services for practical field experience.

The Foundation's program in public administration has given serious consideration to the expedient of providing internship opportunities as an integral part of graduate training. Few problems are presented when arrangements for such opportunities are sought from state or local governmental agencies, since there is not likely to be much overlapping of demands within a single jurisdiction. In Washington, however, the rapid growth of interest in this form of student activity presents serious problems. There was agreement among Federal civil service and personnel officers that a liaison agency was needed to clear applications, to arrange opportunities, and to exercise some supervision and guidance over interns, in order that the hospitality of government departments and officials might not be worn threadbare within a short period.

The National Institute of Public Affairs, which had established itself in Washington under a directorate that assured its political non-partisanship, seemed well equipped for this liaison task, and the Foundation's grant permitted a systematic organization of the work.

Initial explorations have established the fact that an extraordinary interest in opportunities for Washington internships exists in colleges and universities throughout the country. In January 1936 the institute announced that it would be prepared to find opportunities for thirty graduate students to work within the Federal establishments during the academic year 1936-37, and that it would provide work supervision. In spite of the fact that no stipends were offered, the expense of maintenance in all cases being provided by the successful candidates or by the academic institutions, over three hundred applications were filed, and there is every indication that the students are of the highest caliber. Applications came from the most representative American colleges and universities and from all forty-eight states of the Union. Governmental authorities are showing a comparable interest, resulting in the placing of the thirty successful candidates in positions where there is sensitive regard for an intern's development.

At the request of numerous colleges the National Institute also has organized a one-week Institute of Government, through which undergraduates are afforded an exceptional opportunity to meet ranking governmental officials and to view the operation of the government agencies that they have previously studied. As a

first experiment, the National Institute announced that it could accept sixty participants in this Institute of Government. It received over two hundred requests and actually accommodated eighty students.

**Social Science Research Council
Public Administration Committee**

An appropriation of \$165,000 to the Social Science Research Council, for the use of its Public Administration Committee during the five-year period July 1, 1935, to June 30, 1940, provided \$15,000 which might be allocated for brief or exploratory studies or projects during the first year, and \$30,000 each year for the expenses of maintaining a full-time staff.

The Public Administration Committee of the Social Science Research Council had been in existence for a number of years before this grant was provided, and had a membership thoroughly representative of leading scholars and men actively engaged in public administration. Equipped with a full-time staff, this group appeared suited to serve in a liaison capacity between public administrators and scholars having interest and ability to study practical problems in their basic aspects. The integration of work in public administration now carried on in the several research centers of the country will be attempted

by having the committee act as a clearing house for those engaged in research. Scholars engaged in limited or regional studies will be encouraged to frame their individual efforts in such a way as to make them complementary to each other and relevant to a consistent attack upon the most pressing problems. The purpose is, insofar as this is possible, to define objectives and to add to the general store of administrative knowledge, so that as government faces new problems and expands its already formidable functions, those who must make administrative decisions may profit by recent and current experience.

APPROPRIATIONS MADE IN 1935 FOR PROJECTS IN PUBLIC ADMINISTRATION

American University, Washington, D.C. Training program in public administration.....	\$28,000
Harvard University, Cambridge, Massachusetts. Training in public service.....	66,000
National Institute of Public Affairs, Washington, D.C. Training of personnel attached to Federal services.....	80,000
Social Science Research Council, New York City. Public Administration Committee.....	165,000
Spelman Fund of New York, New York City. Support of work in public administration.....	1,000,000
Syracuse University, New York. School of Citizenship and Public Affairs. Research and training.....	39,000
Total.....	<u>\$1,378,000</u>

C. Former Program

1. Economic Planning and Control

The present program in social security includes a part of the field designated within the former

program of economic planning and control. But the promotion of basic economic research is no longer an interest of the Foundation except in relation to certain definite areas described in the section entitled Social Security. Accordingly, there are a number of enterprises, now regarded as outside of the present program, which have received Foundation support in the past. There follows a list of those which received funds during 1935 under earlier appropriations:

SUPPORT OF ECONOMIC PLANNING AND CONTROL
DURING 1935 UNDER PREVIOUS APPROPRIATIONS

Harvard University, Cambridge, Massachusetts. Research in industrial hazards.....	\$125,000*
National Bureau of Economic Research. New York City International study of the history of prices.....	75,000†
University of Pennsylvania, Philadelphia. Wharton School of Finance and Commerce. Industrial Research Department. Support	25,000‡

* Academic or fiscal year 1935-36.

† Formerly under the Economic Foundation, New York City.

‡ Academic or fiscal year 1934-35.

In 1935 three grants were made to terminate Foundation financial assistance for undertakings previously supported within the program in economic planning and control. The University of Pennsylvania received \$75,000 toward the support of the Industrial Research Department of the Wharton School of Finance and Commerce over a five-year period during which the amount available from the Foundation declines each

year. This final grant was designed to give the University of Pennsylvania time in which to build other sources of support for the industrial research being carried on. The program of work was described in the Annual Report of the Foundation for 1934; the research staff of the department is highly specialized in order to carry on the six intensive industrial studies which have been continuously under way for years and are the main feature of the department's work.

A second 1935 grant, amounting to \$20,000, was to the University of Manchester for the work of the Economic Research Department over a five-year period. The work of the department centers around the problems of the Manchester area, which has suffered severely from the post-war changes in England's economic life. Attention is being given to problems of unemployment, especially the employment prospects for juveniles, housing for the masses, and the changing problems confronting public authorities. The university is supporting the department liberally. With Foundation support on a tapering basis for a limited period, there is a satisfactory prospect that the budget of this department can be stabilized at the existing level.

The third grant in 1935 was \$10,000 to the Economic Institute of the Polish Academy of Sciences, Cracow, Poland, toward a program of

economic research during the four-year period October 1, 1935, to September 30, 1939. The institute was organized in 1934 on the initiative of the professors of economics in the law faculty of the University of Cracow. The active director is Professor Adam Heydel, a former social science fellow of the Foundation; three former social science fellows are associated with him in the program of the institute. The research outlined by the institute gives considerable emphasis to business cycle problems. The tapering grant made by the Foundation will, it is hoped, enable the institute to secure local support for its administrative budget.

2. Cultural Anthropology

The Foundation has had no active program in the anthropological field for several years, but earlier appropriations are still providing financial support to certain organizations. In 1935 the following grants were current:

INSTITUTIONS AND ORGANIZATIONS RECEIVING SUPPORT DURING
1935 UNDER PREVIOUS APPROPRIATIONS FOR RESEARCH
IN CULTURAL ANTHROPOLOGY •

United States

Columbia University, New York City. Research and field training in anthropology.	\$5,000†
Harvard University, Cambridge, Massachusetts. Research in anthropology.	15,000*
Tulane University of Louisiana, New Orleans. Department of Middle American Research. Support.	12,500†
University of Chicago, Illinois. Research in anthropology. . .	15,000†

Europe

International Institute of African Languages and Cultures, London, England. General budget.....	\$50,000*
Royal Anthropological Institute of Great Britain and Ire- land, London, England. General budget.....	1,000*

† Academic or fiscal year 1934-35.

* Academic or fiscal year 1935-36.

Several new appropriations were made in 1935 for the liquidation of work to which the Foundation had formerly contributed. **The International Institute of African Languages and Cultures** received a final grant of \$60,000 for use over a three-year period ending June 30, 1939. The institute has concentrated its research program upon the problems of colonial administration which result from the rapid changes taking place in the economic, social, and cultural life of African peoples. Studies have been supported or initiated in fourteen different African territories. Plans have been worked out in full agreement with colonial authorities, who have accorded an unusual degree of support to the institute's program. Even during the financial crisis subventions have been made by colonial governments and in certain cases are now being increased. Thirteen volumes based upon field studies have been published, and a practical orthography for at least sixty African languages has been worked out and adopted. The institute has widened and intensified government and public interest in the

scientific study of African problems and in the improvement of conditions of native life and of the methods of colonial administration.

The sum of \$30,000 was appropriated to the **Australian National Research Council** in support of a program of research in anthropology and for the publication of results over the three-year period beginning July 1, 1935. The Foundation's long-continued support of anthropological research under the auspices of the Australian National Research Council has yielded much valuable material upon the vanishing primitive cultures of Australia and the South Pacific. While the interest actuating the research has been primarily scientific, practical values are being realized. For instance, natives in the mandated Territory of New Guinea are being studied with the idea of developing an understanding of the native social organization among those who are responsible for ruling the territory. While the work in Australia is not finished and the council hopes to find funds elsewhere for its continuance, the particular program which has been assisted by the Foundation can be rounded out and brought to completion by the current grant.

A field training course in anthropology conducted under the auspices of the Laboratory of Anthropology at Santa Fe was initiated in the summer of 1929 with the aid of \$15,000 from the

former Laura Spelman Rockefeller Memorial. In 1929 The Rockefeller Foundation appropriated \$60,000 for the continuance of this program over a five-year period. Both students and professors of anthropology were enthusiastic about the results of the field training that was provided. Since support of work in cultural anthropology is no longer within the program of The Rockefeller Foundation in the social sciences, the sum of \$7,500 was appropriated in 1935 as a terminal grant to the **Laboratory of Anthropology** at Santa Fe to finance a summer course for two years or more.

APPROPRIATIONS MADE IN 1935 FOR RESEARCH IN
CULTURAL ANTHROPOLOGY

United States	
Laboratory of Anthropology, Santa Fe, New Mexico. Support of field training course in anthropology.....	\$7,500
Europe	
International Institute of African Languages and Cultures, London, England. General budget.....	60,000
The East	
Australian National Research Council, Sydney. Anthropological studies.....	30,000
Total.....	\$97,500

3. Community Organization and Planning

In 1935 the Foundation discontinued the program in community organization and planning which had been active for several years. The new programs in social security and public administration will include certain types of enterprise

formerly comprised in the area of activities defined as community organization and planning. Other activities in this general area will no longer be eligible for Foundation support.

INSTITUTIONS AND ORGANIZATIONS RECEIVING SUPPORT DURING
1935 UNDER PREVIOUS APPROPRIATIONS FOR
COMMUNITY ORGANIZATION AND PLANNING

Community Council of Philadelphia, Pennsylvania. Support of the Department of Research.....	\$7,500*
New Hampshire Foundation, Concord. Research program . . .	18,000*
Social Science Research Council, New York City. Federal program for instruction in agricultural economics.....	5,000*
University of Chicago, Illinois. Local community research . . .	50,000†
Welfare Council of New York City. Research Bureau. Support.....	75,000

* Academic or fiscal year 1934-35.

† Academic or fiscal year 1935-36.

During 1935 three grants were made for the continued work of organizations previously assisted. The Foundation made a final grant of \$15,000 to the **Community Council of Philadelphia** for the use of the committee on research over a three-year period beginning October 1, 1935. The research program of the community council has been most practical in nature and has given substantial aid to the social agencies of Philadelphia and other cities of the United States in interpreting the outstanding welfare problem since the depression, unemployment. The council has represented the majority of the Philadelphia social agencies but in the past was exclu-

sively a planning body. In 1935 a Community Fund was organized with the idea of centering all financing of private social work. The Foundation grant to the research committee was designed to provide assistance over three years during the period when the Community Fund was being established.

The Foundation appropriated \$60,000 to the **Welfare Council of New York City** toward the budget of the **Research Bureau** in 1936. The former **Laura Spelman Rockefeller Memorial** and **The Rockefeller Foundation** have supported the **Research Bureau** since its initiation in 1926, and a full description of its activities will be found in the earlier annual reports. All studies of the bureau are undertaken with the idea that they will be of use in community planning and in coordinating enterprises in the field of social welfare. Many publications in mimeographed form and a few volumes in printed form are issued each year. The material produced by the **Research Bureau** has been effectively used. An important service has been given to public relief administrators, to the council's membership, to the press, and to the general public, in supplying information and casting material into form for use in the varied complex situations which have faced public and private welfare organizations in New York City during the past five years.

The sum of \$18,000 was appropriated to the **New Hampshire Foundation** for support of its program of research during a two-year period beginning June 1, 1935. The New Hampshire Foundation is concerned primarily with the administration of state and local government in New Hampshire and Northern New England. A start has been made in enlisting the interest of Northern New England colleges in regional research, but the most important contribution made to public administration was a study of the state's use of public relief funds. This study not only influenced the program of the Federal Emergency Relief Administration in New Hampshire, but also led to recommendation by the Federal authorities of new legislation for Vermont and other states. The New Hampshire Foundation has analyzed the state finances, has studied the state record of bank management, and has begun to tabulate social and economic data. The Rockefeller Foundation's current grant is final.

4. Schools of Social Work

During 1935, payments were made to four schools of social work upon earlier Foundation appropriations. In each case the grant was made on a tapering basis to enable the schools to find other sources of support as Foundation aid was withdrawn.

SCHOOLS OF SOCIAL WORK RECEIVING SUPPORT DURING 1935
UNDER PREVIOUS APPROPRIATIONS

New York School of Social Work, New York City. General budget.....	\$25,000*
Tulane University of Louisiana, New Orleans. School of Social Work. General budget.....	10,000*
University of Chicago, Illinois. School of Social Service Administration. Current expenses.....	45,000†
Western Reserve University, Cleveland, Ohio. School of Applied Social Sciences. Support.....	10,000†

* Academic or fiscal year 1935-36.

† Academic or fiscal year 1934-35.

D. Unclassified Grants

No appropriation was made in 1935 which was of unclassified character in terms of Foundation program in the social sciences as defined above. Former appropriations continued to provide support for work which had been earlier undertaken within the program of the social sciences to explore the field of personality and behavior.

UNCLASSIFIED PROJECTS RECEIVING SUPPORT DURING
1935 UNDER PREVIOUS APPROPRIATIONS

United States

Yale University, New Haven, Connecticut. Institute of Human Relations. Research in psychology, child development, and social sciences.....	\$150,000*
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Canada

Canadian National Committee for Mental Hygiene, Toronto. Program of mental hygiene and social research in Canadian universities.....	Can. \$15,000*
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Europe

National Institute of Industrial Psychology, London, England. Research program.....	£1,000
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The East

University of Hawaii, Honolulu. Racial research.....	\$45,000†
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* Academic or fiscal year 1935-36.

† Total amount of appropriation; available as needed to date of termination of grant.

**THE SOCIAL SCIENCES
STAFF DURING 1935**

DIRECTOR

Edmund E. Day

ASSOCIATE DIRECTOR

Sydnor Walker

ASSISTANT DIRECTORS

Tracy B. Kittredge

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THE HUMANITIES

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THE HUMANITIES

In accord with policies of the Foundation determined in 1934, the program in the humanities during 1935 was characterized by a greater concentration on certain means of cultural diffusion to which the public looks for knowledge and enjoyment rather than on the research interests of scholars. Less emphasis was given to the preservation and interpretation of the materials of culture, more to the ways of communicating what is known. As a result the grants of 1935 reflect an increased interest in the diffusion of ideas through print and the other familiar means of oral and visual communication of thought and feeling. In the United States, grants fell under the four headings of museums, drama, film, and radio. Internationally, the areas of concentration were cultural interchange through libraries, the development of understanding with the Far East, and the improvement of the means of international communication.

Such points of contact with daily living make possible the direct relationship of the humanities to the social interests of today. Though the power of the printed word is not to be minimized, large sections of the public now derive as much from

what they hear and see as from what they read. Museums are developing new techniques of visual presentation that enable them to render a new type of public service. Radio reaches a wide audience that responds to the appeal of spoken language and of music. In drama, language combines with visual presentation to exercise a continuing hold on public appreciation; furthermore, participation through acting gives an experience that the individual can gain only partially as reader, auditor, or spectator. The power of the drama is further demonstrated as the film uses it in reaching a public beyond the influence of stage plays. These, therefore, are evidently channels of cultural diffusion that today have an increasing importance for the mass of the people in the United States.

For international cultural exchange the film, the radio, and the stage play are similarly significant; yet the barrier of language differences makes oral transmission difficult. Here the advantage still lies with printed materials, and consequently facilities for their exchange through library service have continued importance for all purposes of international understanding. But effort must center upon means by which the handicap of language differences can be lessened. The common possession of one auxiliary language would have a very far-reaching effect

upon the world today. Applied studies of language have their value for progress toward that distant goal, and when concerned with the realities of daily use can open the way to a more rapid transmission of knowledge internationally. Even a rudimentary knowledge of oral and written English, for example, enables the citizen of any country to gain new resources of knowledge and culture. These general considerations are strikingly illustrated in efforts toward mutual understanding with the Far East, where language differences are primary obstacles.

With the increasing interest in programs of specific concentration, there has been a further diminution in grants for the general support of humanistic studies. This appears in the record of grants to the American Council of Learned Societies and to the American universities that have had funds for that purpose over a period of years. A few other appropriations were made during 1935 to maintain and to bring to completion projects that had support under former programs.

American Program

Museums

Brooklyn Museum. Training of Museum Personnel

The sum of \$44,000 has been appropriated to the Brooklyn Museum for the training of personnel in the use of new techniques in the visual

presentation of museum objects. This grant, available during the two-year period beginning September 1, 1935, enables the Brooklyn Museum to offer fellowships to young persons with training in museum work and to provide materials for the experimentation which they will undertake.

In the training of museum workers there is growing need for experience in the application of new techniques of visual presentation. Moreover, university training has not ordinarily provided direct contacts with the more practical aspects of museum administration, especially as they relate to discovering and meeting public needs. Provision for these special workers at the Brooklyn Museum is due in part to the unusual opportunity offered by the reorganization of the museum's exhibits. In the course of this reorganization students are able to test the possibilities of new equipment for display, new methods of arrangement, the use of lighting to control attention, and various other means intended to make evident to visitors the significance of materials exhibited. In addition, they are given special assignments by which they are responsible for planning, assembling, installing, cataloguing, labelling, and publicizing temporary exhibitions. In weekly seminars questions arising from the experimental work and the theory of modern



Photograph Excised Here

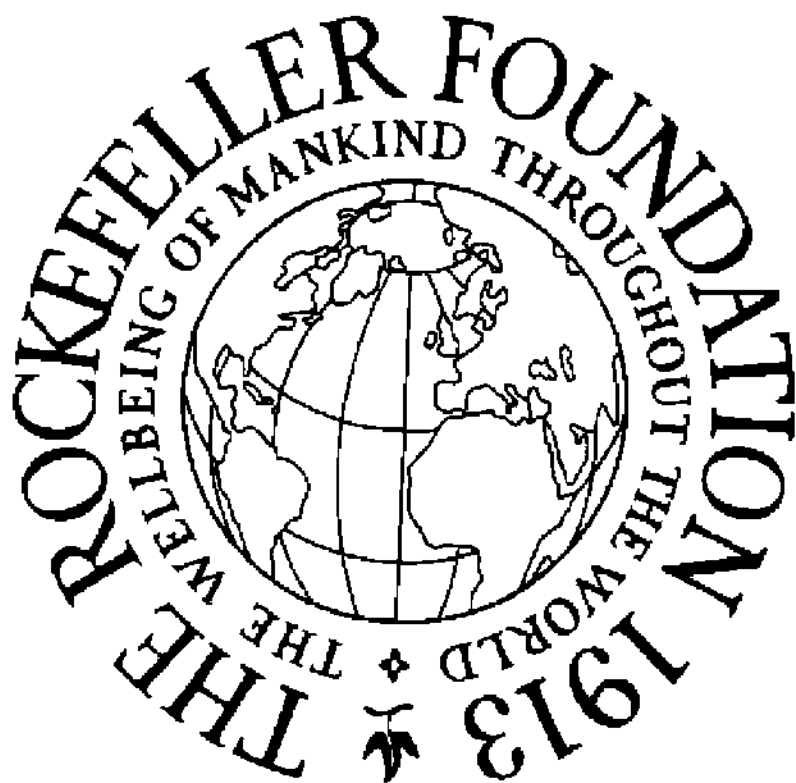
Gallery at the Brooklyn Museum, where the Foundation is contributing toward experimental training of museum personnel in new techniques of exhibition arrangement

museum practice are discussed. From time to time members of the museum staff, educators, and workers from other museums are invited to take part in these seminars.

It is expected that these studies and demonstrations will result in the publication of reports on current museum practice and its further development. Appointments to the fellowships are made by the Brooklyn Museum.

New York Museum of Science and Industry

There has been appropriated to the New York Museum of Science and Industry the sum of \$50,000 for development of new methods of museum exhibition during the three-year period January 1, 1936, to December 31, 1938. For several years the city of New York has had access to the Museum of Science and Industry, opened under a benefaction of Mr. Henry R. Towne. Since 1914 all the accumulated and current income from the estate of Mr. Towne has been given to the museum, and under the direction of the late Mr. Charles R. Richards an excellent beginning was made with new forms of popular exhibit. The trustees of the Towne estate and the trustees of the museum have now formulated a plan which looks toward operation under more favorable conditions. Five leaders in representative industries have agreed to take membership



Photograph Excised Here

A reading room in the Radcliffe Library, one of the Bodleian group at the University of Oxford. For the past five years the Foundation has aided the university in reconstructing and developing these libraries.

on the board of directors under the chairmanship of Mr. Frank B. Jewett of the American Telephone and Telegraph Company. A new location for the museum became available, to which it was moved at the beginning of 1936.

The aim of the museum is to increase general understanding of the forces which applied science has brought into social and economic life. Broadly speaking, the procedure by which it is hoped to attain this result is through operating exhibits that show simply and clearly fundamental scientific phenomena underlying important scientific advances. Supplementing these primary exhibits are specific operating exhibits of important industrial developments that are related in practice to the principles demonstrated in the fundamental exhibits. The purpose is to illustrate as vividly as possible the general relation of each particular scientific application to the affairs of life. A small admission charge is necessary, though provision has been made for the free admission of school groups.

The museum is organized somewhat after the pattern of the German Museum of Munich and the South Kensington Science Museum of London. In the United States there is a wide opportunity for improved methods of exhibition and demonstration, not only on the plans of these established museums of science and industry

but also on those acceptable for smaller museums of applied science. The present grant is to support a period of intensive experimentation in developing such methods under favorable conditions.

Drama

University of North Carolina

The University of North Carolina has received further assistance for its work in drama under the direction of Professor Frederick H. Koch, through a grant of \$9,500 for use during the two-year period from July 1, 1935, to June 30, 1937. This university is a major center for the development of drama as a college and regional activity. The immediate aim of the grant is to assist Professor Koch and the university administration in establishing the work more securely as a recognized educational service. The funds provided by the Foundation will be used to purchase equipment for experimental production, for training of graduate students chosen to assist in special phases of the work, and for extension service in schools and communities throughout the state.

Support from an earlier grant has developed a wider interest in the state of North Carolina in the use of drama as a means of self-expression and constructive recreation. Many of the plays written and produced at the university have dealt with the life and folklore of the surrounding

country. These give just and vivid interpretations that set standards for similar productions elsewhere and also preserve American cultural traditions in a form suited to popular understanding. The value of the dramatic work at the University of North Carolina is apparent in the enrollment of students from other regions and from other countries, as well as in the repeated production of original plays.

State University of Iowa

Of the \$40,000 appropriated to the State University of Iowa for further development of its work in drama during the period from October 1, 1935, to December 31, 1937, the sum of \$25,000 was for materials needed in the construction of the new theater unit in the fine arts group. The university has had assistance from other philanthropic agencies and from the Federal Government in realizing the comprehensive plans begun by the state authorities. When the fine arts group is completed, the university will have a wider influence on the development of native talent and on public appreciation of original work in music, painting, sculpture, and drama. Public regard for the Department of Speech and Dramatic Art is shown by the increasing number of graduate students enrolled for the work of the regular session and of the summer terms. During the summer of

1935, 410 teachers majored in drama. To meet demands such as these the new theater and workshops will afford adequate facilities for work in every phase of dramatic production.

**Western Reserve University
and
The Play House Foundation, Cleveland**

The Foundation has appropriated \$15,000 to Western Reserve University for the use, during the three-year period from July 1, 1935, to June 30, 1938, of the Department of Drama and Theatre of its Graduate School, and \$38,000 to the Play House Foundation of Cleveland for its program in community drama, on condition that an equal sum is raised in cash from other sources before June 15, 1936. The grant to Western Reserve University will enable Professor Barclay S. Leathem to strengthen his staff and to provide for further cooperation between the university department and the Cleveland Play House, which is already giving Western Reserve students direct contact with professional methods through observation at rehearsals and participation in some of its productions.

Within the university, Professor Leathem cooperates with other departments in the production of operas, masques, and plays, providing practical application for the regular work of his

own department. To enlarge the experience of its students still further, the department serves outside organizations in the city of Cleveland and in schools of the surrounding area. Students have opportunity to gain practical experience by participating in plays staged at the campus theater and by aiding some forty school, church, and settlement groups in preparing for the play festival arranged annually by the department. Work in courses is demonstrated in student productions, to the number of six full-length plays performed publicly each year and from thirty to forty one-act workshop presentations. The students also take their plays to thirty-five high schools.

The Cleveland Play House, one of the most successful community organizations in the country, is now in its twentieth season. Its building houses two theaters, which are operated non-commercially by a full-time staff of actors, technicians, and directors. Attendance during the past year was considerably over a hundred thousand. Local support of the Play House is sufficient to make it also an important center for training of community directors, and it is believed that the completion of the plan now aided by the Foundation will stabilize these educational functions.

In addition to producing fifteen plays during a season, the Play House conducts an apprentice

school and cooperates with the university in formal instruction. It carries four graduate courses for students from the university and provides free training for its own group of thirty-five students chosen from a large number of applicants from all parts of the country. In 1935 thirty-four students came from twelve states and one from Mexico City. The Play House also carries on extensive work with high school pupils in presenting selected plays for their instruction and maintains a children's theater that reaches all lower levels of the public school system.

The Cleveland Play House Foundation has demonstrated that a leader with an understanding of the needs and interests of a community and with adequate support can establish a theater of social significance. The success of this venture should have wide influence on other American communities.

**Yale University
Drama Library**

Yale University has received an appropriation of \$10,000 for the development of the library of the Department of Drama during the three-year period September 1, 1935, to August 31, 1938. The aim is to aid in developing the Yale library of materials on stage production to the point of

maintenance by the Department of Drama on its regular budget.

This is the second Foundation grant toward the creation of a collection of photographic prints, fully documented, that will provide an international record of theatrical history. Materials gathered for the library under the previous grant have proved of substantial value in the training offered by the Department of Drama. About 15,000 photographs, mainly of stage and costume designs, have been collected, of which the majority had not been noted or described hitherto by historians of the theater. Through their use students are gaining an acquaintance with stage practice in the past and are drawing on tradition for the presentations which they direct. Study of these materials also gives graduate students in the department a sound understanding of many points in theatrical history. The university furnishes copies of prints from this collection to students elsewhere and arranges loans to other centers of dramatic study throughout the United States.

Film

**Museum of Modern Art, New York City
Motion Picture Department**

An appropriation of \$120,000 has been made to the Museum of Modern Art in New York City,

for use during the period ending June 30, 1938, toward the establishment of a motion picture department. This sum will be used to develop a library of films for showing on loan by non-profit organizations throughout the United States. The project is expected to become self-supporting by the end of three years.

Although the motion picture is a cultural resource of great importance to the mass of the population, little has been done to arouse a critical and selective attitude toward the film. The situation is very much as though no novels were available to the public except the current year's output, or as though few paintings were ever exhibited save those executed within the previous twelve months. Many who can trace the development of modern art and drama in the works of their creators are ignorant of the work of the great motion picture directors of the past; yet the films which these and other men have made have had an immeasurable influence on the life and thought of a wide public. This new and living form of expression is such a young art that it can be studied from its beginnings. "Primitives" among moving pictures are only forty years old. Yet these early films are very hard to obtain and are in danger of being lost or destroyed, in spite of a genuine public interest in their preservation and exhibition.

The growing demand for a comprehensive record of all types of film can best be met through a central library of films supplemented by an information service based on research in the development of the art of motion pictures. Though there now exist, both nationally and internationally, non-commercial organizations interested in the art of film production, no central organization is primarily interested in this aspect of cinematography and none exists to further the study of the film by making materials accessible to student groups. The plan of the film library of the Museum of Modern Art is to compile an index to all films of interest or merit produced since 1889, both American and foreign; to trace, secure, and preserve the more important examples from each period; to assemble films into programs for exhibition by colleges, museums, and community organizations; and to compose program notes on each exhibition providing critical appraisals as aid in appreciation of the medium. These ends will be attained as rapidly as possible by gathering critical materials, including unrecorded data still in the minds of the men who developed the film, and by maintaining contacts with interested individuals and groups in all countries through regular publication of a bulletin. Cooperation in maturing these plans has

been pledged to the museum by many individuals and organizations.

Radio

University Broadcasting Council, Chicago

The University Broadcasting Council has received \$46,000 for developing radio programs of educational and cultural value. The council is a non-profit corporation. Its affairs are controlled by a board of trustees consisting of two representatives of each of the participating universities—the University of Chicago, Northwestern University, and DePaul University. The director of the council is Mr. Allen Miller, who for some years served as director of the Radio Department of the University of Chicago.

The council was organized to provide for the coordination and further development of broadcasting of an educational and cultural nature, with particular regard to the Chicago area. It acts for the universities in developing, scheduling, and broadcasting radio programs of an educational nature to be presented under their auspices. It has entered into agreements with local radio stations, including the outlets of three networks, by which it engages to make such programs available for broadcasting. Provision has been made for the establishment of a central office in Chicago, for the maintenance of campus

studios at the universities, for the salaries of staff, including a director, a publicity director, an office manager, and secretaries, and for technical and engineering service. The council has the services of specially qualified writers and other persons with broadcasting experience, and provides this staff with technical facilities such as have seldom been available for programs of an educational or cultural nature.

This experimental work of the council affords an opportunity for promoting the development of broadcasting in the public interest in a situation where the pooling of regional resources may be expected to result in the more effective use of the radio for cultural and educational purposes. One of the better known features now on national broadcast is the University of Chicago Round Table, providing for extemporaneous discussion of current affairs in the fields of politics, economics, and government. The three participants in these weekly round table talks are usually drawn from the faculty of the University of Chicago. Other features are a dramatic treatment of every-day legal questions; "Book Talks," a series of extemporaneous book reviews presented by an outstanding authority on American literature; and "Titans of Science," a series of biographical sketches of great scientists.

The grant to the council also provides for

checking with listeners the effectiveness of its programs, so that the council is in a position to test the possibilities of the programs prepared by its staff for the cooperating stations. Its activities should indicate new ways in which commercial radio may serve the educational and cultural wants of its audience.

World Wide Broadcasting Foundation, Boston

The sum of \$25,000 has been appropriated to the World Wide Broadcasting Foundation for the experimental development of radio programs. This foundation is a non-profit corporation which aims to develop, produce, and broadcast programs of a cultural, educational, artistic, or spiritual character, and to arrange for an interchange throughout the world of constructive radio programs. For these purposes it has the use of W1XAL, a short-wave station in Boston, Massachusetts. Under the terms of its license, W1XAL is assigned the non-commercial use of four short-wave channels by means of which it reaches listeners in all parts of the world. It is regularly heard in Europe, South Africa, South America, and in all sections of the United States.

Programs of the World Wide Broadcasting Foundation are broadcast over W1XAL four times weekly during the best listening hours. Programs for Sunday are planned primarily with a

view to the interests of the international audience. Those for Monday evening deal with the technical aspects of radio. On Tuesday and Thursday evenings the programs are more academic in character. These have included talks on language, literature, art, music, zoology, astronomy, and history, in addition to musical and dramatic features. Of particular interest is a series of talks on Basic English. In the preparation of these various programs the World Wide Broadcasting Foundation has the cooperation of members of the faculties of colleges and universities in and about Boston and of leaders in the field of adult education.

Experiments at Station W1XAL are expected to indicate a type of public service that radio may properly provide if it is to realize its possibilities as a cultural medium. Responses from listeners prove the power of its appeal and the range of interest not satisfied by current commercial offerings. Listeners are ready to pay a small membership fee entitling them to advance notice of programs for each month. They send letters of comment on past programs and suggestions for future offerings. Such cooperation gives ground for expecting a continued development of cultural interest and mutual understanding through such use of the radio, both within our own country and internationally.



Photograph Excised Here

Scene from the motion picture *Intolerance* (1916), one of the outstanding films preserved for exhibition and circulation by the Museum of Modern Art in its film library.

International Program
Cultural Interchange through Libraries
Bibliothèque Nationale. General Catalogue

The Society of the Friends of the Bibliothèque Nationale, Paris, has received from The Rockefeller Foundation the sum of \$6,000 toward the expenses of printing volumes of the General Catalogue of the library to be issued between July 1, 1935, and June 30, 1936. This assistance will enable the society to sell these volumes in America at \$10 each.

In 1929 the Foundation appropriated \$12,000, payable at the rate of \$1,000 a year, to assist in preparation of materials for a general catalogue of the Bibliothèque Nationale. With the assurance of a steady rate of production, one hundred American libraries agreed to pay \$10 a volume for the estimated ninety-six volumes to complete the set. The plan worked satisfactorily until the autumn of 1933 when exchange rates increased greatly, with a consequent loss of subscribers in this country. In June 1934 the Foundation made an additional appropriation of \$5,000 toward the expenses of printing the volumes of the catalogue issued between January 1, 1934, and June 30, 1935. This action, by making possible the sale of the catalogue in the United States at \$10 a volume, enabled American libraries to continue their subscriptions.



Photograph Excised Here

Scenes from new plays produced at the University Theater, State University of Iowa, where the Foundation is contributing toward the development of dramatic art. Above: *Prologue to Glory*, based on episodes in the early life of Lincoln. Below: *In the Shadow of a Rock*, a play presenting aspects of frontier life in Nebraska Territory in 1849.

This appropriation of \$5,000 made in June 1934 was virtually exhausted by the publication of the four volumes issued during the period covered. The present appropriation of \$6,000 is regarded as sufficient for the five volumes to be published during the year beginning July 1, 1935.

This grant, like that of 1934, is for the benefit of the original American subscribers whose participation made it possible for the Bibliothèque Nationale to undertake the systematic production of its printed catalogue. Through the American Library Association an immediate effort is being made to have the contracts of American subscribers reviewed, so that a new plan of subscription can be made effective before the expiration of the present grant on June 30, 1936.

An appropriation of \$10,500 has also been made to the Bibliothèque Nationale toward the expense during the period July 1, 1935, to December 31, 1936, of classifying a collection of 1,300,000 index cards given to the Bibliothèque Nationale by the Library of Congress, Washington, D. C.

The Bibliothèque Nationale, like most European libraries, depends primarily on an author catalogue of its holdings. As the Library of Congress system of card classification enables the scholar to find under subject headings large bod-

ies of material on a given topic, foreign librarians are increasingly disposed to make use of the Library of Congress service. It has been adopted in the Vatican Library and is being studied carefully in other countries. Recently the Bibliothèque Nationale accepted from the Library of Congress a gift of over a million catalogue cards and will receive the annual additions of some 40,000. There are available in Paris persons familiar with the Library of Congress system who can be recruited for the work of classifying this material. Such classification is needed to put the cards in proper use, and the Bibliothèque Nationale will maintain the service to classify the yearly additions from the Library of Congress. The value of this material to European scholars may be judged by what has been accomplished thus far. Work is in progress dividing the cards into the following general classifications: bibliography, political science, fine arts, science, agriculture, medicine, and geography. By using the indexes a scholar can find at hand all the titles in his field that have been catalogued in the Library of Congress. He will find the writings of authors not likely to be known to him as workers in his special subject and will also get new titles that would not appear in the larger European libraries for several years. The catalogue, therefore, will assist scholars in choosing titles for pri-

vate purchase, and will give librarians prompt report of new works published in the United States.

**The Library Association, London
Information Service**

As an aid to all phases of the work of the Library Association of Great Britain, the Foundation has appropriated \$17,625 to be used during a two-year period in extending the resources of its information service on library practice. Materials will be sought in other countries as well as in Great Britain, and delegated representatives of the association will report on specific aspects of library work in the United States and in Europe. The association will thus greatly strengthen its work on such general problems as classification, distribution, and local control of book collections. It also will be enabled to advise local authorities on the design and fitting of library structures for various kinds of service in rural communities, towns, and cities.

The development of these services is due to the rapid growth of the association during recent years and to new demands put upon it by workers in adult education and by the more newly established colleges of Great Britain. The establishment of county library systems also has forced various local authorities to turn to the association for guidance. In its new headquarters adjacent to the National Central Library and

within a short walk of the British Museum, the association is admirably situated to serve these demands through cooperation with these other national centers of library work.

Means of International Communication

**Teachers College, Columbia University
Studies in English Usage**

Columbia University has received \$36,000 for use of the Institute of Educational Research, Teachers College, in carrying out studies of English usage under the direction of Professor E. L. Thorndike during the three-year period May 1, 1935, to April 30, 1938. The purpose of this study is to determine, for the guidance of persons preparing textbooks and manuals of instruction for the teaching of English as an auxiliary language, what meanings of words should be indicated in an initial English vocabulary. It therefore has a direct bearing on efforts to advance international understanding in those countries where English is the language next in importance to the vernacular. Governmental advisers on the teaching of English in Turkey, Japan, China, India, and the British colonial possessions recognize the need of such guidance as this study should provide.

The fundamental research required in this task falls to the psychologist, who has a sensitive-

ness to the importance of language as a social instrument, rather than to the general student of linguistics. Professor Thorndike, who has done work in this field for many years, will direct the staff organized for the elaborate analysis of English usage. The routine of this study will be similar to that for selecting words on the basis of frequency of occurrence in a large collection of samples from current materials in print. In this case, however, the tabulations will be on the occurrences of words having many accepted meanings, and the aim will be to determine by a semantic count which of the several meanings attached to a given word are to be taught to beginners. This process calls into play wholly new factors requiring the use of expert workers who read the context of each word, remember or consult a list of its established meanings, and then record their findings in a systematic manner.

Orthological Institute, London
Basic English in the Far East

A grant of \$34,425 to the Orthological Institute, London, is directed toward the improvement of international communication by methods which have had support from the Foundation since 1932. In that year the Foundation granted the Orthological Institute the sum of \$35,000 for developing and testing the usefulness of Basic English as an auxiliary language in China and

Japan. As an outcome of this grant, textbooks and reading materials adapted to the needs of Japanese learners have been provided. Exploratory work in China during the same period has laid the foundation for the development foreseen under the present appropriations.

Basic English is largely the work of C. K. Ogden, the director of the Orthological Institute in London, where investigations have been maintained over several years looking toward the readier use of English in all countries of the world. The Foundation's recent grant, which will aid the institute in its plan for a library of books in Basic English on significant aspects of Western civilization, primarily for Chinese readers, was made in recognition of an unusual opportunity for extending the usefulness of Basic English in the Orient. A recently established branch of the institute in Peiping under the direction of American workers has made substantial progress in introducing Basic English in China. Chinese versions of Basic materials for learners are now available, and the cooperation of the Western Languages Association of China is assured on work in the schools. Other agencies will assist in plans of work for adult groups and for the reading public generally. The entire program is directed toward simplification of the initial stages of language learning, particularly for those who

wish to use English as their second tongue for daily communication.

Experience has shown that the materials of most use to Oriental readers are those which aid them in understanding Western civilization, particularly in its scientific and technological aspects. The Orthological Institute in London, therefore, is undertaking, during the period covered by this portion of the grant, the preparation of twelve sample volumes. A study has been made of standard expositions of the sciences in English and other languages that can readily be adapted for such use. There also is need for a dictionary giving Basic explications of some 10,000 scientific terms to make them understandable internationally. This dictionary will probably constitute one of the first of the twelve sample volumes. Arrangements have been made whereby these books can be made available through Chinese publishers at a price which will insure their wide distribution in China.

**Development of Mutual Understanding
with the Far East**

**Library of Congress
Far Eastern Center**

The Library of Congress has received a grant of \$30,000 for further development of the Far Eastern Center in its Division of Orientalia during the three-year period from September 1,

1935, to August 31, 1938. The grant carries on a plan initiated by the American Council of Learned Societies through aid from the Foundation in 1933.

This plan was drafted to enable American students to pursue their advanced studies on Far Eastern subjects under guidance, so that they may make the most advantageous use of the Chinese and Japanese collections at the Library of Congress. Those admitted to training are persons who have had at least two years of residence in the Orient and possess a basic knowledge of either Chinese or Japanese. The director is aided by native assistants who are under term appointments. The general project for training in Chinese is the preparation of at least 2,500 biographies of eminent Chinese living during the past three centuries. This cooperative effort is intended to produce the first reference work of such character in a Western language. Other activities of individual scholars are the translating of Chinese documents on agriculture, medicine, and historical subjects; preparing an English version of a Japanese chronological history; and translating contemporary papers for government departments. During the past year twenty Americans, Chinese, and Japanese have been working together in these related enterprises. It is assumed that most of the workers at this

center will gain positions in American colleges and universities where they can apply their knowledge of Chinese and Japanese in increasing American understanding of Far Eastern cultures. Other demands for qualified scholars come from trade sources and from the government.

**National Library of Peiping
Quarterly Bulletin of Chinese Bibliography**

The lack of national and current special bibliographies has made it extremely difficult for the foreign scholar to find out what books and articles are published in China. In the fall of 1931 the plan was conceived of issuing a small bulletin of information in English, to be circulated abroad as advertising material by the Peiping Union Book Store under the title *Book News from China*. The response was immediate and general. At the end of 1933 it was felt that there was an urgent demand for a more complete bibliographical bulletin in English. The Chinese National Committee on Intellectual Cooperation in Shanghai then agreed to furnish the funds for printing the *Quarterly Bulletin of Chinese Bibliography*, to be edited under the auspices of the National Library of Peiping. The first number of this publication was issued in April 1934. The desire of the editors of the bulletin is to furnish a current bibliography, suitably annotated, for the

use of foreign sinologues as well as for scholars having more general interests.

The other aspect of the problem is to make the English section of the bibliography adequate for the needs of librarians as well as of foreign scholars, and for this service the support from Chinese sources is not now adequate. The Foundation therefore appropriated \$5,000 toward that purpose, to be used during the period October 1, 1935, to December 31, 1938. International distribution of the bulletin is assured through the Chinese National Committee on Intellectual Cooperation and the National Library in Peiping.

**Institute of Pacific Relations. American Council
Chinese Language Study**

To the American Council of the Institute of Pacific Relations there has been appropriated the sum of \$17,500 for work during a three-year period on methods of teaching the Chinese language to English-speaking students. A review of all existing manuals will be undertaken as a preliminary to the production of others devised to aid in the rapid learning of Chinese for a wide variety of uses. The need for such material has been demonstrated in the summer seminars of the institute and of the American Council of Learned Societies, conducted for the benefit of American students of Far Eastern subjects; and

this lack of satisfactory texts is recognized in other countries as well.

The attack on this problem is to be made under the leadership of Mr. George A. Kennedy, with the cooperation of the linguistic specialists of Yale University. Experience in China and foreign study have given Mr. Kennedy an exceptional knowledge of colloquial Chinese and likewise an understanding of current methods in teaching and in research. A preliminary trial of the first stage of the work on new teaching methods will be made during the summer of 1936 at the University of Hawaii. Separate phases of the plan are based on recent Chinese practice for teaching 1,000 characters to illiterates, on studies of American psychologists and linguists, and on the methods of Professor George Z. Patrick for intensive training in Russian by means of graded readings within a limited vocabulary. The manuals prepared during the first year and a half will be tested further in a language school to be organized for 1937 and 1938. The project has received support both from Yale University and from the Institute of Pacific Relations.

**Harvard University
Work in Oriental Art**

Harvard University has received from The Rockefeller Foundation \$7,500 for the services of a Japanese scholar working in the collections

of material on Oriental art at the Fogg Art Museum during the three-year period beginning July 1, 1935. It is hoped that relations which have already been established between Harvard University and the Institute of Art Research in Tokyo will be further strengthened by this plan for facilitating the study of Japanese art in this country. The aim is to render more readily accessible to Western scholars all works on Far Eastern art written by scholars in the Orient, through the preparation of translations, abstracts, and reports of work in progress. The work will include the preparation of indexes of certain Japanese periodicals dealing with Far Eastern art and the compilation of bibliographies and chronological lists not now available in Western languages. The result will be the production of a permanent and fundamental body of source material for workers in the field.

The Harvard collection of documented photographs of Oriental art has reached the total of 11,750 items and its illustrated publications include the great bulk of Japanese, Chinese, and European monographs and periodicals that deal with this subject. From another source are provided funds for further purchases for at least two more years, as well as salaries for librarians who will continue to mount and annotate the materials that have accumulated. The Japanese

scholar appointed for this duty at the Fogg Museum is Mr. Taizo Nonaka, a graduate in fine arts and Oriental history from the Imperial University.

General Program

Though continuing to give limited aid to the appropriate bodies for promoting humanistic studies, the Foundation is terminating its general support of university research in the humanities. In past years the Foundation has made term grants to seven American universities in support of their general research programs of this nature. The universities which have received such assistance are Chicago, Columbia, Harvard, Johns Hopkins, Michigan, Princeton, and Yale. A five-year grant of the General Education Board made to the University of Virginia, terminating in June 1935, was for the same purpose as the aid of the Foundation to the institutions named above.

During the year grants to these eight universities for advanced work in the humanities came under review. An analysis was made of the humanistic studies now going on at these institutions under general grants from The Rockefeller Foundation and, in one case, from the General Education Board. These grants had already been reduced as to annual amounts and

length of term, such reductions beginning in 1932. The review of 1935 was therefore in line with an earlier change in policy, but was directly due to the new formulation of Foundation program in 1934.

In June 1935 the following terminal grants were made, in each case to provide a general research fund under institutional administration: (1) The University of Chicago: \$75,000 during the four-year period July 1, 1935, to June 30, 1939; (2) Columbia University: \$25,000 during the calendar years 1936 and 1937; (3) Harvard University: \$30,000 during the calendar years 1936 and 1937; (4) Johns Hopkins University: \$30,000 during the two-year period July 1, 1935, to June 30, 1937; (5) University of Michigan: \$47,500 during the three-year period July 1, 1935, to June 30, 1938; (6) Princeton University: \$7,500 during the year July 1, 1935, to June 30, 1936; (7) University of Virginia: \$10,000 during the two-year period July 1, 1935, to June 30, 1937.

These sums are believed adequate to care for projects involving employment of assistants during the academic year 1935-36 and those in process of publication at the time of review. The grants will not carry all projects now under way to the point of completion, but they are believed sufficient for the more pressing needs of these

universities, making possible the accomplishment of all their definite commitments. Assistants under temporary appointment for work on projects can be carried for at least one year, and in cases where the printing of finished work has begun, the process of publication will not be interrupted.

The increasing concentration of Foundation program is leading to a curtailment of the funds available for the general support of national councils and planning agencies internationally useful to humanistic scholars. The American Council of Learned Societies has received an appropriation of \$90,000 toward support of its general activities, available at the rate of \$30,000 a year over the three-year period from July 1, 1936, to June 30, 1939. In addition \$25,000 was appropriated to the council for fellowships and grants in aid in the humanities during the period ending June 30, 1937. These grants represent greatly reduced support of the central organization and of aid to individual scholars.

Fellowships and Grants in Aid

In 1935 the Foundation continued its administration of fellowship support to work connected with the fields of concentration of its present program, appropriating \$25,000 for fellowships

in the humanities for work in 1935, and \$35,000 for fellowships during 1936.

The total number of fellowships in the humanities administered directly by the Foundation in 1935 was 12. The fellows were distributed as to country of origin, as follows: China, 4; England, 2; France, 2; Mexico, 2; Hawaii and Italy, 1 each. Eight of these studied administrative practice of American libraries. Two were engaged in study of the drama in the United States, and two in study of the Japanese and Russian languages. With the funds made available by the Foundation, the American Council of Learned Societies during the calendar year 1935 had 28 research fellows at work in the following fields: history, 8; philology and literature, 8; archeology, 2; philosophy and history of science, 3; linguistics, 3; and Far Eastern studies, 4. The countries of study were: United States, 8; France, 5; Italy, 4; Greece, 4; Great Britain, 2; Japan, 2; China, Yugoslavia, and Persia, 1 each. In addition the American School of Classical Studies at Athens, from funds supplied by the Foundation during 1935, administered 10 fellowships in archeology.

During the past year a number of grants in aid in the humanities were administered by the Foundation directly, a total of \$80,000 being appropriated for grants in aid in 1935 and 1936.

These fall within the special fields of concentration of the present program in the humanities. Among them are: \$4,500 to Columbia University for reorganization of the work in drama; \$3,500 to Professor Howard Mumford Jones of the University of Michigan, to assist him in his work on the history of American cultural development from 1700 to 1770; \$1,500 to the University of Texas to enable Miss Fannie Ratchford to complete a study of community life in the period of Texas colonization; \$3,060 to the League of Nations Library, Geneva, for an assistant librarian to develop the medical and social sections of the library and for research in the field of public health; \$2,500 to Professor William M. Randall of the Graduate Library School of the University of Chicago for a survey of source materials in research libraries of the Near East; \$2,400 to enable the Vatican Library to produce a Spanish translation of the Vatican cataloguing rules for the national libraries of South America; \$1,000 to Dr. F. J. P. Schauwers of the Royal Library of Belgium, to aid him in studying methods of book classification in American libraries; \$3,000 to Harvard University to enable Mr. Francis C. Jones to prepare a book on China for the Modern States series; \$2,400 to assist Mills College, California, in developing Far Eastern studies by obtaining the services of Miss Helen

B. Chapin during a three-year period; \$1,500 to the University of Chicago for the materials and expenses of Mr. H. G. Creel in teaching Far Eastern history; \$1,000 to Princeton University for the materials and expenses of Mr. Robert K. Reischauer in the teaching of Far Eastern modern history and political science; \$500 to the Art Institute of Chicago for international collaboration in completing a definitive study of prints relating to the Japanese theater; and \$500 to the University of Colorado for the materials and expenses of Mr. Earl J. Swisher in developing a college program in Far Eastern studies.

Outside of regular appropriations for grants in aid, the Foundation made available during 1935 further emergency research funds for deposed European scholars; of these funds \$25,390 was used for aid to scholars in the humanities. At institutions in Europe and the United States in 1935 there were working in the humanities 26 deposed scholars who were partly supported by funds granted by The Rockefeller Foundation.

Former Program

**Yale University
Excavations at Dura-Europos**

A grant of \$30,000 has been made to Yale University toward the support of its excavations at Dura-Europos in Syria during a two-year

period beginning July 1, 1935. This project has received Foundation support since 1931, first through a special grant and later through the general research fund for work in the humanities at Yale.

The historical significance of the site of Dura-Europos on the Euphrates had been surmised because of its location on an eastern trade route and by reason of the successive occupancy of the town by Eastern and Western races up to the end of the third century. From then to recent times the site remained untouched, and little excavation had been done when Professor Rostovtzeff began his work there in 1928. The Foundation grant of 1931 was designated for the completion of work on only those parts of the site known to be particularly important for an insight into the economic and social life of Syria through the Greco-Roman period.

During the campaigns of 1933 and 1934 the Yale expeditions made unexpected discoveries in the field of art, calling for more intensive work before the abandonment of the site. The excavators uncovered a Christian chapel, a sanctuary of the Persian god Mithras, and a Jewish synagogue containing unique mural paintings on religious themes. The discovery of these places of worship provided a new means for the study of the influence of pagan cultures upon later devel-

opments of Christian art in the West. The evidences are found in murals and in articles of wood, stone, and leather, and in textiles. The present grant will be used for the expenses of completing the recovery of the mural paintings and for the further excavation of certain defined areas.

**University of Chicago
Oriental Institute**

The sum of \$35,000 has been appropriated by The Rockefeller Foundation to the University of Chicago for support of the research and field work of the Oriental Institute. This is a supplementary grant, available during the remainder of the calendar year 1935. The Foundation has made annual grants for this work since April 1932.

As in immediately preceding years, the Foundation in 1935 also contributed extensively toward the support of the regular research and field work of the Oriental Institute. In addition to the special appropriation mentioned above, the amount given to the institute in 1935 was \$395,000.

In 1930 the Persian Government gave the Oriental Institute important concessions for work in Persia. Excavations were begun on the Persepolis site and have gone forward there continuously during a period of five years. Rapid

progress has been made and significant results have been gained during this period.

Professor Ernst Herzfeld, who was in charge of the expedition, centered the work of excavation within a circle thirteen miles in diameter around the site of Persepolis. During the past two years, widespread notice has been given to the more striking discoveries of the expedition, such as the public buildings and the palaces of Darius and Xerxes. Quite as noteworthy, however, are the evidences of prehistoric man discovered in a stone-age village within the area. This minor site has yielded decorative pottery and implements that are dated at about 4000 B.C. At other points in the Persepolis district there are now known to be evidences of the course of civilization continuously from 4000 B.C. to 330 B.C., and many wholly new facts have been established thus far through other excavations at significant points. The results gained in Persia up to the present time give assurance that continued excavation will yield highly important data regarding the entire course of Eastern civilization.

Though this activity in Persia was contemplated from the beginning of the institute's program for a study of the rise of civilization, the support of The Rockefeller Foundation has been devoted hitherto to field work in Egypt, Pales-

tine, and the areas north and northwest of Persia. These field projects have led to the provision of buildings for headquarters at major sites and at the University of Chicago. The workrooms of the institute in Chicago furnish complete services for the preparation and study of finds, and also for research in the historical aspects of human culture in the Near Eastern area. A museum at the Chicago headquarters provides for the presentation of materials from the field in clearly defined groups and categories, with the result that its exhibits are viewed each year by increasing numbers of persons from the lower levels of school age to the most advanced students of antiquity. Establishment of these exhibits and diminution of activity at older sites represent the completion of the most active period of development in the field and at Chicago headquarters, within the range of the original program of the institute. Major projects, such as the Assyrian dictionary, will carry on for many years according to clearly formulated plans; and the publication of results of current excavations will continue for some time. The seventeen years of development have demonstrated the soundness of the original plans for the institute. The further work of the staff will be directed constantly toward the reconstruction and addition of chapters in the early history of mankind.

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**American School of Classical Studies at Athens
Grants to Former Fellows**

The American School of Classical Studies at Athens has received a grant of \$6,000 for use during the period from July 1, 1935, to June 30, 1936, toward the expenses of former fellows of the school while engaged in preparing final reports on the Agora excavations. The Foundation has provided a number of training fellowships for the Agora excavations since 1929, and has pledged similar help until December 31, 1936. In all, there have been three grants totaling \$36,800 for these fellowships, which gave specially selected advanced students a training period as participants in the Agora excavations. The recent grant provides the salaries of three former fellows during the year 1935-36. These fellows began their training with a full classical and archeological training in the United States, and they are now experienced workers in special phases of archeological research. The time needed to complete the entire program connected with the Agora excavations will be materially shortened by securing these former fellows to complete sections of the general report immediately after their terms of advanced study.

A grant of \$5,000 was also made toward the plans of the American School of Classical Studies at Athens for special publication during the year 1936.

University of Chicago
Chaucer Project

There has been appropriated to the University of Chicago the sum of \$11,000 for completion of the Chaucer project. This project, under the direction of Professor John M. Manly, was assisted under the former program in the humanities in continuance of help given through a grant of the General Education Board in 1927.

The method of work has attracted international attention, and the published results are awaited with interest by scholars working in all fields of medieval study. The initial step in the work was to secure photostats of nearly sixty manuscripts of Chaucer's *Canterbury Tales*. The succeeding task involved the search of private papers and official records at the Public Record Office and elsewhere in England for facts regarding Chaucer's life, the history of his times, and the relationships of the existing manuscripts. The total program calls for a general investigation of various phases of English culture in Chaucer's time and during the following century. It is understood that the present grant will enable the project to be brought to the stage of publication.

University of London. School of Oriental Studies
African Linguistics

Rockefeller Foundation aid to the linguistic work of the School of Oriental Studies, Univer-

sity of London, originated through the need of the International Institute of African Languages and Cultures for men trained in the use of tribal dialects that had not been adequately studied. Help given the latter organization for its economic and ethnological studies in Africa under a grant of The Rockefeller Foundation could be only partially effective until the institute could carry through the necessary linguistic research to provide language training. Therefore the School of Oriental Studies was called upon to assist.

In 1932 the Foundation first supported this work by granting \$36,000 (£9,000) to be used in equal amounts during the three years ending June 30, 1935. In February 1935 a further grant of \$15,000, or enough to purchase a maximum of £3,000, was made, and later extended to provide for the continuance of the work during the period ending September 30, 1936.

Professor Lloyd James, of the School of Oriental Studies, has now made his division of African linguistics an effective center for teaching and research. For the first time in the history of the school, research in African languages has been carried on systematically both at home and in the field. The work of preparing material for publication is going forward steadily. Gramophone records of the Hausa and Efik languages have been made and published

with phonetic transcriptions of the pronunciation. Through individual teaching and the use of records, anthropological students have been given during these past two years a far more effective preparation for their work.

It has been the aim of the school to raise the level of the teaching of African and Asiatic languages to that of modern European language teaching, and to apply to that end all the means and devices available for furthering research and increasing the efficiency of teaching. The students in the Department of Languages and Cultures of Africa, of the School of Oriental Studies, include missionaries, doctors, anthropologists, and political and educational civil servants, who will be responsible for administration and education in Africa; the highly trained staff of experts now in charge of the teaching is the first assembled in this field.

Summary of Appropriations Made in 1935

AMERICAN PROGRAM

Museums

Brooklyn Museum, Brooklyn, New York. Training of museum personnel	\$44,000
New York Museum of Science and Industry. Development of new methods of museum exhibition	50,000

Drama

State University of Iowa, Iowa City. Development of work in dramatic art	40,000
The Play House Foundation, Cleveland, Ohio	38,000

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University of North Carolina, Chapel Hill. Development of drama as a college and regional activity.....	\$9,500	
Western Reserve University, Cleveland, Ohio. Development of the Department of Drama and Theatre.....	15,000	
Yale University, New Haven, Connecticut. Development of the library of the Department of Drama.....	10,000	
Film		
Museum of Modern Art, New York City. Motion picture department.....	120,000	
Radio		
University Broadcasting Council, Chicago, Illinois. Development of radio programs of educational and cultural value.....	46,000	
World Wide Broadcasting Foundation, Boston, Massachusetts. Development of radio programs of educational and cultural value.....	25,000	
	\$397,500	\$397,500

INTERNATIONAL PROGRAM

Cultural Interchange through Libraries		
Bibliothèque Nationale, Paris, France. Expenses of classifying a collection of Library of Congress cards.....	\$10,500	
Society of the Friends of the Bibliothèque Nationale, Paris, France. Expenses of printing the General Catalogue.....	6,000	
The Library Association, London, England. Establishment of a service of information on library practice.....	17,625	
Means of International Communication		
Orthological Institute, London, England. Basic English in the Far East.....	34,425	
Teachers College, Columbia University, New York City. Studies in English usage.	36,000	
Development of Mutual Understanding with the Far East		
Harvard University, Cambridge, Massachusetts. Work in Oriental art.....	7,500	
Institute of Pacific Relations, American Council, New York City. Study of methods of teaching Chinese.....	17,500	

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Library of Congress, Washington, D. C. Development of Far Eastern Center	\$30,000	
National Library of Peiping, China. <i>Quarterly Bulletin of Chinese Bibliography</i>	5,000	
	<hr/>	
	\$164,550	\$164,550
GENERAL PROGRAM		
Termination of General Support to Universities		
Columbia University, New York City	\$25,000	
Harvard University, Cambridge, Massachusetts	30,000	
Johns Hopkins University, Baltimore, Maryland	30,000	
Princeton University, New Jersey	7,500	
University of Chicago, Illinois	75,000	
University of Michigan, Ann Arbor	47,500	
University of Virginia, Charlottesville	10,000	
American Council of Learned Societies, Washington, D. C. Support of general activities	90,000	
Fellowships and grants in aid	25,000	
	<hr/>	
	\$340,000	\$340,000
FELLOWSHIPS AND GRANTS IN AID		
For fellowships in the humanities in 1935 and 1936	\$60,000	
For grants in aid in 1935 and 1936	80,000	
Emergency research aid to depressed European scholars	25,390	
	<hr/>	
	\$165,390	\$165,390
FORMER PROGRAM		
American School of Classical Studies at Athens, Greece Publication expenses	\$5,000	
Grants to former fellows	6,000	
Yale University, New Haven, Connecticut Excavations at Dura-Europos, Syria	30,000	
University of Chicago, Illinois Chaucer project	11,000	
Field work of Oriental Institute	35,000	
University of London. School of Oriental Studies African linguistics	15,000	
	<hr/>	
	\$102,000	\$102,000
Total appropriations		\$1,169,440

1935 Payments

American Council of Learned Societies, Washington	
Completion of the <i>Dictionary of American Biography</i>	\$25,000.00
Development of a training center for Far Eastern studies at the Library of Congress.....	7,149.43
Fellowships and grants in aid in the field of humanistic studies.....	39,017.21
General activities.....	5,331.66
Grants in aid, support of projects, and administration.....	118,812.59
Research in paleography.....	4,954.12
Support of executive offices.....	6,673.00
American Schools of Oriental Research, Baghdad, Iraq; and Jerusalem, Palestine	
Current expenses.....	30,000.00
Endowment.....	9,950.43
Bibliographical Society of America, Providence, Rhode Island	
Index of American newspaper files.....	8,500.00
Bibliothèque Nationale, Paris, France. Expenses of classifying a collection of Library of Congress index cards.....	1,647.50
British Museum, London, England	
Service in connection with the new edition of the Catalogue of Printed Books.....	880.95
To enable the museum to offer to American libraries, at a discount, subscriptions to the new edition of the Catalogue of Printed Books.....	1,682.61
Brooklyn Museum, Brooklyn, New York. Training of museum personnel.....	11,000.00
Columbia University, New York City	
Development of Far Eastern studies.....	5,000.00
General research fund for development of advanced humanistic work.....	25,000.00
Studies of English usage at the Institute of Educational Research, Teachers College.....	9,000.00
Fellowships in humanities administered by The Rockefeller Foundation.....	20,955.39
Grants in aid of research in the humanities.....	24,204.71
Grants in aid of research in the humanities, Europe..	3,250.00
Harvard University, Cambridge, Massachusetts	
Research in the humanities.....	25,000.00
Work in Oriental art.....	750.33
Institute of Pacific Relations. American Council, New York City. Support of Russian language instruction.....	5,000.00
International Committee of Historical Sciences, Zurich, Switzerland. General expenses.....	2,054.03

Johns Hopkins University, Baltimore, Maryland. General research fund in the humanities.....	\$17,949.41
Laboratory of Anthropology, Santa Fe, New Mexico. Interpretative studies in Indian art.....	1,250.00
Library Association, London, England. Establishment of a service of information on library practice.....	2,183.50
Library of Congress, Washington, D.C. Accumulation of source materials for American history.....	10,000.00
Development of Far Eastern Center in the Division of Orientalia.....	5,500.00
Museum of Modern Art, New York City. Establishment of a motion picture department.....	22,000.00
New York Museum of Science and Industry, New York City. Development of new methods of museum exhibition.....	5,000.00
Orthological Institute, London, England. Research in the Chinese and Japanese languages in relation to Basic English.....	7,500.00
Princeton University, New Jersey. Research in the humanities.....	11,250.00
Prussian State Library, Berlin, Germany. Preparation of material for the Union Catalogue of Prussian Libraries.....	4,057.22
Research aid fund, Special, for European scholars.....	25,390.00
Society of the Friends of the Bibliothèque Nationale, Paris, France. Expenses of printing the General Catalogue.....	3,526.79
State University of Iowa, Iowa City. Development of work in dramatic art.....	22,500.00
<i>Thesaurus Linguae Latinae</i> , Munich, Germany. General budget.....	4,000.00
University Broadcasting Council of Chicago, Illinois. Development of radio programs of educational and cultural value.....	9,250.00
University of Chicago, Illinois General research fund in the humanities.....	25,000.00
Preparation of the <i>Historical Dictionary of American English</i>	6,250.00
Studies in comparative philology.....	18,946.61
Oriental Institute. Support of foreign work.....	381,069.27
University of London, England. School of Oriental Studies. Research in African linguistics.....	15,337.50
University of Michigan, Ann Arbor. Research fund in the humanities.....	25,000.00
University of New Mexico, Albuquerque. Studies in Hispanic-American culture.....	3,000.00

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University of North Carolina, Chapel Hill. Development of drama as a college and regional activity...	\$2,750.00
University of Oxford, England	
Development of the Bodleian and other libraries...	55,945.67
Visits of architect and librarian to the Continent, the United States, and Canada.....	445.13
University of Texas, Austin. Studies in Hispanic-American culture.....	3,750.00
University of Virginia, Charlottesville. General research fund in the humanities.....	3,750.00
Virginia Historical Society, Richmond. Preparation of the <i>Virginia Historical Index</i>	6,000.00
Western Reserve University, Cleveland, Ohio. Development of the Department of Drama and Theatre...	2,500.00
World Wide Broadcasting Foundation, Boston, Massachusetts. Development of radio programs of cultural and educational value.....	15,000.00
Yale University, New Haven, Connecticut	
Development of the library of the Department of Drama.....	1,689.93
Research fund in the humanities.....	50,000.00
Support of excavations at Dura-Europos, Syria....	7,500.00
	<hr/>
Total.....	\$1,166,104.99

**THE HUMANITIES
STAFF DURING 1935**

DIRECTOR

David H. Stevens

ASSISTANT DIRECTOR

John Marshall

CHINA PROGRAM

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CHINA PROGRAM

The interest of The Rockefeller Foundation in China, especially in the fields of medicine and the natural sciences, is of long standing. A change of emphasis of the Foundation's program in this country in 1935 has been toward cooperation with efforts in the field of rural reconstruction. The Chinese National Government, and, indeed, many provincial and county authorities and private organizations, are undertaking measures designed to reconstruct a medieval society in terms of modern knowledge. The plasticity of the situation, together with the availability of proven Chinese leadership, offered an opportunity for the Foundation to develop its program in China in an attempt to improve community welfare, particularly with reference to the rural problems. Appropriations made during 1935 toward the China Program fall under five headings and are summarized in the following table:

APPROPRIATIONS UNDER THE CHINA PROGRAM DURING 1935

NORTH CHINA PROGRAM

Chinese Mass Education Movement.....	LC \$150,000*
Nankai University. Institute of Economics.....	37,500
Yenching University. College of Public Affairs and College of Natural Sciences.....	77,325

* LC= Local Currency.

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NANKING PUBLIC HEALTH AND MEDICAL PROGRAM

National Health Administration of China.....	LC	\$87,500
Commission on Medical Education.....		21,250

NANKING AGRICULTURAL PROGRAM

University of Nanking. Department of Agricultural Economics and Department of Science.....	US	\$5,500
National Central University. Animal husbandry and veterinary preventive medicine.....	LC	\$72,500
National Agricultural Research Bureau. Insect control work.....		34,600
		34,300

FELLOWSHIPS.....	US	\$37,500
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GRANTS IN AID

Research and developmental aid grants.....		10,000
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North China Program

Among the important institutions of higher education located in North China and interested in securing opportunity to contribute to the solution of community problems are Nankai University at Tientsin, about 75 miles southeast of Peiping; Yenching University, located on the outskirts of Peiping; and the Peiping Union Medical College. At the same time the rural demonstration conducted in Ting Hsien, a county about 170 miles south of Peiping, by the Chinese Mass Education Movement has developed into a nation-wide agency for rural improvement.

Chinese Mass Education Movement

Toward the general budget of the Chinese Mass Education Movement for the year beginning July 1, 1935, the Foundation has made an

appropriation of Local Currency \$150,000. This movement is a semiofficial project in rural reconstruction. It originated as an adult literacy movement and has evolved into a comprehensive experimental program for research in education and its experimental application to the problem of bridging the gap, so far as rural conditions are concerned, between the Old and the New China.

It would be a disservice in China to create in a rural region an organization which although desirable would be obviously outside of the financial means of the local population. It is necessary to develop a program involving local government, security, education, livelihood, and public health which can be supported with the meager existing financial resources. The techniques to be evolved in all branches must be so simple and economical that they are capable of being adopted elsewhere without the use of funds other than those normally available.

This organized educational movement has been developed in the county of Ting Hsien, a district with a population of 400,000. It is now ready for extension through the launching of a program to train personnel. Utilization of knowledge is being worked out in each field with the purpose of broad application of this knowledge to the country at large. A program involving the

training of the personnel to be used elsewhere is essential for the success of the movement.

The type of project in which the Foundation is collaborating is designed to provide college graduates with apprenticeship training in the various rural activities already established. The funds are also used to supplement research activities for the development of new methods. The apprenticeship training now being given may be considered partially as an emergency measure to serve until the development of more systematized and fundamental training can be adequately worked out with institutions of higher education.

Cooperation in this activity did not begin until July 1, 1935, and it is premature to report results in terms of significant achievement. The essential trends may be summarized as follows: the Mass Education Movement has established a special training commission; thirty-seven local fellowships in education, health, local government, agriculture, and economics have been supported through Foundation funds; there has been marked progress in the development of technical methods of county-wide application. Ting Hsien has been the central experimental laboratory and the headquarters of the training program. A major extension field is to be established in

Interior of the insectary where the life history of insects is studied.



Spraying cabbage field with improved double pipe sprayer.

Photogra

Soldiers co-operating in pine caterpillar control campaign under direction of the bureau's entomologists.



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Oil emulsion spraying to control cotton aphids.

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Insect control work of the National Agricultural Research Bureau, Nanking.

Kwangsi Province, covering ten counties with a population of over a million and a half. It is to be used as a provincial demonstration, where the methods and organization developed in Ting Hsien are to be introduced. Other demonstration stations are to be established in the provinces of Hunan, Kwantung, and Szechuen. A unit is being organized in Honan Province, where particular emphasis will be placed on education; the State Rural Normal School there is being used to train teachers in the methods worked out at Ting Hsien.

Institute of Economics, Nankai University, Tientsin

There has been appropriated to the Institute of Economics of Nankai University LC\$37,500 in support of its budget for the year beginning July 1, 1935. This institute is one of the leading centers of its kind in China and has won recognition through research in practical problems and postgraduate teaching. It desires to extend its graduate instruction and research to the problems of rural reconstruction and to establish close cooperation with the Mass Education Movement. Such a cooperative program is being developed. Several members of the institute's staff are working on research problems which have a direct bearing on the development of techniques applicable to the solution of rural so-

Weighing wheat seed before sowing. Extension work under the auspices of the University of Nanking.



The native pig compared with a hybridized variety bred for demonstration purposes.

Photogra

A demonstration farmer at the agricultural exhibit, with his chickens and eggs.



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Prize winners at the agricultural exhibit.

Animal husbandry and demonstration farming directed by the Mass Education Movement.

cial and economic problems. Ting Hsien is used as the training ground for some of the graduate students of the Institute of Economics of Nankai University.

The most important immediate outcome of Foundation collaboration with Nankai University has been the development of two-year comprehensive but untraditional postgraduate courses in the field of cooperation, land administration, local government, and local finance. In addition to seminars, the plan provides for field investigations on some definite project which the student in question is assigned for an eight-month period to test out under official auspices in an actual community. This type of training qualifies the men for administrative posts in the field of rural reconstruction. Eleven fellowships for these courses have been awarded from local fellowship funds.

Yenching University, Peiping

The sum of LC\$58,125 was appropriated in May 1935 to Yenching University toward the general budgets of the College of Public Affairs and the College of Natural Sciences during the year beginning July 1, 1935; and in November 1935 an additional sum, amounting to LC\$19,200, was voted for the development of training courses in rural reconstruction at the College of

Public Affairs during the academic year 1935-36.

Yenching University is one of the foremost private colleges in China, and is successfully preparing itself to play a significant rôle in the development of modern China. While continuing its regular program in premedical and pre-nursing education, it has instituted a new social science program which aims to train young Chinese for positions in rural administration, local government, rural education, village industry, and for social and economic positions. The Yenching program in relation to this plan is being worked out by a special committee of Yenching representatives and members from Nankai University and the Mass Education Movement in Ting Hsien. With the opening of the school year in 1935, special courses were offered for the first time and new staff members were appointed who had the necessary qualifications to make the standard of teaching of the rural subjects high.

The natural sciences at Yenching, which have received support in past years from the Foundation, are also being redirected in part toward problems of rural significance. The Department of Biology is concentrating its researches in the field of economic entomology, and the Department of Chemistry is interested in the chemical problems of village industry, such as ceramics, tanning, etc.

Eleven courses on rural problems in the three departments of the College of Public Affairs have been organized with an enrollment of 119 undergraduate students. In addition, special rural training courses in cooperation and local government have been developed, which provide graduate study facilities in controlled community fields. A professor of sociology has been appointed magistrate of a county of 300,000 population. Five graduate students in economics and political science are obtaining routine training and experience through administrative posts to which they have been appointed under this professor's direction. The addition of so many undergraduate students to the enrollment on their own volition indicates that the university is realizing its opportunity to direct young men and women toward a life career in rural activities.

Nanking Public Health and Medical Program

Under this heading financial assistance has been given to the National Health Administration of China for public health training and to the Commission on Medical Education. Both of these projects are definitely related to national reconstruction in China.

National Health Administration of China

In 1930 the National Health Administration formulated a three-year program as the initial

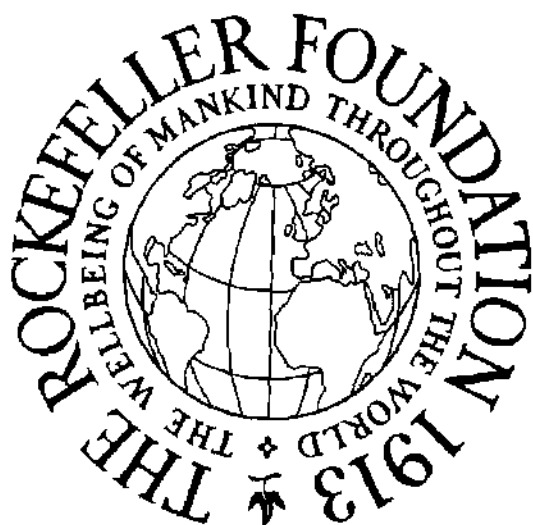


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How the public health nurse travels in rural districts in China.

step in realizing a policy of state medicine as the only practical solution to the problem of providing medical protection for an economically unadvanced population. The consequent rapid development of state medical and public health work and the great demand for personnel meant that instruction had to be given by staff members already burdened by administrative routine as well as teaching, with the result that additional personnel became necessary. It was also found desirable to extend and intensify the various courses in public health work, in order to fulfill the responsibility of supplying adequately trained personnel to local health organizations. In 1935, therefore, the Foundation appropriated LC\$87,500 to the National Health Administration of China toward the expenses of training health personnel at this strategic center during the period July 1, 1935, to June 30, 1936.

At the present time there is no educational institution in China able to give instruction to meet the demand for trained public health personnel which has grown up in the past seven years since the establishment of the National Health Administration. The administration has organized its own preliminary courses, which were at first inadequate, owing to insufficient financial resources and to the attempt to make regular staff members carry the heavy load of



Photograph Excised Here

Above: Students of the public health training classes conducted under the auspices of the National Health Administration, Nanking, during 1935. Left: Winners in the child health contest. Right: Village health worker examining patients.

teaching in addition to their routine work. The Foundation's cooperation is assisting in remedying this situation by making possible the employment of new staff and adding to the equipment. Assistance is also being given to extend and intensify the various courses, particularly those relating to field instruction. The courses given in this training school include those for medical health officers, public health nurses, and sanitary inspectors. The National Health Administration is increasingly performing the task of recommending personnel for health activities throughout the country. There has also been satisfactory progress in the improvement of public health training opportunities, through the provision, under a training commission, of urban and rural administrative facilities in populations respectively of 145,000 and of 450,000. The policy of the National Health Administration on state medicine has resulted in the provision of combined curative and preventive services in both of these areas, which are administered by personnel recommended for appointment by the Training Commission of the National Health Administration.

In connection with the rural problems in China the National Health Administration continues to be one of the strongest technical departments of the Nanking Government. Foundation co-

operation has been useful in developing the staff and equipment of this administration. Funds have been appropriated for fifty-two local fellows who are studying to be health officers, public health nurses, sanitary engineers, and other rural health workers.

Commission on Medical Education

To the Chinese Ministry of Education the Foundation has made an appropriation of LC\$21,250 toward expenses of the Commission on Medical Education during the year beginning July 1, 1935.

The Ministry of Education of China had previously established separate commissions of medical, midwifery, and nursing education, which were not active and had no full-time staff. Foundation collaboration has made it possible to unify these commissions and replace the previous organization by a single board with a full-time responsible staff. The first six months' report by the secretary indicates that the investigations undertaken in the fields of medicine, midwifery, and nursing have proved stimulating. Technical subcommittees have been created to work out curricula and syllabi to effect better teaching standards. The commission has established an editorial board which, in addition to publishing a monthly bulletin on medical educa-

tion, is undertaking responsibility for the editing and publication of medical, nursing, and midwifery textbooks and manuals. Another important activity already initiated is the systematic planning of teacher training. The ministry receives nominations for fellowships from the different institutions of the country. Eleven such fellows have been appointed on local fellowship funds supplied by the Foundation. The Peiping Union Medical College trains some of these future teachers.

Through the commission the Foundation has also supplied thirteen fellowships for public health nurses. These women are being trained to be leaders in this kind of work and are spending their fellowship period at the Peiping Union Medical College, although a great deal of their practical training is obtained at the Municipal Health Center maintained by the college.

Although the Foundation's contribution to this commission is not large, results obtained in a few months have been highly promising. The development of state medicine in China takes its inspiration and direction from the work of this commission.

Nanking Agricultural Program

China is an agricultural country. Eighty-five per cent of its population depends on the soil and



Photograph Excised Here

James Y. C. Yen and his associates, leaders of the Chinese Mass Education Movement.



Photograph Excised Here

Experiment center of the Mass Education Movement. The people of Ting Hsien invited this organization to use for its headquarters the ancient Imperial Examination Hall, a rare example of Sung Dynasty architecture.

its products for a livelihood. In China's transition to a modern society the problems of the rural population have been frequently neglected.

A study of the situation in Nanking revealed that there existed there three relatively large institutions engaged in agricultural work: the University of Nanking, National Central University, and the National Agricultural Research Bureau.

University of Nanking. Department of Agricultural Economics and Department of Science

The sum of US\$5,500 plus LC\$55,000 was appropriated to the University of Nanking for aid to the Department of Agricultural Economics, and LC\$17,500 for aid to the Department of Science, during the year October 1, 1935, to September 30, 1936.

The University of Nanking, a missionary institution, has been a pioneer in agriculture, many of the agricultural leaders having been connected with it at some time. Among its major contributions have been those in agronomy (wheat) and agricultural economics. The Department of Agricultural Economics has become an outstanding institution in China in this field. It is one of the important sources of information for the national and provincial governments on matters dealing with agricultural economics. The Foundation is collaborating particularly in con-



Photograph Excised Here

Political training under the Mass Education Movement. Popular election of a village reconstruction council in a demonstration village, conducted by the Educational Division and the local government.



Photograph Excised Here

Students of the Young People's Department of the Mass Education Movement starting out on their own initiative to apply cooperative principles to a farming venture.

nection with studies of administration, agricultural prices, and farm business organization.

**National Central University. Animal Husbandry and
Veterinary Medicine**

There has been appropriated to the College of Agriculture of the National Central University in Nanking the sum of LC\$34,600 for the furthering of work in animal husbandry and veterinary medicine during the period from October 1, 1935, to June 30, 1936.

The College of Agriculture of National Central University, a government institution, has been in existence for twenty years, and is developing satisfactorily activities in animal husbandry and certain branches of veterinary medicine.

The development of methods and the training of personnel in animal husbandry have been almost untouched in China. The recent reconstruction program throughout the country has emphasized the economic necessity for the improvement of animal husbandry and preventive veterinary medicine. The objective of the present grant is to help create at least one center in China where men can be adequately trained in these fields.

**National Agricultural Research Bureau. Insect
Control Work**

The National Agricultural Research Bureau of the Chinese Ministry of Industry and Agricul-

ture has received an appropriation of LC\$34,300 for insect control work during the period from October 1, 1935, to June 30, 1936. This bureau was established three years ago and is rapidly initiating national administrative functions in agriculture which have hitherto been lacking. Foundation assistance is given to the bureau's work in economic entomology. A good staff and reasonably good equipment have already been brought together. The bureau represents a serious government effort to provide the requisite technical administrative machinery in agricultural matters and facilities for scientific investigation of agricultural problems. It has a dozen major departments covering various phases of agriculture. Although created only three years ago, the National Agricultural Research Bureau has a long list of publications to its credit. It has received liberal appropriations from the government.

Fellowships

In all, US\$57,500 was appropriated for the 1935 fellowship program in China; \$20,000 of this was appropriated in 1934 and \$37,500 in 1935. Of the total amount, approximately \$35,000 was allocated to local fellowships and \$22,000 to foreign fellowships.

Although the granting of fellowships, both

foreign and local, has in the past been stressed as an essential part of the China Program, in the future it is intended to emphasize a local fellowship program rather than fellowships abroad. Local fellowships to the number of 140 were awarded between July 1 and December 31, 1935. The majority of these were specifically for training in rural work. The recipients include a certain number of men and women who will be connected with institutions primarily concerned with training personnel for rural activities.

The local fellowship program was organized largely in terms of the major projects which were being assisted by the Foundation. The table on page 343 shows the distribution of these fellowships by institution and subject of study.

The majority of the local fellows are receiving training of a practical character which should permit them to occupy positions of responsibility in different fields of rural reconstruction. This applies particularly to the fellowships granted to the Mass Education Movement, Nankai University, and Yenching University, and many of those to the National Health Administration.

The fellowships for the Commission on Medical Education are for individuals who are to occupy professorships on faculties of medicine or important positions in connection with nursing schools.

It is anticipated that there will be no difficulty in having local fellows absorbed into the type of work for which they are being trained. While the quantity of local fellowships is considerable, the question of quality is being stressed, as the attempt is to give these fellowships to men and women who will be capable of assuming a fair amount of responsibility from the start.

LOCAL FELLOWSHIPS IN CHINA, 1935

Institution	Number of Fellows	Subject of Study	Number of Fellows
National Health Administration, Nanking.....	52	Social Sciences.....	29
Mass Education Movement, Ting Hsien.....	37	Public Health Nursing....	29
Commission on Medical Education.....	24	Medical School and Nursing Administration....	24
Nankai University.....	11	Public Health Officers' Course.....	23
Cooperative Commission, National Economic Council.....	5	Education.....	21
Yenching University.....	5	Sanitary Engineering....	7
Health Department, Municipality of Peiping.....	2	Natural Science.....	4
Cheeloo University.....	2	Public Health Technicians' Course.....	3
National University of Chekiang.....	1		
National Geological Survey of China.....	1		
	<u>140</u>		<u>140</u>

Grants in Aid

During 1935 US\$25,000 was available for research and developmental aid grants in connection with the China Program, \$15,000 having been appropriated in 1934 and \$10,000 in 1935. Of this

amount \$17,290 was expended. Sixteen different projects were assisted, of which two were in economics, six in medicine and public health, seven in natural sciences, and one in rural training. In no instance was more than \$3,000 appropriated to a single project. These small sums of money are of great value in assisting important studies outside of the main appropriations. Sometimes the returns on a small grant may be entirely out of proportion to the amount expended.

The research and developmental aid fund is available for all branches of Foundation work in China, but its chief purpose is to enable small grants to be made in connection with the reconstruction program.

**THE CHINA PROGRAM
STAFF DURING 1935**

Selskar M. Gunn, *Vice-President of The Rockefeller Foundation*
Brian R. Dyer
John B. Grant, M.D.

REPORT OF THE TREASURER

TREASURER'S REPORT

In the following pages is submitted a report of the financial transactions of The Rockefeller Foundation for the year ended December 31, 1935.

A condensed summary of appropriations and funds available for appropriation follows:

Balance of appropriations, pledges, and authorizations at December 31, 1934		
Prior Obligations Account.....	\$6,030,851.25	
Current Appropriations Account.....	27,635,784.37	\$33,666,635.62
		<hr/>
Funds provided for appropriations, pledges, and authorizations made during the year, as shown hereunder.....		13,631,339.56
		<hr/>
		\$47,297,975.18
Less		
Payments made during the year	\$12,725,439.34	
Pledge allowed to lapse, returned to Principal Fund...	50,000.00	
Sum of unused appropriations and authorizations allowed to lapse, becoming available for appropriations.....	4,159,836.54	16,935,275.88
		<hr/>
Balance of appropriations, pledges, and authorizations at December 31, 1935.....		\$30,362,699.30
		<hr/> <hr/>
This balance consists of		
Prior Obligations Account.....	\$2,732,647.82	
Current Appropriations Account	27,630,051.48	
		<hr/>
		\$30,362,699.30
		<hr/> <hr/>

Balance available for appropriation at December 31, 1934.....		\$4,997,244.41
Income and refunds received during the year.....	\$7,909,730.83	
Unused balances of appropriations and authorizations allowed to lapse, returned as above.....	4,159,836.54	12,069,567.37
		<u>\$17,066,811.78</u>
Less funds provided, as above, for Appropriations made during the year not previously pledged or authorized.....	\$13,195,739.60	
Pledges and authorizations made during the year.....	435,599.96	13,631,339.56
		<u>13,631,339.56</u>
Balance available for appropriation at December 31, 1935.....		<u>\$3,435,472.22</u>

The balance in Principal Fund December 31, 1934, amounted to \$153,609,942.09. Transactions during the year resulted in an increase of \$50,000, or a balance December 31, 1935, of \$153,659,942.09. The Reserve for Contingent Appropriations Account, amounting to \$1,500,000 at December 31, 1934, remained unchanged at December 31, 1935.

Since the close of the year the accounts of the Comptroller, the accounts of the Treasurer, and the securities owned by the Corporation have been examined by Messrs. Haskins and Sells, Certified Public Accountants, who have rendered a report to the President.

The financial condition and operations are set forth in the appended exhibits as follows:

Balance Sheet.....	Exhibit A
Statement of Foreign Currencies Held December 31, 1935.....	Exhibit B
Consolidated Statement of Funds Available for Appropriation and Disbursement.....	Exhibit C
Statement of Appropriations Made During the Year 1935.....	Exhibit D
Statement of Payments During 1935 on Appropriations Made in 1935 and Prior Years.	Exhibit E
Statement of International Health Division Designations and Payments.....	Exhibit F
Summary of Prior Obligations Account.....	Exhibit G
Summary of Appropriations Account.....	Exhibit H
Statement of Principal Fund.....	Exhibit I
Statement of Reserve for Contingent Projects.....	Exhibit I
Statement of Building and Equipment Fund..	Exhibit J
Schedule of Securities.....	Exhibit K

EXHIBIT A
BALANCE SHEET—DECEMBER 31, 1935

ASSETS

INVESTMENTS

Securities (ledger valuation).....		\$175,781,326.72
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CURRENT ASSETS

Certificate of deposit.....	\$2,000,000.00	
Cash on deposit.....	6,631,357.61	
Foreign currencies purchased to meet specific appropriations payable in foreign exchange of at least the same dollar amount (Exhibit B).....	2,704,510.78	
Advances and deferred charges under appropriations and sundry accounts receivable.....	1,859,438.45	13,195,306.84

BUILDING AND EQUIPMENT

In New York.....	\$51,543.52	
In Paris.....	64,514.29	116,057.81
		\$189,092,691.37

TREASURER'S REPORT

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EXHIBIT A
BALANCE SHEET—DECEMBER 31, 1935
FUNDS

PRINCIPAL FUND.....				\$153,659,942.09
RESERVE FOR CONTINGENT PROJECTS.....				1,500,000.00
APPROPRIATIONS FUNDS				
Appropriations, pledges, and authorizations made prior to January 3, 1929				
Unpaid appropriations...	\$2,185,647.82			
Unappropriated pledges and authorizations.....	547,000.00	\$2,732,647.82		
<hr/>				
Appropriations, pledges, and authorizations made subse- quent to January 2, 1929				
Unpaid appropriations....	\$24,984,245.51			
Unappropriated pledges and authorizations.....	2,645,805.97	27,630,051.48		30,362,699.30
<hr/>				
BALANCE AVAILABLE FOR APPROPRIATION.....				3,435,472.22
CURRENT LIABILITIES				
Accounts payable.....				18,519.95
BUILDING AND EQUIPMENT FUND.....				116,057.81
<hr/>				
<u>\$189,092,691.37</u>				

EXHIBIT B
STATEMENT OF FOREIGN CURRENCIES HELD DECEMBER 31, 1935

	AMOUNT IN LOCAL CURRENCY	RATE	COST IN U.S. DOLLARS	
Albania	Gold francs.. . . .	156.00	.328397435	\$51.23
Austria	Schillings	3,500.00	.1908	667.80
Bulgaria	Levas (blocked)	1,340,000.00	.009017992	12,084.11
Canada	Dollars	84,361.65	.942191386	79,484.82
Colombia	Pesos	375.00	.570293333	213.86
Denmark	Kroner	21.95	.223690205	4.91
England	Pounds sterling	447,906/17/7	3.5740258	1,600,830.75
Germany	Reichsmarks	4,010.00	.402399	1,613.62
Hungary	Pengös (blocked)	2,605.00	.154264875	401.86
India	Rupees	30.15.0	.373656	11.56
Italy	Lire	3,056.55	.078873239	241.08
Jamaica	Pounds	0/1/2	5.314589	.31
Japan	Yen	2,802,759.89	.309354937	867,047.61
Netherlands	Guilders	125,000.00	.6883	86,037.50
Poland	Zloty	14.66	.190313778	2.79
Portugal	Escudos	902.35	.044882806	40.50
Rumania	Lei (blocked)	7,495,608.00	.007424279	55,649.49
Spain	Pesetas	188.55	.005303632	1.00
Sweden	Kronor	501.04	.251437011	125.98
				<u>\$2,704,510.78</u>

EXHIBIT C
 CONSOLIDATED STATEMENT OF FUNDS AVAILABLE FOR APPROPRIATION AND DISBURSEMENT
 AMOUNTS AVAILABLE

PRIOR OBLIGATIONS ACCOUNT			
Balance, December 31, 1934		\$6,030,851.25	
Less			
Unused balances of appropriations allowed to lapse, credited to Ap- propriations Account	\$2,195,561.55		
Pledge allowed to lapse, returned to Principal Fund.	50,000.00	2,245,561.55	\$3,785,289.70
APPROPRIATIONS ACCOUNT			
Balance, December 31, 1934		\$32,633,028.78	
Income received during the year 1935		7,895,855.11	
Refunds received during the year 1935		13,875.72	
Unused balances of appropriations allowed to lapse (prior obligations)		2,195,561.55	42,738,321.16
			\$46,523,610.86
DISBURSEMENTS			
Universities and Other Educational Institutions			
Education			
Medical sciences	\$692,524.79		
Public health	8,285.26		
Nursing	511,242.73		
Social sciences	133,485.39		
Natural sciences	20,557.43		
Humanities	36,000.33		
Departmental development	599,412.49		
Research programs	2,217,425.56		
Land and buildings	150,462.08	\$4,369,396.06	

TREASURER'S REPORT

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EXHIBIT C—Continued

Research Institutions and Organizations

Education			
Medical sciences.....	\$5,091.20		
Social sciences.....	28,083.79		
Humanities.....	5,000.00		
General.....	9,915.63		
General development.....	1,478,914.71		
Research programs.....	699,214.33		
Land and buildings.....	364,388.96	\$2,590,608.62	
Special committees and commissions.....		109,397.06	
Fellowships and grants in aid.....		1,410,635.60	
Studies of pressing economic problems recommended by special trustee committee.....		348,429.26	
Miscellaneous.....		359,412.20	
Public health.....		2,443,179.62	
General.....		313,859.93	
Administration.....		780,520.99	\$12,725,439.34
Balance, December 31, 1935.....			<u>\$33,798,171.52</u>
This balance is available as follows:			
For appropriations, pledges, and authorizations made prior to January 3, 1929.....			\$2,732,647.82
For appropriations, pledges, and authorizations made subsequent to January 2, 1929.....			27,630,051.48
			<u>\$30,362,699.30</u>
Probable payments in the following years:			
1936.....	\$16,951,208.66		
1937.....	6,149,717.08		
1938.....	3,564,026.90		
1939.....	2,109,466.66		
1940.....	1,588,280.00		
		<u>\$30,362,699.30</u>	
Balance available for appropriation.....			<u>3,435,472.22</u>
			<u>\$33,798,171.52</u>

This sum is accounted for in securities and cash.

EXHIBIT D
 APPROPRIATIONS MADE DURING THE YEAR 1935

Agricultural Economics, World-wide study of	\$18,000.00
American Council of Learned Societies, Washington, D.C.	115,000.00
American Geographical Society, New York City	40,000.00
American Institute of Physics, New York City	6,000.00
American School of Classical Studies at Athens, Greece	11,000.00
American Statistical Association, Washington, D.C.	22,500.00
American University, Washington, D.C.	28,000.00
American University of Beirut, Republic of Lebanon	45,000.00
Australian National Research Council, Sydney	30,000.00
Austrian Institute for Trade Cycle Research, Vienna	12,000.00
Bibliothèque Nationale, Paris, France	10,500.00
Brookings Institution, Washington, D.C.	75,000.00
Brooklyn Museum, Brooklyn, New York	44,000.00
California Institute of Technology, Pasadena	40,000.00
Center for the Study of Foreign Relations, Paris, France	70,000.00
Chicago Area Project, Illinois	22,500.00
China Medical Board, Inc., New York City	454,000.00
Chinese Mass Education Movement, Ting Hsien	75,000.00
Chinese Ministry of Education, Nanking	10,625.00
Clark University, Worcester, Massachusetts	5,700.00
Columbia University, New York City	96,000.00
Community Council of Philadelphia, Pennsylvania	15,000.00
Connecticut College for Women, New London	10,000.00
Cornell University, Ithaca, New York	11,400.00
Council on Foreign Relations, New York City	50,000.00
Dartmouth College, Hanover, New Hampshire, Medical School	90,000.00
Emma Pendleton Bradley Home, East Providence, Rhode Island	46,500.00
Exchange fund	50,000.00

TREASURER'S REPORT
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EXHIBIT D—Continued

Fellowships	
China.....	\$37,500.00
Social security, international relations, and public administration.....	175,000.00
Humanities.....	60,000.00
Medical sciences.....	90,000.00
Natural sciences.....	107,500.00
Social sciences.....	85,000.00
Foreign Policy Association, New York City.....	112,500.00
George Washington University, Washington, D.C.....	25,500.00
Governor's Commission on Unemployment Relief, New York.....	5,000.00
Grants in aid	
Social security, international relations, and public administration.....	105,000.00
Humanities.....	80,000.00
Medical sciences.....	125,000.00
Natural sciences.....	140,000.00
Social sciences.....	25,000.00
Harvard University, Cambridge, Massachusetts.....	376,500.00
Industrial Relations Counselors, New York City.....	10,000.00
Institute of the Educational Sciences, Geneva, Switzerland.....	7,200.00
Institute for Psychoanalysis, Chicago, Illinois.....	100,000.00
Institute of Pacific Relations	
American Council, New York City.....	65,000.00
Pacific Council, Honolulu, Hawaii.....	135,000.00
Institute of the Pennsylvania Hospital, Philadelphia.....	36,000.00
International Health Division of The Rockefeller Foundation, New York City.....	2,100,000.00
International Institute of African Languages and Cultures, London, England.....	60,000.00
International Institute of Intellectual Cooperation, Paris, France.....	30,000.00
John Casimir University, Lwow, Poland.....	15,000.00
Johns Hopkins University, Baltimore, Maryland.....	122,700.00
Laboratory of Anthropology, Santa Fe, New Mexico.....	7,500.00
Leland Stanford, Jr., University, Palo Alto, California.....	50,000.00

Library Association, London, England	\$17,625.00
Library of Congress, Washington, D.C.	30,000.00
London County Council, England. Psychiatric research at Maudsley Hospital	45,000.00
London School of Economics and Political Science, University of London, England	45,000.00
Long Island Biological Association, Cold Spring Harbor, New York	14,000.00
Massachusetts Department of Mental Diseases, Boston	26,000.00
Massachusetts General Hospital, Boston	40,000.00
Massachusetts Institute of Technology, Cambridge	10,000.00
McGill University, Montreal, Canada	24,000.00
Medical literature, Russia	10,000.00
Medical Research Council, London, England	39,000.00
Museum of Modern Art, New York City	120,000.00
Nankai University, Tientsin, China	18,750.00
National Agricultural Research Bureau, Nanking, China	17,150.00
National Central University, Nanking, China	17,300.00
National Committee for Mental Hygiene, New York City	20,000.00
National Health Administration, Nanking, China	43,750.00
National Hospital, Queen Square, for the Relief and Cure of Diseases of the Nervous System, Including Paralysis and Epilepsy, London, England	600,000.00
National Institute of Public Affairs, Washington, D. C.	80,000.00
National Library of Peiping, China	5,000.00
National Research Council, Washington, D. C.	310,000.00
New Hampshire Foundation, Concord	18,000.00
New York Museum of Science and Industry, New York City	50,000.00
New York University, New York City	15,500.00
North Carolina. Commission for the Study of the Care of the Insane and the Mentally Defective	16,300.00
Northwestern University, Chicago, Illinois	8,000.00
Ohio State University, Columbus	18,000.00
Orithological Institute, London, England	34,425.00
Play House Foundation of Cleveland, Ohio	38,000.00
Princeton University, New Jersey	7,500.00
Polish Academy of Sciences, Cracow, Economic Institute	10,000.00

TREASURER'S REPORT

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EXHIBIT D—Continued

Research aid	
Deposed scholars	\$185,000.00
Returned fellows	5,000.00
Research and developmental aid in the medical and natural sciences, China	10,000.00
Roscoe B. Jackson Memorial Laboratory, Bar Harbor, Maine	35,000.00
Rumanian Institute of Social Sciences, Bucharest	9,000.00
School of Nursing, Bucharest, Rumania	85,000.00
Social Science Research Council, New York City	440,000.00
Society of the Friends of the Bibliothèque Nationale, Paris, France	6,000.00
Spelman Fund of New York, New York City	1,000,000.00
State University of Iowa, Iowa City	80,000.00
Study of the teaching of preventive medicine, public health, and hygiene in North American and Western European medical schools	25,000.00
Syracuse University, New York	39,000.00
Technical Institute, Graz, Austria	5,800.00
University Broadcasting Council, Chicago, Illinois	46,000.00
University of Amsterdam, Netherlands	9,050.00
University of Brussels, Belgium	462,000.00
University of California, Berkeley	107,000.00
University of Cambridge, England	30,600.00
University of Chicago, Illinois	1,008,775.00
University of Colorado, School of Medicine, Denver	20,000.00
University of Copenhagen, Denmark	54,000.00
University of Leeds, England	17,750.00
University of London, England, School of Oriental Studies	15,000.00
University of Manchester, England	20,000.00
University of Michigan, Ann Arbor	122,500.00
University of Nanking, China	41,750.00
University of North Carolina, Chapel Hill	84,500.00
University of Oxford, England	12,750.00
University of Paris, France	133,400.00

University of Pennsylvania, Philadelphia.....	\$87,500.00
University of Rochester, New York.....	16,300.00
University of Sofia, Bulgaria.....	15,000.00
University of Stockholm, Sweden.....	17,350.00
University of Uppsala, Sweden.....	55,000.00
University of Utrecht, Netherlands.....	16,800.00
University of Virginia, Charlottesville.....	25,000.00
Visits by teachers of public health and deans of medical schools.....	4,000.00
Washington University, St. Louis, Missouri.....	16,500.00
Welfare Council of New York City.....	60,000.00
Western Reserve University, Cleveland, Ohio.....	15,000.00
Woods Hole Oceanographic Institution, Massachusetts.....	1,000,000.00
Worcester State Hospital, Massachusetts.....	33,000.00
World Wide Broadcasting Foundation, Boston, Massachusetts.....	25,000.00
Yale University, New Haven, Connecticut.....	140,000.00
Yenching University, Feiping, China.....	35,860.00
Administration.....	863,629.60
	<u>\$14,075,739.60</u>

TREASURER'S REPORT

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EXHIBIT E
PAYMENTS DURING 1935 ON APPROPRIATIONS MADE IN 1935 AND PRIOR YEARS

	APPROPRIATIONS	1935 PAYMENTS
UNIVERSITIES AND OTHER EDUCATIONAL INSTITUTIONS		
Medical Science Education		
Cheeloo University, Tsinan, China. School of Medicine Maintenance (RF 33102).....	\$4,431.25	\$4,168.75
China Medical Board, Inc., New York City Peiping Union Medical College. Maintenance 1934-35 (RF 33101).....	223,000.00	206,850.00
1935-36 (RF 35124, 35198).....	454,000.00	254,000.00
Chulalongkorn University, Bangkok, Siam Equipment and supplies for medical, premedical, and nursing schools (ME 21059, 21093, 21148).....	438.34	.....
Visiting professors and nurse leaders (ME 28039, RF 29110, 30063, 31113)....	42,768.27	7,214.35
University of Brussels, Belgium Endowment of St. Pierre Hospital (RF 35059).....	200,000.00	200,000.00
University of Colorado. School of Medicine, Denver Teaching of psychiatry (RF 34021, 35127).....	25,000.00	7,791.69
University of Montreal, Canada. Faculty of Medicine Development of laboratories (RF 34075).....	12,500.00	12,500.00
Public Health Education		
Dalhousie University, Halifax, Nova Scotia Development of teaching in public health and preventive medicine (RF 33044)	35,539.71	8,285.26
Nursing Education		
Emergency aid to schools of nursing in Europe to the development of which the Foundation has previously contributed (RF 31099).....	25,077.29	2,000.00

State Central School of Nursing, Budapest, Hungary Maintenance (ME 28089).....	\$250.00	\$250.00
State Institute of Public Health, Prague, Czechoslovakia. School for Public Health and Social Welfare Nurses Improvement of teaching services (RF 30082).....	25,000.00	300.00
University of Cracow, Poland. School of Public Health and Bedside Nursing Salaries and scholarships (ME 2927).....	454.55	454.55
University of Toronto, Canada. School of Nursing Maintenance (RF 32080).....	39,118.97	8,238.18
Vanderbilt University, Nashville, Tennessee. School of Nursing Endowment (RF 34177).....	500,000.00	500,000.00
Social Science Education		
American University, Washington, D. C. Training program in public administration (RF 35004, 35082).....	28,000.00	10,000.00
American University of Beirut, Republic of Lebanon Work in the social sciences (RF 34085, 35070).....	53,000.00	15,500.00
Harvard University, Cambridge, Massachusetts Training in public service (RF 35078).....	66,000.00	684.10
National Catholic School of Social Service, Washington, D. C. Budget for instruction (RF 31040).....	2,500.00	2,500.00
National Institute of Public Affairs, Washington, D. C. Training of personnel attached to Federal services (RF 35138).....	80,000.00	.....
New York School of Social Work, New York City General budget (RF 32043).....	90,000.00	27,500.00
Tulane University of Louisiana, New Orleans. School of Social Work General budget (RF 32044).....	36,000.00	11,000.00
University of Chicago, Illinois. School of Social Service Administration General endowment (RF 34057).....	500,000.00	.....
Current expenses (RF 34058-59).....	158,855.00	45,865.51
University of Stockholm, Sweden Special faculty appointment in the social sciences (RF 34070, 35073).....	10,500.00	3,000.00

TREASURER'S REPORT

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EXHIBIT E—Continued

	APPROPRIATIONS	1935 PAYMENTS
UNIVERSITIES AND OTHER EDUCATIONAL INSTITUTIONS—Continued		
Social Science Education—Continued		
University of Vienna, Austria. Psychological Institute General program (RF 31093, 33082).....	\$1,320.90	\$1,320.90
Western Reserve University, Cleveland, Ohio. School of Applied Social Sciences Support (RF 32042, 33064, 34087).....	43,750.00	12,500.00
Yenching University, Peiping, China. College of Public Affairs Developmental aid (LS 946, RF 34081, 35106).....	26,870.00	3,614.88
Natural Science Education		
Fukien Christian University, Foochow, China Maintenance of science departments (RF 32026).....	2,500.00	2,500.00
Lingnan University, Canton, China Maintenance of science departments (RF 34082).....	10,000.00	10,000.00
Yenching University, Peiping, China Maintenance of science departments (RF 30020, 30064, 35106).....	15,940.00	8,057.43
Humanities Education		
Brooklyn Museum, Brooklyn, New York Training of museum personnel (RF 35116).....	44,000.00	11,000.00
Harvard University, Cambridge, Massachusetts Translating, abstracting, and indexing works on Oriental art (RF 35120).....	7,500.00	750.33
University Broadcasting Council of Chicago, Illinois Developing radio programs of educational and cultural value (RF 35117).....	46,000.00	9,250.00
World Wide Broadcasting Foundation, Boston, Massachusetts Development of radio programs of educational and cultural value (RF 35118) ..	25,000.00	15,000.00
Departmental Development		
American University of Beirut, Republic of Lebanon Improvement of teaching facilities in the medical sciences, nursing, and the pre- medical subjects (RF 31124).....	304,166.74	50,000.00

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California Institute of Technology, Pasadena		
Development of natural sciences, including buildings and equipment (RF 30080)	\$500,000.00
Harvard University, Cambridge, Massachusetts		
School of City Planning. Support (RF 29072).....	60,050.64	29,988.69
Teaching and research in psychiatry (RF 33103, 35002).....	69,000.00	59,839.74
Institute of the Pennsylvania Hospital, Philadelphia		
Development of research and teaching in psychiatry (RF 34061, 35001).....	45,000.00	16,750.47
Johns Hopkins University School of Medicine, Baltimore, Maryland		
Study and teaching in child psychiatry (RF 34047, 35010).....	62,500.00	14,579.26
London School of Economics and Political Science, University of London, England		
Library development (RF 31030).....	35,385.15	1,751.84
Improving facilities for research and postgraduate teaching (RF 31031, 33082)	100,726.00	10,726.00
McGill University, Montreal, Canada		
Endowment of teaching and research in neurology (RF 32040).....	48,720.00	.....
Massachusetts General Hospital, Boston		
Development of teaching and research in psychiatry (RF 33103, 35002).....	45,000.00	15,000.00
Museum of Modern Art, New York City		
Establishment of a motion picture department (RF 35090).....	120,000.00	22,000.00
Nankai University, Tientsin, China. Institute of Economics		
Support (RF 31123, 34080, 35107).....	80,912.08	44,573.81
National Central University, Nanking, China. College of Agriculture		
Development of work in animal husbandry and veterinary preventive medicine (RF 35156).....	17,300.00	.....
National Hospital, Queen Square, for the Relief and Cure of Diseases of the Nervous System, Including Paralysis and Epilepsy, London, England		
Endowment of research (RF 35040).....	300,000.00	.....
New York Museum of Science and Industry, New York City		
Development of new methods of museum exhibition (RF 35151).....	50,000.00	5,000.00
State University of Iowa, Iowa City		
Development of work in dramatic art (RF 34055, 35149).....	68,750.00	22,500.00
Syracuse University, New York. School of Citizenship and Public Affairs		
Research and training (RF 32037, 35139).....	64,000.00	9,000.00

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EXHIBIT E—Continued

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THE ROCKEFELLER FOUNDATION

UNIVERSITIES AND OTHER EDUCATIONAL INSTITUTIONS—Continued

	APPROPRIATIONS	1935 PAYMENTS
<i>Departmental Development—Continued</i>		
University of California, Berkeley. Bureau of Public Administration Program of graduate training and research (RF 29108).....	\$55,000.00	\$20,000.00
University of Chicago, Illinois Endowment for development of the Division of the Social Sciences (RF 31032) Interest on RF 31032 (RF 35016).....	111,000.00 4,475.00	..... 4,475.00
Training and research in public administration (RF 32035).....	62,500.00	25,000.00
Development of subdepartment of psychiatry (RF 35055).....	168,000.00	26,250.00
University of Cincinnati, Ohio Training in public administration (RF 32036).....	40,000.00	17,500.00
— University of Leipzig, Germany. Institute of Physiological Chemistry Research assistants, fellows, and aid (RF 31016, 33082).....	36,100.00	8,486.63
University of Michigan, Ann Arbor Development of teaching and research in psychiatry (RF 34046, 35009).....	43,500.00	16,500.00
University of Minnesota, Minneapolis Establishment of a laboratory for rock analysis (RF 29058).....	1,565.93	Cr. 110.70
University of North Carolina, Chapel Hill Development of drama as a college and regional activity (RF 35061).....	9,500.00	2,750.00
University of Nanking, China. Departments of Agriculture and Science Budgets (RF 35155).....	41,750.00	.....
University of Oslo, Norway. Institute of Theoretical Astrophysics Equipment (RF 31035, 34033).....	10,865.74	5,848.98
University of Oxford, England Development of program in the social sciences (RF 34154).....	130,000.00	6,131.25
University of Paris, France. Department of Parasitology Support (RF 30065, 33082, 34119).....	16,750.00	11,220.00
University of Stockholm, Sweden Development of social science library (RF 33025, 33082).....	12,000.00	.....

University of Szeged, Hungary. Departments of Science and Medicine		
Maintenance (RF 31026).....	\$5,813.97	\$1,596.00
Scientific equipment (RF 31025).....	11,488.26	6,096.91
University of Washington, Seattle		
Building and equipment of laboratory and boat, and maintenance of boat for oceanographic work (RF 30079, 32011).....	4,729.58	4,729.58
Western Reserve University, Cleveland, Ohio		
Development of Department of Drama and Theatre (RF 35062).....	15,000.00	2,500.00
Yale University, New Haven, Connecticut. Institute of Human Relations		
Development of psychiatry and care of individuals under observation (RF 29002)	467,302.01	100,000.00
Maintenance of an anthropoid experiment station, Orange Park, Florida (RF 29090).....	195,021.84	38,729.03
Yenching University, Peiping, China. College of Public Affairs		
Development of training courses (RF 35158).....	6,800.00	.....
Research Programs		
Alaska Agricultural College and School of Mines, Fairbanks		
Study of the aurora (RF 29118).....	5,115.89	3,542.73
Amherst College, Massachusetts		
Research in genetics and experimental embryology (RF 34130).....	21,000.00	6,660.12
Brown University, Providence, Rhode Island		
Study of the international gold standard (RF 32073).....	161.51	161.51
California Institute of Technology, Pasadena		
Research in biology (RF 33106).....	35,000.00	25,000.00
Research in chemistry (RF 33109, 34151).....	35,000.00	10,000.00
Research in general physiology (RF 35047).....	40,000.00	10,000.00
China Medical Board, Inc., New York City		
Peiping Union Medical College. Human palcontological research in Asia (RF 32100).....	65,768.16	26,718.22
Clark University, Worcester, Massachusetts		
Research in neurophysiology (RF 35005).....	5,700.00	1,500.00

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EXHIBIT E—Continued

	APPROPRIATIONS	1935 PAYMENTS
UNIVERSITIES AND OTHER EDUCATIONAL INSTITUTIONS—Continued		
Research Programs—Continued		
Columbia University, New York City		
Development of Far Eastern studies (RF 34116).....	\$10,000.00	\$5,000.00
General research fund for development of advanced humanistic work (RF 33031, 35030).....	50,000.00	25,000.00
Research and field training in anthropology (RF 34072).....	3,750.00	1,875.00
Research on the biological effects of heavy hydrogen (RF 34101, 35045).....	23,750.00	16,059.16
Research in physiology (RF 35160).....	7,500.00	.....
Research on pituitary-gonad interrelationship (RF 34090).....	2,500.00	2,498.71
Research in psychiatry (RF 35126).....	15,000.00	2,500.00
Research in the social sciences (RF 30036-37).....	335,284.78	66,423.86
Research on virus diseases (RF 32055).....	8,259.45	4,193.24
Studies on the common cold (RF 31086, 33062, 34073).....	6,000.00	1,689.85
Studies of English usage at the Institute of Educational Research, Teachers College (RF 35063).....	36,000.00	9,000.00
Cornell University Medical College, New York City		
Studies of the rôle of the glands of internal secretion in relation to growth and inheritance (RF 30006).....	138,118.16	24,977.04
Study of reflex behavior in relation to neuroses (RF 35129).....	10,400.00	5,200.00
Dartmouth College, Hanover, New Hampshire. Medical School		
Research in physiological optics (RF 34064, 35125).....	100,000.00	28,000.00
George Washington University, Washington, D. C.		
Research in biochemistry (RF 35022).....	25,500.00	4,500.00
Hannover Polytechnic School, Germany		
Scientific equipment for research in inorganic chemistry (RF 31151, 33082)...	4,759.71	4,759.71
Harvard University, Cambridge, Massachusetts		
Biochemical studies of synovial fluid (RF 34065).....	1,500.00	1,497.54
Chemical research to determine the heats of organic reactions (RF 32098)....	27,000.00	8,000.00

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Geophysical research (RF 31134, 35194).....	\$55,000.00	\$5,000.00
Research in anthropology (RF 31042).....	20,000.00	15,000.00
Research in the humanities (RF 33030, 35031).....	55,000.00	25,000.00
Research in industrial hazards (RF 30031).....	460,034.59	108,763.55
Research in physiology and physical chemistry (RF 30028).....	73,038.16	29,288.11
Research on problems of the business cycle (RF 35083).....	30,000.00	7,500.00
Research in the social sciences (RF 32032, 35086).....	368,633.32	76,532.43
Research on the spectroscopic analysis of the blood serum of anemic children (RF 34110).....	2,000.00	1,500.00
Harvard University and Radcliffe College, Cambridge, Massachusetts		
Research in the field of international relations (LS 993).....	258,760.55	43,549.13
Iowa State College of Agriculture and Mechanic Arts, Ames		
General research fund in the natural sciences (RF 31077).....	5,000.00	3,750.00
John Casimir University, Lwow, Poland. Institute of Constitutional and International Law		
Research on problems of international relations (RF 35190).....	15,000.00	.....
Johns Hopkins University, Baltimore, Maryland		
Biological research (RF 30005).....	202,500.00	58,750.00
General research fund in the humanities (RF 30035, 35032).....	40,000.00	17,949.41
Institute of the History of Medicine (RF 35056).....	37,500.00	6,250.00
Research in psychiatry (RF 33043).....	50,000.00	19,368.84
Study of deafness (RF 32024).....	82,077.31	13,719.36
Study of obstetrical records (RF 29041).....	8,830.62	5,178.24
Leland Stanford, Jr., University, Palo Alto, California		
Research in chemophysical biology (RF 34052, 35054, 35174).....	53,000.00	9,250.00
Research in the medical sciences (RF 30070).....	15,000.00	10,000.00
Research in the social sciences (RF 32031).....	87,200.00	31,250.00
London School of Economics and Political Science, University of London, England		
Research (RF 33007, 33082, 35067).....	54,082.50	9,082.50
Massachusetts General Hospital, Boston. Research on the parathyroid hormone and calcium and phosphorus metabolism (RF 35024).....	10,000.00	2,000.00

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EXHIBIT E—Continued

	APPROPRIATIONS	1935 PAYMENTS
UNIVERSITIES AND OTHER EDUCATIONAL INSTITUTIONS—Continued		
Research Programs—Continued		
Massachusetts Institute of Technology, Cambridge		
General research fund for physics, chemistry, geology, and biology (RF 31050)	\$30,000.00	\$20,000.00
Research on the spectroscopic analysis of the blood serum of anemic children (RF 34110)	2,000.00	2,000.00
McGill University, Montreal, Canada		
Research in the applications of spectroscopic methods to biological and medical problems (RF 34051, 35097)	26,500.00	6,500.00
Research in the social sciences (RF 30107)	29,013.80	25,000.00
New York University, New York City. College of Medicine		
Research in cellular physiology (RF 35176)	10,500.00	.....
Research in experimental neurology (RF 34063, 35111)	7,083.38	5,673.66
Northwestern University Medical School, Chicago, Illinois		
Research in neuroanatomy (RF 34023, 35011)	10,000.00	4,000.00
Ohio State University, Columbus		
Research in endocrinology (RF 34148, 35175)	27,000.00	9,000.00
Peiping Union Medical College, China		
Human paleontological research in Asia (RF 29047, 32021)	4,265.91	1,383.92
Princeton University, New Jersey		
Research in geology (RF 29079)	100,000.00	.....
Research in the humanities (RF 34093, 35034)	15,000.00	11,250.00
Royal Caroline Institute, Stockholm, Sweden		
Research in biochemistry (RF 34144)	22,400.00	5,056.50
State University of Iowa, Iowa City		
Investigations on the physiology of the normal cell (RF 34053, 35050)	45,000.00	10,000.00
Tulane University of Louisiana, New Orleans		
Department of Middle American Research. Support (RF 34030)	21,250.00	11,250.00

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University of Amsterdam, Netherlands			
Research on dementia praecox (RF 35109).....	\$9,050.00	\$2,910.55	
University of California, Berkeley			
Institute of Social Sciences, Research (RF 35068).....	75,000.00	12,500.00	
Research in plant genetics (RF 35025).....	12,000.00	2,000.00	
Study of chemical aspects of vitamins and hormones (RF 34084, 35051).....	30,000.00	20,000.00	
University of Cambridge, England			
Research in cellular physiology (RF 35146).....	30,600.00	.....
University of Chicago, Illinois			
Aid to social science facilities (RF 31133, 35087).....	349,496.10	78,616.10	TREASURER'S REPORT
Chaucer project (RF 35162).....	11,000.00	.....
Investigation of the physiology of sleep (RF 35026).....	6,300.00	6,300.00	
Local community research (RF 31131).....	149,722.50	35,700.00	
Oriental Institute, Support of foreign work (RF 34096, 35021, 35121, 35148) ..	615,000.00	381,069.27	
Research in anthropology (RF 34029).....	22,500.00	12,500.00	
Research in application of spectroscopic methods to biological problems (RF 34020, 35023).....	16,937.50	9,937.50	
Research in the biological sciences (RF 29083, 33105, 35053).....	176,443.95	50,000.00	
Research in the humanities (RF 33123, 35029).....	87,500.00	25,000.00	
Studies in comparative philology (RF 29135).....	26,764.24	18,946.61	
University of Copenhagen, Denmark			
Research on inheritance in relation to blood groupings (RF 34112).....	8,500.00	1,811.75	
Special researches in application of methods of physics, chemistry, and mathematics to biological problems (RF 35043).....	54,000.00	5,718.95	
University of Hawaii, Honolulu			
Racial research (RF 33050).....	20,000.00	13,000.00	
University of Leeds, England			
Research in the x-ray analysis of biological tissues (RF 35145).....	17,750.00	.....
University of Leiden, Netherlands			
Purchase and endowment of a photographic telescope for the Union Observatory, Johannesburg, Union of South Africa (RF 30021, 34100).....	112,673.02	.....	371
Research in child psychiatry (RF 34145).....	19,700.00	3,091.73	

EXHIBIT E—Continued

	APPROPRIATIONS	1935 PAYMENTS	372 THE ROCKEFELLER FOUNDATION
UNIVERSITIES AND OTHER EDUCATIONAL INSTITUTIONS—Continued			
Research Programs—Continued			
University of Liverpool, England			
Social survey of Merseyside. Publication of report (RF 32014, 33082).....	\$2,493.64	\$2,493.64	
University of London, England. School of Oriental Studies			
Research in African linguistics (RF 32072, 33082, 35017).....	30,337.50	15,337.50	
University of Louvain, Belgium. Institute of Economics			
Business cycle research (RF 33010).....	4,018.78	746.27	
University of Manchester, England			
Economic Research Department (RF 35075).....	20,000.00	5,000.00	
University of Michigan, Ann Arbor			
Research in the applications of spectroscopic methods to biological and medical problems (RF 34050, 35046).....	18,400.00	8,500.00	
Research in the humanities (RF 34037, 35033).....	60,000.00	25,000.00	
Research in the physiology of respiration (RF 34049, 35049).....	27,500.00	5,000.00	
University of Minnesota, Minneapolis			
General research fund (RF 31007).....	67,500.00	37,500.00	
University of New Mexico, Albuquerque			
Studies in Hispanic-American culture (RF 34097).....	3,000.00	3,000.00	
University of North Carolina, Chapel Hill			
Program in the social sciences (RF 32029, 35069).....	90,000.00	27,500.00	
Research in the natural sciences (RF 32034).....	2,500.00	2,500.00	
University of Oslo, Norway			
Research program of the Institute of Economics (RF 31122).....	26,290.88	9,625.11	
University of Oxford, England			
Research in the application of mathematical analyses to biological problems (RF 35144).....	12,750.00	.....

University of Paris, France		
Radium Institute. Division of Biophysics (RF 32076, 33082).....	\$96,000.00	\$11,519.25
Research in endocrinology and vitamins (RF 35147).....	8,400.00	.....
Research in the social sciences (RF 34114, 35072).....	141,009.98	21,140.32
University of Pennsylvania, Philadelphia		
Excavations at Ur of the Chaldees (RF 31078).....	4,000.00	.....
General research fund (RF 30094).....	10,000.00	7,500.00
Study of living tissues (RF 34025, 35058).....	16,250.00	6,811.13
Wharton School of Finance and Commerce. Industrial Research Department. Support (RF 34092, 35074).....	87,500.00	25,000.00
University of Rochester, New York. School of Medicine and Dentistry		
Development of the Child Guidance Clinic in the Division of Psychiatry (RF 34103).....	6,500.00	6,006.53
Research on physiology of reproduction (RF 34091, 35052).....	11,550.00	2,373.59
Special research in dental pathology (RF 34102, 34146).....	33,629.35	24,021.47
Special research on pulmonary capacity (RF 34104).....	1,250.00	1,173.99
Studies on the biological effects of heat (RF 34074, 35140).....	9,500.00	6,272.12
University of Sofia, Bulgaria		
Statistical Institute of Economic Research. Budget (RF 35077).....	15,000.00	2,388.45
University of Stockholm, Sweden		
General research program in the social sciences (RF 31034, 33026).....	9,000.00	9,000.00
Increased facilities for investigations in zoophysiology (RF 31149).....	1,471.80	838.30
Research in biophysics, chemical biology, and cell physiology (RF 35142).....	9,850.00	.....
University of Texas, Austin		
Development of program in the social sciences (RF 32030).....	75,000.00	16,666.67
Studies in Hispanic-American culture (RF 34098).....	3,750.00	3,750.00
University of Uppsala, Sweden. Institute of Physical Chemistry		
Additional research assistants (RF 31150).....	882.76	882.76
Research on the physical-chemical properties of proteins and other heavy mole- cules (RF 34111, 35044).....	66,000.00	6,301.33
University of Utrecht, Netherlands		
Research in spectroscopic biology (RF 35143).....	16,800.00

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EXHIBIT E—Continued

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THE ROCKEFELLER FOUNDATION

	APPROPRIATIONS	1935 PAYMENTS
UNIVERSITIES AND OTHER EDUCATIONAL INSTITUTIONS—Continued		
Research Programs—Continued		
University of Virginia, Charlottesville		
General research fund in the humanities (RF 35035).....	\$10,000.00	\$3,750.00
Graduate research in the natural sciences (RF 34153).....	35,000.00	.....
Research in endocrinology (RF 35161).....	15,000.00	.....
Research in the social sciences (RF 30106, 34175).....	40,000.00	10,000.00
University of Warsaw, Poland, Institute of Physics		
Research apparatus (RF 31027).....	1,551.61	1,549.02
University of Wisconsin, Madison		
Research in endocrinology (RF 34099).....	2,000.00	2,000.00
Vanderbilt University, Nashville, Tennessee, School of Medicine		
Research in the medical sciences (RF 31136).....	105,000.00	40,000.00
Washington University, St. Louis, Missouri		
General research fund (RF 30038).....	30,000.00	20,000.00
Research on virus diseases (RF 32056).....	2,173.31	2,173.31
Research in neurophysiology (RF 33061, 35048).....	57,964.92	14,700.00
Western Reserve University, Cleveland, Ohio		
Research on whooping cough (RF 32025).....	11,500.00	4,500.00
Yale University, New Haven, Connecticut		
Excavations at Dura-Europos, Syria (RF 35018).....	30,000.00	7,500.00
Research in the humanities (RF 32033).....	150,000.00	50,000.00
Research in international relations (RF 35079).....	100,000.00	7,500.00
Institute of Human Relations		
Research in psychology, child development, and social sciences (RF 29008) ..	675,000.00	150,000.00
School of Medicine		
General research fund (RF 29147).....	36,250.00	16,250.00
Special research in dental pathology (RF 34076).....	10,000.00	10,000.00

Land and Buildings

Chulalongkorn University, Bangkok, Siam Addition to pathology building, and a building for School of Nursing (RF 30023)	\$28,361.51	\$3,004.89
Connecticut College for Women, New London Building a greenhouse and dark constant temperature and humidity rooms for research in plant hormones (RF 35094).....	10,000.00	10,000.00
London School of Economics and Political Science, University of London, England Erection and equipment of library building (RF 31029).....	1,439.50	Cr. 588.45
Purchase of land for expansion of school plant (RF 31028).....	58,127.66	.....
McGill University, Montreal, Canada Construction and equipment of a laboratory in the Royal Victoria Hospital (RF 32040).....	16,211.78	6,239.72
National Hospital, Queen Square, for the Relief and Cure of Diseases of the Nervous System, Including Paralysis and Epilepsy, London, England Building (RF 35040).....	300,000.00	.....
Shanghai, China. Purchase of land for a medical school and expenses in connection therewith (CM 2269, RF 34056, 34137).....	6,909.42	6,051.66
State Institute of Public Health, Prague, Czechoslovakia Building and equipment for School for Public Health and Social Welfare Nurses (RF 30082).....	3,994.99	.....
University of Geneva, Switzerland, Station of Experimental Zoology Construction and equipment (RF 31036, 33054, 33082).....	6,287.17	6,287.17
University of Lyon, France. School of Nursing Building and equipment (RF 32064, 33054).....	4,522.42	4,522.42
University of Oslo, Norway. Institute of Theoretical Astrophysics Construction and equipment (RF 31035, 34033).....	1,288.70	1,111.50
University of Oxford, England. Bodleian and other libraries Development (RF 31121).....	2,085,363.25	55,945.67
University of Utrecht, Netherlands. Institute of Comparative Physiology Construction of building (RF 33038, 33081).....	61,031.50	57,887.50

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EXHIBIT E—Continued

	APPROPRIATIONS	1935 PAYMENTS	376 THE ROCKEFELLER FOUNDATION
RESEARCH INSTITUTIONS AND ORGANIZATIONS			
Medical Science Education			
Chinese Medical Association, Shanghai			
General budget (RF 33045).....	\$5,630.17	\$5,091.20	
Social Science Education			
Foreign Policy Association, New York City			
Support of experimental educational program (RF 35080).....	37,500.00	11,325.19	
Laboratory of Anthropology, Santa Fe, New Mexico			
Support of field training course in anthropology (RF 29116, 35014).....	23,405.30	10,443.32	
Social Science Research Council, New York City			
Instruction in agricultural economics (RF 30104).....	17,420.53	6,315.28	
Humanities Education			
Institute of Pacific Relations, American Council, New York City			
Experiments in intensive teaching of Chinese language (RF 35182).....	17,500.00	.....
Support of Russian language instruction (RF 34136).....	5,000.00	5,000.00	
General Education			
Canadian National Committee for Mental Hygiene, Toronto			
Development of training centers for advanced students (RF 30088).....	20,587.50	9,915.63	
General Development			
American Schools of Oriental Research, Baghdad and Jerusalem			
Current expenses (RF 29134).....	55,000.00	30,000.00	
Endowment (RF 29134).....	211,068.78	9,950.43	
Brookings Institution, Washington, D. C.			
General endowment (LS 929).....	2,000,000.00	.....
Support of research (RF 31125).....	37,500.00	37,500.00	
Canton of Geneva, Switzerland, Department of Public Instruction			
Postgraduate Institute of International Studies, Maintenance (RF 29136).....	637,500.00	102,730.07	
Hungarian Biological Research Institute, Tihany			
Maintenance (RF 31061).....	1,881.59	.....

Institute of Economic and Social Research, Paris, France			
Establishment and support (RF 33072).....	\$316,309.52	\$42,395.99	
Institute of Economics and History, Copenhagen, Denmark			
General budget (RF 33071).....	12,635.00	5,462.50	
Institute of Pacific Relations, American Council, New York City			
General expenses (RF 34156, 35187).....	72,500.00	25,000.00	
Institute for Psychoanalysis, Chicago, Illinois			
Research and teaching in psychoanalysis (RF 35041).....	100,000.00	7,500.00	
International Institute of African Languages and Cultures, London, England			
General budget (RF 31041, 35085).....	205,266.71	30,127.95	
Library of Congress, Washington, D. C.			
Development of Far Eastern Center in Division of Orientalia (RF 35091).....	30,000.00	5,500.00	
Long Island Biological Association, Cold Spring Harbor, New York			
Biological Laboratory (RF 34149).....	26,000.00	12,000.00	
National Bureau of Economic Research, New York City			
General budget (RF 33063).....	150,000.00	73,918.02	
Social Science Research Council, New York City			
General budget (LS 875).....	200,000.00	48,750.00	
Woods Hole Oceanographic Institution, Massachusetts			
Endowment (RF 35042).....	1,000,000.00	1,000,000.00	
Current expenses (RF 30004).....	255,000.00	40,000.00	
Zoological Station of Naples, Italy			
Current expenses (RF 32087, 33082).....	8,079.75	8,079.75	
Research Programs			
American Council of Learned Societies, Washington, D. C.			
Development of a training center for Far Eastern studies at the Library of Congress, Washington, D. C. (RF 33094).....	8,385.14	7,149.43	
General activities (RF 34157, 35168).....	140,000.00	5,331.66	
Research in paleogeography (RF 29133).....	9,874.69	4,954.12	
Australian National Research Council, Sydney			
Anthropological studies (RF 31095, 35013).....	46,177.49	21,431.69	
Ethnological research in the Melanesian Islands (RF 32059).....	205.00	205.00	

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EXHIBIT E—Continued

	APPROPRIATIONS	1935 PAYMENTS
RESEARCH INSTITUTIONS AND ORGANIZATIONS—Continued		
<i>Research Programs—Continued</i>		
Austrian Institute for Trade Cycle Research, Vienna		
Research program (RF 30087, 33082, 35164).....	\$17,899.27	\$4,000.00
Brookings Institution, Washington, D. C.		
General research program (RF 35066).....	75,000.00	37,500.00
Canadian National Committee for Mental Hygiene, Toronto		
Program of mental hygiene and social research in Canadian universities (RF 33049).....	50,584.94	18,830.12
Center for the Study of Foreign Relations, Paris, France		
Research in international relations (RF 35136).....	70,000.00	.....
Central Institute for the Deaf, St. Louis, Missouri		
Research in neurology (RF 33006).....	991.33	990.86
Chicago Area Project, Illinois		
General budget (RF 34120, 35128).....	37,902.16	17,277.16
Community Council of Philadelphia, Pennsylvania		
Support of the Department of Research (RF 34122, 35165).....	20,000.00	8,750.00
Council on Foreign Relations, New York City		
Research program (RF 32105, 35189).....	75,000.00	25,000.00
Dutch Economic Institute, Rotterdam, Netherlands		
Research program (RF 31046, 33082).....	13,150.00	8,069.00
Economic Foundation, New York City		
International study of the history of prices (RF 29138, 33113).....	97,565.95	29,176.56
Emma Pendleton Bradley Home, East Providence, Rhode Island		
Research in electroencephalography (RF 35096).....	46,500.00	7,500.00
Foreign Policy Association, New York City		
Study of economic and social conditions in Cuba (RF 34066).....	14,298.77	14,298.77
Support of Research Department (RF 34155, 35188).....	100,000.00	25,000.00

Geneva Research Center, Switzerland		
General research budget (RF 33027, 33082, 35100).....	\$19,400.00	\$10,613.31
Institute for Psychiatric Research, Munich, Germany		
Research in neurohistology, serology, and biochemistry (RF 31045, 33082)....	59,747.24	7,488.44
Institute of Pacific Relations, Honolulu, Hawaii		
Pacific Council. General expenses and research program (RF 35186).....	135,000.00	.....
Research in the social sciences (RF 30084).....	50,000.00	50,000.00
International Institute of Intellectual Cooperation, Paris, France		
Maintenance and conferences (RF 35137).....	30,000.00	.....
International Institute of Public Law, Paris, France		
Research program (RF 31001).....	3,971.69	3,765.00
- Kaiser Wilhelm Institute for Brain Research, Berlin-Buch, Germany		
Special apparatus and maintenance (RF 32063, 33082).....	1,638.55	1,638.55
Laboratory of Anthropology, Santa Fe, New Mexico		
Interpretative studies in Indian art (RF 34115).....	3,750.00	1,250.00
Lister Institute of Preventive Medicine, London, England		
Purchase of ultracentrifuge for use in medical research, particularly on the biophysical aspects of body fluids (RF 34126).....	18,000.00	2,396.88
London County Council, England		
Research in psychiatry at Maudsley Hospital (RF 35108).....	45,000.00	.....
Marine Biological Association of China, Amoy		
Support of a marine institute of biology (RF 33039).....	593.58	.....
Massachusetts Department of Mental Diseases, Boston		
Research in psychiatry at Boston State Hospital (RF 34142).....	41,100.00	13,700.00
Massachusetts Society for Mental Hygiene, Boston		
Work in the field of mental disorders (RF 30032).....	1,760.51	1,758.10
Medical Research Council, London, England		
Research on puerperal fever (RF 31044).....	69,968.01	15,000.00
Research on virus diseases (RF 31153).....	2,386.78	.....
Studies in human genetics in relation to mental disease, Galton Laboratory, University of London (RF 35057).....	35,000.00	1,985.00

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EXHIBIT E—Continued

	APPROPRIATIONS	1935 PAYMENTS	380 THE ROCKEFELLER FOUNDATION
RESEARCH INSTITUTIONS AND ORGANIZATIONS—Continued			
<i>Research Programs—Continued</i>			
National Committee for Mental Hygiene, New York City			
Support of activities (RF 34143, 35170).....	\$50,000.00	\$30,000.00	
National Institute of Industrial Psychology, London, England			
Research program (RF 32085, 33054, 33082).....	9,596.24	7,233.27	
National Research Council, Washington, D. C.			
Committee for Research in Problems of Sex (RF 33104, 34147, 35180).....	203,655.97	62,629.18	
Conferences (RF 32010).....	10,000.00	3,000.00	
New Hampshire Foundation, Concord			
Research program (RF 34067, 35084).....	22,500.00	13,215.00	
Notgemeinschaft der Deutschen Wissenschaft, Berlin, Germany			
Research in international relations (RF 31135).....	620.98	569.02	
Orthological Institute, London, England			
Research in the Chinese and Japanese languages in relation to Basic English (RF 33005, 35181).....	42,317.20	7,500.00	
Polish Academy of Sciences, Cracow			
Economic Institute. Research program (RF 35076).....	10,000.00	1,000.00	
Roscoe B. Jackson Memorial Laboratory, Bar Harbor, Maine			
Research in mammalian genetics (RF 34131, 35159).....	47,500.00	12,500.00	
Royal Anthropological Institute of Great Britain and Ireland, London, England			
General budget (RF 31110).....	3,000.00	2,500.00	
Royal Institute of International Affairs, London, England			
Research program (RF 32038, 33082, 34031, 34129).....	71,360.00	19,492.50	
Rumanian Institute of Social Sciences, Bucharest			
General administration and research program (RF 31094, 33082, 35071).....	11,500.00	7,500.00	
Social Science Research Council, New York City			
Conferences and planning (RF 31127).....	186,912.40	37,517.65	
General research projects (RF 31126).....	206,024.00	20,909.96	
Work in the field of social security (RF 35115).....	225,000.00	47,500.00	

Technical Institute, Graz, Austria		
Research in biophysical chemistry (RF 35141).....	\$5,800.00	\$.....
✓ <i>Thesaurus Linguae Latinae</i> , Munich, Germany		
General budget (RF 32104).....	12,000.00	4,000.00
Trudeau Foundation, Trudeau, New York		
Research in tuberculosis (RF 30034).....	2,844.36	2,500.00
Walter and Eliza Hall Institute of Research in Pathology and Medicine, Melbourne, Australia		
Research on virus diseases (RF 34083).....	8,517.50	1,977.50
Welfare Council of New York City		
Research Bureau. Support (RF 34071, 35193).....	120,000.00	60,000.00
Worcester State Hospital, Massachusetts		
Research on dementia praecox (RF 34062, 35012).....	37,500.00	12,610.60
Land and Buildings		
Jungfrauoch Scientific Station, Switzerland		
Construction and equipment (RF 33111).....	10,763.80	3,952.21
Kaiser Wilhelm Institutes of Cell Physiology and Physics, Berlin-Dahlem and Berlin, Germany		
Land, buildings, and equipment (RF 30027).....	360,436.75	360,436.75
SPECIAL COMMITTEES AND COMMISSIONS		
Governor's Commission on Unemployment Relief, New York		
Study of relief situation in New York State (RF 35015).....	5,000.00	5,000.00
Harvard Infantile Paralysis Commission, Boston, Massachusetts		
Studies on poliomyelitis (RF 35131).....	5,000.00	5,000.00
International Commission for the Polar Year 1932-33, Copenhagen, Denmark		
Equipment and expenses (RF 32022, 34132).....	17,425.00	5,425.00
International Committee of Historical Sciences, Zurich, Switzerland		
General expenses (RF 34135).....	10,000.00	2,054.03
National Research Council, Washington, D. C.		
Work of the Committee on Drug Addiction (RF 31130, 34127).....	117,405.91	48,064.88
Work of the Committee on Effects of Radiation on Living Organisms (RF 33108, 35095).....	77,500.00	4,005.26

EXHIBIT E—Continued

	APPROPRIATIONS	1935 PAYMENTS
SPECIAL COMMITTEES AND COMMISSIONS—Continued		
North Carolina. Commission for the Study of the Care of the Mentally Defective (RF 35110).....	\$16,300.00	\$.....
Science Advisory Board, Washington, D. C. General expenses (RF 33086).....	15,000.00	15,000.00
Social Science Research Council, New York City Committee on Government Statistics and Information Services, Washington, D. C. (RF 33065).....	12,083.98	11,868.54
Public Administration Committee, Chicago, Ill. (RF 35114).....	165,000.00	12,979.35
Study of the teaching of preventive medicine, public health, and hygiene in North American and Western European medical schools (RF 35171).....	25,000.00	.....
FELLOWSHIPS AND GRANTS IN AID		
Agricultural Economics, World-wide Study of (RF 35081).....	18,000.00	1,911.87
American Council of Learned Societies, Washington, D. C. Fellowships and research aid grants in the field of humanistic studies (RF 33032, 35038).....	92,905.60	39,017.21
Grants in aid, support of projects, and administration (RF 31129, 33122, 34095).. American School of Classical Studies at Athens, Greece Fellowships in archeology in connection with the excavation of the Athenian Agora (RF 32093, 35093).....	124,943.89	118,812.59
18,350.00	.....
Fellowships Administered by The Rockefeller Foundation		
China. Foreign and local (RF 34160, 35101).....	57,500.00	13,869.48
Humanities (RF 29142, 35065, 35184).....	99,542.42	20,955.39
Medical sciences (RF 30099, 31141, 32110, 34162, 35172).....	387,967.51	96,511.13
Natural sciences (RF 30039, 31142, 32111, 33029, 34168, 35019, 35178).....	347,950.47	78,071.95
Nursing (RF 29149, 30100, 31143, 33018).....	54,226.30	25,009.19
Psychiatry (RF 32113).....	17,777.91	15,149.38
Social sciences (RF 29141, 31057, 32045, 32112, 34044, 34173, 35195).....	437,390.02	192,739.60
In fields of social security, international relations, and public administration (RF 35088, 35191).....	175,000.00	1,780.04

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Grants in Aid			
Humanities (RF 33095, 34043, 35064, 35185).....	\$110,914.64	\$24,204.71	
Medical sciences			
In the fields of psychiatry and public health (RF 33075, 34041, 34166, 34167, 35173).....	266,400.00	66,987.66	
Natural sciences			
In the fields of vital processes and the earth sciences (RF 34042, 34133, 34170, 34171, 35179).....	271,432.48	71,474.89	
Social sciences			
In the fields of social security, international relations, and public administration (RF 35089, 35192).....	105,000.00	9,212.44	
General program (RF 34174, 35196).....	50,000.00	12,203.59	
Hungarian Scholarship Council, Budapest			
Foreign scholarships in medicine (RF 32069).....	2,081.25	1,183.45	
London Hospital, England			
Development of neurosurgery (RF 31073).....	34,141.67	.....
Medical Research Council, London, England			
Fellowships (RF 32004, 33076, 34165, 35027).....	30,152.80	16,401.45	
National Research Council, Washington, D. C.			
Fellowships			
Medical sciences (RF 31054, 33041, 34164, 35036, 35169).....	77,823.77	17,358.33	
Physical and biological sciences (RF 33040, 34169, 35037).....	296,032.58	141,208.12	
Research aid fund (RF 34172).....	80,000.00	33,000.00	
✓ Notgemeinschaft der Deutschen Wissenschaft, Berlin, Germany			
Fellowships in the medical sciences (RF 32005).....	7,663.91	863.03	
Peiping Union Medical College, China			
Fellowships and grants in aid to graduate and departmental students in Peiping Union Medical College (RF 33033, 34105, 34163).....	20,000.00	10,000.00	
Foreign fellowships (RF 33033, 34105, 34163).....	32,124.24	15,033.29	
Research Aid Funds, Europe			
Humanities (RF 30008, 32108).....	16,442.81	3,250.00	
Medical sciences (RF 29127, 30097, 31139, 32106, 34027, 34038).....	216,461.81	56,377.93	

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EXHIBIT E—Continued

	APPROPRIATIONS	1935 PAYMENTS
FELLOWSHIPS AND GRANTS IN AID—Continued		
Research Aid Funds, Europe—Continued		
Natural sciences (RF 32107, 34039).....	\$44,079.48	\$38,911.83
Social sciences (RF 33009, 34040).....	46,342.82	37,737.55
Special fund for European scholars (RF 33055, 33077, 34018, 34028, 35020, 35135, 35153).....	358,193.86	146,942.98
Grants to returned fellows of the Rockefeller boards (RF 32048, 34107, 35006) ..	17,615.06	2,362.30
Research and Developmental Aid in China		
Medical and natural sciences (RF 33028).....	6,862.66	6,752.78
General (RF 34161, 35102).....	25,000.00	14,832.72
Social Science Research Council, New York City		
Fellowships in the social sciences (RF 31109, 33053, 34045, 35039).....	208,737.12	52,032.30
Grants in aid of research (RF 31128).....	54,300.00	21,900.00
University of Padua, Italy. Institute of Histology and Embryology		
Research (RF 31074).....	4,550.37	1,675.72
University of Turin, Italy. Institute of Anatomy		
Research in problems of growth (RF 31068).....	4,234.47	824.93
Visits		
By individuals and commissions (RF 30101).....	15,949.68	2,053.90
By teachers of public health and deans of medical schools in the United States and Canada (RF 34124, 35154).....	7,500.00	2,021.87
STUDIES OF PRESSING ECONOMIC PROBLEMS		
Appraisal and Planning Projects		
Brookings Institution, Washington, D. C.		
Concurrent study of Agricultural Adjustment Administration (RF 33060, 34113).....	50,838.44	39,471.03
Concurrent study of government financial policies (RF 33066).....	3,812.46	1,702.36
Concurrent study of National Industrial Recovery Administration (RF 33067, 34078).....	56,599.09	48,982.18

Social Science Research Council, New York City		
Commission of Inquiry on National Policy in International Economic Relations (RF 33089).....	\$14,084.07	\$13,363.33
Study of population redistribution (RF 34001).....	57,335.11	46,393.21
Study of unemployment reserves and relief (RF 33088).....	1,594.64	.....
Direct Grants to Operating Government Agencies		
Federal Emergency Relief Administration, Washington, D. C.		
Detailed studies of relief cases (RF 33090).....	2,000.00	1,903.60
Subventions to Cooperating Private Agencies		
American Municipal Association, Chicago, Illinois		
Advisory service to municipalities (RF 33097, 34141).....	150,821.68	98,291.48
American Public Welfare Association, Chicago, Illinois		
Support of service to public welfare agencies (RF 34138).....	35,000.00	35,000.00
Commission on Interracial Cooperation, Atlanta, Georgia		
Forwarding the interests of the American Negro in the present economic emergency (RF 34008).....	21,701.02	12,075.75
Emergency fund for research personnel on government projects (RF 34014).....	13,770.00	.....
Foreign Policy Association, New York City		
For publicizing the conflicting issues of economic nationalism and internationalism (RF 34012).....	1,425.40	1,425.40
Industrial Relations Counselors, New York City		
Services to governmental agencies (RF 34003).....	8,776.68	8,202.14
National Association of Housing Officials, Chicago, Illinois		
Emergency training course in management of housing developments (RF 34139)	40,000.00	10,805.06
Expert consultative services to low cost housing projects (RF 34015, 34140) ..	12,498.15	12,475.20
To enable European authorities to attend a conference in the United States on housing program (RF 34079).....	15,000.00	14,986.02
World Peace Foundation, Boston, Massachusetts		
For publicizing the conflicting issues of economic nationalism and internationalism (RF 34013).....	3,352.50	3,352.50

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EXHIBIT E—Continued

	APPROPRIATIONS	1935 PAYMENTS
MISCELLANEOUS		
American Council of Learned Societies, Washington, D. C.		
Completion of <i>Dictionary of American Biography</i> (RF 34134).....	\$35,000.00	\$25,000.00
Support of executive offices (RF 34158).....	25,000.00	6,673.00
American Geographical Society, New York City		
Preparation and publication of Millionth Map of Hispanic America (RF 34086, 35028).....	53,000.00	14,500.00
American Institute of Physics, New York City		
Scientific publications (RF 32017, 35122).....	13,451.54	2,511.91
American Mathematical Society, New York City		
Scientific publications (RF 33014).....	6,750.00	4,500.00
American Psychological Association, Princeton, New Jersey		
<i>Psychological Abstracts</i> (LS 694).....	16,147.44	7,300.50
American School of Classical Studies at Athens, Greece		
Preparation of volume of research studies in classical archeology (RF 35163)....	5,000.00	.....
American Statistical Association, Washington, D. C.		
General budget (RF 34128, 35197).....	30,000.00	7,500.00
Bibliographical Society of America, Providence, Rhode Island		
Index of American newspaper files (RF 33084).....	16,500.00	8,500.00
Bibliothèque Nationale, Paris, France		
For classifying a collection of Library of Congress index cards (RF 35119).....	10,500.00	1,647.50
British Museum, London, England		
To enable the museum to offer to American libraries, at a discount, subscriptions to the new edition of the Catalogue of Printed Books (RF 29086, 30076).....	92,693.23	1,682.61
Additional service in connection with the new edition of the Catalogue of Printed Books (RF 29087).....	5,643.52	880.95
Chinese Mass Education Movement, Ting Hsien		
General budget (RF 35103).....	75,000.00	32,586.13

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Chinese Ministry of Education, Nanking		
Expenses of Commission on Medical Education (RF 35105).....	\$10,625.00	\$4,446.56
Cornell University, Ithaca, New York		
Conference of workers in the biological sciences (RF 35112).....	1,000.00	807.46
<i>Encyclopaedia of the Social Sciences</i> , New York City		
Expenses of production and distribution (RF 32114).....	25,000.00	.....
Exchange fund (RF 33054, 33082, 35100).....	67,065.80	.....
Industrial Relations Counselors, New York City		
Services to state and Federal agencies in field of social security (RF 35132).....	10,000.00	.....
League of Nations, Geneva, Switzerland		
Analytical research work of the Financial Section and Economic Intelligence		
Service (RF 33023).....	125,000.00	6,764.03
Fiscal Committee		
Study of international double taxation problems (RF 33004).....	50,000.00	.....
Library Association, London, England		
For establishing a service of information on library practice (RF 35060).....	17,625.00	2,183.50
Library of Congress, Washington, D. C.		
Accumulation of source materials for American history (RF 34054).....	10,000.00	10,000.00
Long Island Biological Association, Cold Spring Harbor, New York		
Support of a symposium on quantitative biology (RF 34150, 35177).....	21,000.00	7,000.00
Massachusetts Department of Mental Diseases, Boston		
Publication of statistical data on mental disease in Massachusetts (RF 35003)...	26,000.00	.....
Massachusetts Institute of Technology, Cambridge		
Design and development of an improved differential analyzer (RF 35098).....	10,000.00	5,000.00
Medical literature for Russia (RF 32092, 33085, 34125, 35166).....	20,140.46	10,005.83
National Academy of Sciences, Washington, D. C.		
General expenses of National Research Council (RF 34106).....	22,000.00	16,000.00
Work of the Committee in Aid of Research Publications (RF 31058).....	1,065.00	Cr. 239.66
National Agricultural Research Bureau, Ministry of Industry and Agriculture, Nanking, China		
Insect control work (RF 35157).....	17,150.00

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EXHIBIT E—Continued

	APPROPRIATIONS	1935 PAYMENTS
<i>MISCELLANEOUS—Continued</i>		
National Conference on the Nomenclature of Disease, New York City General budget (RF 34068).....	\$1,250.00	\$1,045.93
National Library of Peiping, China Support of <i>Quarterly Bulletin of Chinese Bibliography</i> (RF 35150).....	5,000.00	.....
National Research Council, Washington, D. C. <i>Annual Tables of Constants and Numerical Data</i> . Publication (RF 32020).....	3,000.00	2,000.00
<i>Biological Abstracts</i> . Editing and indexing (RF 34005, 34152, 35123).....	128,159.17	76,302.83
Neurophysiology in European countries, Surveys of (RF 34026).....	1,620.53	1,294.56
Play House Foundation of Cleveland, Ohio Program in community drama (RF 35183).....	38,000.00	.....
Prussian State Library, Berlin, Germany Preparation of material for the Union Catalogue of Prussian Libraries (RF 32102)	30,000.00	4,057.22
Social Science Research Council, New York City <i>Social Science Abstracts</i> (LS 877).....	162,349.04	11,711.56
Society of the Friends of the Bibliothèque Nationale, Paris, France Expenses of printing its General Catalogue (RF 29089, 34094, 35134).....	14,696.23	3,526.79
Spelman Fund of New York, New York City Support of work in public administration (RF 35199).....	1,000,000.00	.....
University of Chicago, Illinois Preparation of <i>Historical Dictionary of American English</i> (RF 34060).....	6,250.00	6,250.00
Purchase of basic documents in the social sciences (RF 34036).....	100,000.00	69,837.93
University of Oxford, England Visits of architect and librarian of the Bodleian Library to the Continent, the United States, and Canada (RF 34069).....	2,357.54	445.13
Virginia Historical Society, Richmond Compilation of <i>Virginia Historical Index</i> (RF 34159).....	6,000.00	6,000.00
Yale University, New Haven, Connecticut Development of library in Department of Drama (RF 34017, 35092).....	13,005.52	1,689.93

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PUBLIC HEALTH

Central Medical School for Native Medical Students, Suva, Fiji		
Construction of a new wing (RF 34117).....	\$9,212.50	\$7,419.44
International Health Division, Rockefeller Foundation		
For work in prior years (See Exhibit F).....	1,489,629.38}	2,015,470.95
For work in 1935 (RF 34176) (See Exhibit F).....	2,200,000.00}	
For work in 1936 (RF 35204).....	2,100,000.00	
Revolving fund. To provide working capital for the International Health Division (RF 29093).....	200,000.00	.....
League of Nations. Health Organization, Geneva, Switzerland		
Epidemiological intelligence, public health documentation, international interchange of public health personnel (RF 29092, 33100, 34178).....	348,985.72	105,220.56
National Health Administration of China, Nanking		
Training of health personnel (RF 35104).....	43,750.00	19,534.91
School of Nursing, Bucharest, Rumania		
Building (RF 35099).....	85,000.00	.....
Schools and Institutes of Hygiene and Public Health		
Bulgaria. Sofia. Land, building, and equipment (RF 30059).....	2,609.64	.....
Hungary. Budapest. Construction and equipment of a new floor (RF 34118).....	17,050.00	9,804.06
Italy. Rome. Buildings and equipment (RF 30024, 33080, 33082).....	28,971.42	10,853.93
Japan. Tokyo. Construction and equipment (RF 32116).....	891,725.01	27,757.64
Rumania. Bucharest		
Construction and equipment (RF 33078).....	72,878.60	.....
Health center (RF 33079).....	15,000.00	.....
University of Brussels, Belgium		
Development of the School of Nursing (RF 35113).....	262,000.00	247,118.13
GENERAL*		
Agricultural Club Work in Finland (RF 30044).....	.02	.....
Commission on Interracial Cooperation, Atlanta, Georgia		
General budget (LS 999).....	173,937.93	36,689.55

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* These appropriations, while administered by The Rockefeller Foundation under the terms of the consolidation agreement, represent items which would not, in general, be included in the present program of the Foundation.

EXHIBIT E—Continued

	APPROPRIATIONS	1935 PAYMENTS
<i>GENERAL—Continued</i>		
East Harlem Nursing and Health Service, New York City		
Nursing and health demonstration (RF 32062).....	\$28,333.34	\$19,166.67
Great Smoky Mountains Memorial Fund, Washington, D. C.		
Expenses of Chase National Bank in administering funds (RF 34009).....	500.00	.....
Harvard University, Cambridge, Massachusetts		
Purchase of Beyer collection of Filipiniana (LS 638).....	47,000.00	.....
Institute of International Education, New York City		
General budget (LS 911).....	67,000.00	30,000.00
Institute of the Educational Sciences, Geneva, Switzerland		
General budget (RF 32002, 34121, 35152).....	21,200.00	9,795.92
Peiping Union Medical College, China		
Allowance for widow of staff member (RF 29034).....	11,333.40	1,115.05
Playground and Recreation Association of America, New York City		
General budget (LS 1000).....	200,000.00	50,000.00
State University of Iowa, Iowa City		
Work in child study and parent education (LS 905, 931-32).....	233,829.30	84,667.40
University of Chicago, Illinois		
Toward expense of establishing cooperative mailing lists for university presses (RF 32095).....	500.00	.....
University of Minnesota, Minneapolis		
Child study and parent education (LS 909, 933-34).....	184,531.89	72,425.34
University of Toronto, Canada		
Development of child research and parent education (RF 30054).....	74,949.66	10,000.00
<i>ADMINISTRATION</i>		
<i>Executive Offices</i>		
1934 (RF 2824, 33117).....	46,391.16	13,382.64
1935 (RF 30009-10, 32070, 34007, 34022, 34179, 35007, 35008, 35133, 35167)....	711,444.20	611,765.62
1936 (RF 35200).....	653,200.00

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Treasurer's Office			
1934 (RF 33118)	\$9,624.59	\$7,251.17
1935 (RF 34180)	31,610.00	22,826.88
1936 (RF 35201)	.. . . . .	31,795.00	.....
Paris Office			
1934 (RF 33119)	.....	33,166.34	22,430.64
1935 (RF 34181)	.....	132,300.00	87,553.96
1936 (RF 35202)	.....	130,600.00	.....
Shanghai Office			
1934 (RF 33120)	.....	3,681.77	2,080.15
1935 (RF 34182)	.....	13,700.00	9,692.08
1936 (RF 35203)	.....	12,500.00	.....
Surveys by others than officers (RF 29096, 31003)	.....	26,956.37	3,466.85
Moving of Foundation's offices (RF 33037)	.....	580.49	71.00
Total Appropriations	.....	<u>\$42,953,698.29</u>	
Unused balances of appropriations allowed to lapse			
Rockefeller Foundation (including \$23,529.08 reverting to			
Authorizations Account)	\$2,846,433.87		
International Health Division	211,931.75	3,058,365.62	
Total Net Appropriations and Expenditures	<u>\$39,895,332.67</u>	<u>\$12,725,439.34</u>

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EXHIBIT E—Continued

REFUNDS

American Institute of Mining and Metallurgical Engineers, New York City (RF 31019).....	\$2,602.31
American Public Welfare Association, Chicago, Illinois (RF 34002).....	164.39
Burma, India. Rural health work (IH 29060).....	45.92
Columbia University, New York City. Studies in nutrition (RF 30089).....	55.93
Grants in aid. Medical sciences, 1934 (RF 34041).....	488.87
International Commission of Historical Sciences, Zurich, Switzerland (RF 33116)...	54.03
Jamaica. Yaws survey, 1932 (IH 31164).....	205.19
Keio Gijuku University, Tokyo, Japan (RF 28432).....	47.80
Massachusetts General Hospital, Boston, Massachusetts (RF 33103).....	6,440.23
Museum and Laboratory of Anthropology at Santa Fe, New Mexico (LS 992).....	51.61
National Research Council, Washington, D. C.	
Research fund 1933 (RF 32109).....	402.85
Research fund 1934 (RF 33121).....	1,962.62
Notgemeinschaft der Deutschen Wissenschaft, Berlin, Germany. Anthropological study (RF 29137).....	320.58
Paris office building (RF 21151).....	793.65
Philippine Islands. Malaria investigations 1933 (IH 32143).....	24.69
Tohoku Imperial University, Sendai, Japan (RF 21167).....	47.80
University of Oregon. School of Medicine, Portland. General research (RF 32051)..	82.20
University of Toronto, Canada. Department of Pediatrics (RF 29028).....	48.36
Virginia Historical Society, Richmond (RF 33046).....	26.69
Y.M.C.A. and Y.W.C.A. International Survey Committee (RF 29035).....	10.00

\$13,875.72

EXHIBIT F
INTERNATIONAL HEALTH DIVISION DESIGNATIONS AND PAYMENTS

STATE AND LOCAL HEALTH SERVICES Public Health Administration United States	PRIOR DESIGNATIONS	1935 DESIGNATIONS	1935 PAYMENTS
Alabama			
1934-36 (IH 33147, 35051).....	\$1,500.00	\$600.00	\$1,500.00
Arkansas			
1934-35 (IH 34027).....	750.00		
California			
1934-35 (IH 34034).....	2,000.00		1,426.97
Georgia			
1934 (IH 33143).....	2,000.00		2,000.00
Idaho			
1935-36 (IH 35082).....		3,675.00	
Kentucky			
1934-35 (IH 34028).....	3,000.00		3,000.00
1935-36 (IH 35024, 35051).....		3,000.00	1,000.00
Maryland			
1932-36 (IH 32001).....	4,257.52		3,079.00
Michigan			
1933-36 (IH 32003).....	5,746.79		2,512.06
North Carolina			
1934-35 (IH 33056).....	1,679.23		1,632.75
1935-36 (IH 35027, 35051).....		1,575.00	493.74
Tennessee			
1932-36 (IH 32005, 34011).....	3,872.28		2,369.56
1935-36 (IH 35030, 35051).....		2,025.00	675.00
Utah			
1934-35 (IH 34010).....	1,654.97		1,649.97

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EXHIBIT F—Continued

	PRIOR DESIGNATIONS	1935 DESIGNATIONS	1935 PAYMENTS	394 THE ROCKEFELLER FOUNDATION
STATE AND LOCAL HEALTH SERVICES—Continued				
Public Health Administration—Continued				
United States—Continued				
Virginia				
1935-36 (IH 35066).....	\$.....	\$3,300.00	\$.....	
West Virginia				
1934-35 (IH 33144).....	2,641.13	.....	2,580.16	
1935-36 (IH 35035, 35051).....	.....	2,475.00	.....
State health surveys				
1935-36 (IH 35065).....	.....	5,000.00	.....
Central America				
Costa Rica. Office in San José				
1933 (IH 32079).....	250.00	.....	121.60	
1934 (IH 33108).....	741.39	.....	719.45	
1935 (IH 34070).....	.....	2,000.00	1,014.89	
Mexico				
Central administration and training station				
1934 (IH 31020, 33145-46, 34006).....	3,499.87	.....	3,190.15	
1935 (IH 34134).....	.....	4,265.00	3,658.08	
The East				
Ceylon and India. Office assistance				
1934 (IH 33132).....	477.27	.....	454.10	
China. Peiping office				
1934 (IH 33133).....	912.05	.....	298.82	
India				
1934 (IH 33134).....	1,890.00	.....	.....
1935 (IH 34071-72, 35015).....	.....	3,240.00	2,279.74	
Netherlands East Indies				
1934 (IH 33135).....	690.16	.....	522.88	
1935 (IH 34073, 35016).....	.....	4,935.00	3,115.22	

Philippine Islands			
1934 (IH 33136).....	\$1,541.83	\$.....	\$687.59
1935 (IH 34074).....		2,900.00	869.90
South Pacific			
Fiji Islands			
1935 (IH 34075).....		1,500.00	426.07
West Indies			
Jamaica. Assistance to Bureau of Health Education			
1932-34 (IH 32046).....	5,382.12		
Puerto Rico			
1934-35 (IH 33107).....	1,335.17		497.34
West Indies and Central America			
1935 (IH 34069).....		2,600.00	1,432.22
Divisions of Vital Statistics			
United States			
Alabama			
1934-35 (IH 33148).....	1,500.00		1,500.00
1935-36 (IH 35051).....		600.00	
Massachusetts			
1933-35 (IH 31020, 33009).....	1,725.00		1,005.00
Missouri			
1934-35 (IH 34018).....	1,035.00		690.00
1935-36 (IH 35025, 35051).....		1,035.00	
South Carolina			
1934-35 (IH 34020).....	2,025.00		2,025.00
Tennessee			
1934-35 (IH 34012).....	1,177.50		1,013.97
1935-36 (IH 35033, 35051).....		1,177.50	196.25
Europe			
Rumania			
1930-35 (IH 30051, 30171, 32016, 32194, 34002).....	9,146.58		4,374.13
Spain			
1930-35 (IH 29094).....	18,382.65		897.56

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EXHIBIT F—Continued

STATE AND LOCAL HEALTH SERVICES—Continued	PRIOR DESIGNATIONS	1935 DESIGNATIONS	1935 PAYMENTS
Divisions of Epidemiology			
United States			
Arizona			
1934-35 (IH 34029).....	\$2,025.00	\$.....	\$2,025.00
1935-36 (IH 35021, 35051).....	.....	1,996.86	.....
Georgia			
1933-34 (IH 33023).....	2,250.00	.....	2,250.00
1934-35 (IH 34045).....	3,750.00	.....	750.00
1936 (IH 35051).....	.....	750.00	.....
Iowa			
1934-35 (IH 33149).....	900.00	.....	600.00
1935-36 (IH 35023, 35051).....	.....	450.00	.....
Kentucky			
1934 (IH 31145, 33167).....	802.12	.....	787.50
1935-36 (IH 34076, 35051).....	.....	2,250.00	1,350.00
Maryland			
1933-34 (IH 33024, 31020).....	1,537.25	.....	1,199.69
1934-35 (IH 34130).....	2,750.00	.....	2,237.41
1935-36 (IH 35051).....	.....	687.50	.....
Baltimore. City Health Department			
1935-36 (IH 35036).....	.....	720.00	720.00
Massachusetts			
1932-35 (IH 32002).....	650.00	.....	.....
Michigan			
Detroit. City Department of Health			
1932-35 (IH 30058, 32004, 32156).....	3,752.42	.....	1,415.49
1935-36 (IH 35067).....	.....	1,500.00	.....

Minnesota			
1935-36 (IH 35038, 35051).....	\$.....	\$3,375.00	\$.....
Mississippi			
1934-35 (IH 33150).....	4,500.00	..	3,000.00
1936 (IH 35051).....	..	750.00	..
Missouri			
1933-34 (IH 33025).....	32.04	..	..
1934-35 (IH 34019).....	1,665.00	..	828.68
1935-36 (IH 35025, 35051) ..	..	1,665.00	..
Montana			
1934-35 (IH 34022).....	2,250.00		2,250.00
New York			
1934-35 (IH 34046, 34131) ..	1,350.00		1,000.00
1935-36 (IH 35039) ..	..	1,400.00	175.00
North Carolina			
1934-35 (IH 34023).....	1,617.25	.....	1,374.25
1935-36 (IH 35028, 35051).....	..	1,575.00	411.42
South Carolina			
1935-36 (IH 35040, 35051) ..	..	2,925.00	975.00
Tennessee			
1934-35 (IH 34013).....	2,010.00	..	2,010.00
Virginia			
1935-36 (IH 35032, 35051) ..	.....	2,025.00	675.00
Canada			
British Columbia			
1934-35 (IH 33151).....	2,587.98	..	1,814.53
Europe			
Austria			
1931-35 (IH 30163) ..	1,385.46	...	818.44
Denmark			
1932-34 (IH 32074) ..	7,776.83	..	5,785.00
1935 (IH 34077).....	5,000.00

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EXHIBIT F—Continued

	PRIOR DESIGNATIONS	1935 DESIGNATIONS	1935 PAYMENTS
STATE AND LOCAL HEALTH SERVICES—Continued			
Public Health Laboratories			
United States			
North Carolina			
1934-35 (IH 34048).....	\$1,687.50	\$.....	\$1,113.49
1935-36 (IH 35068).....	.....	937.50	.....
South Carolina			
1932-34 (IH 31147).....	400.00	.....	.....
Tennessee			
1934-35 (IH 34014).....	1,150.00	.....	1,149.97
1935-36 (IH 35031, 35051).....	.....	1,125.00	375.00
Central America			
Nicaragua			
Equipment (IH 33071, 34052).....	109.13	.....	59.53
Training center			
1935 (IH 35054).....	.....	400.00	.....
Salvador			
Equipment (IH 32028, 33072).....	245.83	.....	245.83
Europe			
Rumania. Equipment (IH 32041).....	528.63	.....	528.63
South America			
Colombia			
1934 (IH 33109).....	2,190.40	.....	801.69
1935 (IH 34078).....	.....	2,450.00	1,516.43
West Indies			
Puerto Rico. Equipment and supplies			
1934-35 (IH 34042).....	1,388.32	.....	1,388.32
1935-36 (IH 35053).....	.....	1,000.00	.....

Divisions of Public Health Nursing

Europe			
Denmark			
1934-35 (IH 30164)	\$4,987.81	\$...	\$1,251.14
Hungary			
1930-35 (IH 30048, 33003, 33065, 34055)	15,120.31		6,662.18
Poland			
1934-35 (IH 33142)	1,475.00		1,305.51
1935-36 (IH 34079)		965.00	
Public Health Nursing Films (IH 32036)	210.27		
Divisions of Sanitary Engineering			
United States			
Arizona			
1933-35 (IH 31028, 33043)	1,518.75		1,518.75
1935-36 (IH 35022, 35051)		1,443.75	
North Dakota			
1934-35 (IH 34049)	1,500.00		1,252.92
South Dakota			
1934-35 (IH 34024)	2,480.72		2,450.47
1935-36 (IH 35029, 35051)		2,400.00	
Tennessee			
1934-35 (IH 34015)	1,725.00		1,725.00
1935-36 (IH 35034, 35051)		1,725.00	575.00
Canada			
Nova Scotia			
1934-37 (IH 34064)	8,500.00		
Central America			
Costa Rica and Nicaragua			
Studies of water supplies (IH 32047)	51.27		22.37
Egypt			
1934-35 (IH 33137)	1,850.22		614.44

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EXHIBIT F—Continued

	PRIOR DESIGNATIONS	1935 DESIGNATIONS	1935 PAYMENTS
STATE AND LOCAL HEALTH SERVICES—Continued			
Divisions of Sanitary Engineering—Continued			
Europe			
Greece			
1934 (IH 33078).....	\$3,237.31	\$.....	\$2,156.14
1935 (IH 34081).....	.....	7,875.00	2,599.07
West Indies			
Jamaica			
1934 (IH 33110).....	200.46	.....	21.76
1935 (IH 34080).....	.....	260.00	83.09
Other State Health Services			
Canada. Quebec			
Division of Industrial Hygiene			
1936-38 (IH 35042).....	.....	8,000.00	.....
Division of Hygiene and Nutrition			
1936-38 (IH 35043).....	.....	8,000.00	.....
Europe			
England. British Colonial Office, London			
Bureau of Hygiene and Tropical Diseases			
1934-36 (IH 31016).....	1,269.50	.....	489.78
Norway. State Institute of Public Health, Oslo			
1929-34 (IH 29043).....	28,642.53	.....	.....
Poland. Bureau of District Health Work, Warsaw			
1934-35 (IH 33079).....	1,635.00	.....	1,450.67
1935-36 (IH 34084).....	.....	1,075.00	.....
South America			
Colombia			
1934 (IH 33112).....	6,726.03	2,136.84
1935 (IH 34083).....	8,400.00	4,667.33

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West Indies			
Jamaica. Bureau of Health Education, Kingston			
1934 (IH 33111).....	\$846.61	\$.....	\$761.87
1935 (IH 34082).....	.....	1,560.00	1,054.36
Local (County) Health Departments			
United States			
Alabama			
1934-35 (IH 34033).....	2,308.13	.. ..	223.14
Florida			
1934-35 (IH 34032).....	625.00	.. ..	208.33
Georgia			
1933-34 (IH 33034).....	1,050.00	.. ..	1,050.00
Iowa			
1934-35 (IH 33152)	1,800.00	.....	.....
Kentucky			
1934-35 (IH 34032).....	1,410.02	.....	.....
1935-36 (IH 35069-77).....	.....	10,495.83	.....
Maryland			
1930-34 (IH 30145, 33036)	4,762.37	.....	1,564.10
Michigan			
1929-34 (IH 29046-49).....	12,222.93	.. ..	.....
Mississippi			
1934 (IH 33153).....	3,300.00	.....	3,300.00
New York			
1935-39 (IH 34047, 34132)	45,937.00	.....	9,485.03
North Carolina			
1934-35 (IH 34032).....	755.56	.....	.....
1935-36 (IH 35078). . . . .	.....	1,500.00	.....
Texas			
1930-35 (IH 31144, 32006, 32183)	3,996.67	283.33
Virginia			
1935-36 (IH 35079-81).....	6,700.00

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EXHIBIT F—Continued

	PRIOR DESIGNATIONS	1935 DESIGNATIONS	1935 PAYMENTS
STATE AND LOCAL HEALTH SERVICES—Continued			
Local (County) Health Departments—Continued			
United States—Continued			
West Virginia			
1933-34 (IH 33041).....	\$116.25	\$.....	\$.....
1934-35 (IH 34037).....	1,750.00	.....	.....
Mississippi flood area (1927-32)			
Training station (IH 31006).....	2,853.22	.....	.....
<i>Record of County Health Organizations in the United States, 1908-1933</i>			
Purchase of copies (IH 33170).....	2,000.00	.....	2,000.00
Canada			
Alberta			
1931-34 (IH 31023, 33044-45).....	1,254.11	.....	.....
1934-37 (IH 34025-26).....	4,030.17	.....	1,965.09
British Columbia			
1933-35 (IH 33038, 33077, 33158, 34030).....	2,957.93	.....	2,940.56
1935-39 (IH 35083).....	.....	8,415.00	.....
Manitoba			
1930-35 (IH 30027, 31004, 32044).....	3,039.97	.....	2,091.40
1935-36 (IH 35151).....	.....	1,180.00	.....
Ontario			
1935-37 (IH 34065).....	34,000.00	.....	.....
Quebec			
1930-34 (IH 29052).....	5,810.64	.....	1,648.36
Central America			
Costa Rica			
1933-35 (IH 33074, 34136).....	1,161.54	.....	684.99
1935-36 (IH 35055).....	.....	600.00	.....

Nicaragua			
1933-34 (IH 33076, 34040)	\$1,053.83	\$.....	\$751.34
1935-36 (IH 35047, 35056)	.....	2,400.00	.....
Panama			
1933 (IH 32103, 33006)	196.25	.....	196.25
1934 (IH 33116)	734.95	.....	721.86
1935 (IH 34086)	.....	1,000.00	918.81
Europe			
Austria			
1934 (IH 33173)	875.00	.....	875.00
1935 (IH 34088)	.....	2,105.00	.....
Hungary			
1934 (IH 33080-84)	20,620.00	.....	17,297.88
1935 (IH 34089-93)	.....	25,875.00	.....
Irish Free State			
1930-35 (IH 29245-46, 30050, 35010-11)	17,062.33	152.00	7,268.57
Italy			
1931-35 (IH 33082, 31170)	6,559.15	.....	3,737.94
Poland			
1929-34 (IH 29070)	618.34	.....	.....
Rumania			
1931-36 (IH 30170)	3,948.15	.....	2,335.74
Spain			
1932-36 (IH 32065)	3,630.45	.....	2,694.23
1934 (IH 33085)	2,800.00	.....	2,589.60
1935 (IH 34094)	.....	3,000.00	2,057.53
Turkey			
1934-35 (IH 34003)	2,518.57	.....	2,246.13
1935-36 (IH 35049)	.....	4,000.00	.....
Mexico			
1934 (IH 33159, 33163)	2,733.65	2,499.25
1935-40 (IH 34135, 35084)	44,680.00	5,528.29

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EXHIBIT F—Continued

	PRIOR DESIGNATIONS	1935 DESIGNATIONS	1935 PAYMENTS
STATE AND LOCAL HEALTH SERVICES—Continued			
Local (County) Health Departments—Continued			
South America			
Colombia			
1934 (IH 33058).....	\$3,189.44	\$.....	\$900.90
The East			
Ceylon			
1934-35 (IH 33177, 34053).....	4,006.39	.....	1,794.85
Fiji			
1932-35 (IH 31159).....	2,767.47	.....	1,607.21
India			
All-India Institute of Hygiene and Public Health, Calcutta			
Survey. Field training area (IH 33175).....	1,000.00	.....	.....
Madras			
1934-35 (IH 33176).....	4,209.86	.....	.....
1935 (IH 34054).....	8,400.00	.....	.....
1935-37 (IH 35060).....	.....	7,040.00	.....
Travancore			
1934-35 (IH 33138, 34142).....	3,518.27	75.00	3,534.37
1935-37 (IH 35061, 35086).....	.....	4,200.00	.....
United Provinces			
1933-37 (IH 31163).....	19,567.57	.....	8,095.23
Java			
1933-38 (IH 32189, 33077, 34143).....	17,801.92	14,800.00	7,852.12
Philippine Islands			
1931-34 (IH 31057, 33060).....	284.72	.....	123.81
West Indies			
Jamaica			
1934 (IH 33113-14).....	585.78	.....	.....

Puerto Rico				
1932-36 (IH 32072, 33115, 34085).....	\$5,562.6	\$2,930.00	\$5,050.11	
PUBLIC HEALTH EDUCATION				
Schools of Hygiene and Public Health				
Europe				
Greece. National Institute of Hygiene, Athens				
Maintenance				
1935-36 (IH 35009, 35048).....		7,000.00		
Hungary. State Hygienic Institute, Budapest				
School for Public Health Officers				
1934 (IH 33089).....	3,865.00		3,241.90	
1935 (IH 34099).....		4,665.00		
Norway. School of Public Health, Oslo				
Maintenance				
1930-35 (IH 30012).....	1,368.17			
Poland. State Institute and School of Hygiene, Warsaw				
Maintenance				
1933-34 (IH 33005, 33077).....	4,175.00		4,175.00	
1934-35 (IH 33090).....	5,400.00		4,792.50	
Rumania. Institute of Hygiene, Bucharest				
Development of health center				
1935-37 (IH 35058).....	15,000.00			
Yugoslavia. School of Public Health, Zagreb				
Maintenance				
1933-35 (IH 33050, 34004).....	10,925.00			
1935-36 (IH 35050).....		15,000.00		
The East				
Japan. Institute of Public Health, Tokyo				
Field training area				
1935-37 (IH 32188).....	90,165.00			

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EXHIBIT F—Continued

	PRIOR DESIGNATIONS	1935 DESIGNATIONS	1935 PAYMENTS
PUBLIC HEALTH EDUCATION—Continued			
Schools of Nursing			
United States			
Skidmore College, Saratoga Springs, New York			
1934-35 (IH 34039).....	\$10,000.00	\$.....	\$9,500.64
1935-36 (IH 35041).....	.....	10,000.00	2,528.85
University of Washington, Seattle			
1935-39 (IH 35005).....	.....	30,000.00	5,000.00
Vanderbilt University, Nashville, Tennessee			
1933-34 (IH 32197).....	17,500.00	.....	17,500.00
1935-36 (IH 35006).....	.....	18,333.33	5,000.00
Western Reserve University, Cleveland, Ohio			
University district for public health nurse training			
1935-36 (IH 35007).....	.....	10,000.00	5,000.00
Europe			
Rumania. School of Nursing, Bucharest			
Developmental aid			
1936-38 (IH 35085).....	.....	12,000.00	.....
South America			
Brazil. School of Nursing, Rio de Janeiro			
Salary and travel of acting directress (IH 33171).....	4,413.60	.....	2,051.43
Other Schools			
The East			
China. First Midwifery School, Peiping			
1930-34 (IH 29257).....	2,619.02	.....	1,026.70
Fiji. Central Medical School for Native Medical Students, Suva			
Enlarging laboratory building and for equipment (IH 35087).....	6,750.00

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Training of Health Workers			
United States			
Maryland			
1932-34 (IH 32042).....	\$1,523.27	\$...	\$.....
Europe			
1933 (IH 32116).....	1,189.80	.	201.08
Travel of Government Health Officials			
European health officials in Europe			
1933 (IH 32113).....	1,274.98	..	153.78
Visiting health officials			
1932 (IH 31095).....	2,598.23	.	.....
1933 (IH 32114).....	2,713.56	.	2,625.93
Travel of Government Health Officials and Training of Health Workers			
1934 (IH 33087, 34007).....	10,055.80	..	5,382.94
1935 (IH 34096, 35018).....	.....	22,000.00	12,235.68
Travel Allowance for Nurse Leader, United States to Greece and Return (IH 35062).....			
.....	.....	440.00	236.89
Training Stations			
United States			
Harvard University, Cambridge, Massachusetts			
Field training and study area			
1935-39 (IH 34068).....	25,000.00	..	.....
Johns Hopkins University, Baltimore, Maryland			
Field training and study area			
1932-36 (IH 32038, 32195-96).....	57,591.34	.	25,321.29
1937 (IH 34050).....	16,665.00	..	.....
Central America			
1934 (IH 33118).....	245.64	245.64
Europe			
Italy			
1934 (IH 33088)	835.86	..	578.68

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EXHIBIT F—Continued

	PRIOR DESIGNATIONS	1935 DESIGNATIONS	1935 PAYMENTS
PUBLIC HEALTH EDUCATION—Continued			
Training Stations—Continued			
South America			
Colombia			
1933-34 (IH 33059).....	\$1,700.67	\$.....	\$820.81
1935 (IH 34098).....	.....	700.00	.....
West Indies			
Puerto Rico			
1934 (IH 33117).....	1,148.96	.....	324.00
1935 (IH 34097).....	.....	8,320.00	5,843.90
Fellowships			
Grants to doctors for study of public health			
1932 (IH 31092, 32199).....	9,748.40	.....	96.43
1933 (IH 32111).....	19,075.36	.....	11,490.90
1934 (IH 33086, 34008).....	113,569.85	.....	99,378.71
1935 (IH 34095, 35017).....	.....	250,500.00	113,551.96
Aid to former fellows			
Hungary			
1934 (IH 33091).....	1,200.00	.....	1,200.00
Bulgaria and Yugoslavia			
1935 (IH 34100).....	.....	3,000.00	.....
The Journal of Industrial Hygiene			
1933-35 (IH 32198).....	2,000.00	.....	2,000.00
1936 (IH 35019).....	.....	2,000.00	.....
CONTROL AND INVESTIGATIONS OF SPECIFIC DISEASES			
Hookworm Disease			
Control			
Egypt			
1934 (IH 33139).....	2,722.64	.....	421.63
1935 (IH 34101).....	.....	5,171.00	3,016.24

Investigations and surveys			
United States			
Alabama			
1932 (IH 31020, 31102).....	\$511.20	\$.....	\$.....
Johns Hopkins University, School of Hygiene and Public Health, Baltimore, Maryland			
1935-36 (IH 34067).....	1,200.00	.....	312.42
1936-37 (IH 35149).....	.....	1,200.00	.....
Mississippi			
1934 (IH 34035).....	1,090.00	.....	1,090.00
North Carolina			
1935-37 (IH 35052).....	.....	4,500.00	.....
South Carolina			
1934-35 (IH 34036).....	3,208.34	.....	3,208.34
Vanderbilt University, Nashville, Tennessee			
Research on carbon tetrachloride			
1932-36 (IH 32039, 33174, 34038).....	6,330.94	.....	5,848.93
Egypt			
1933 (IH 32124).....	719.13	.....	125.10
1934 (IH 33140).....	1,324.42	.....	593.35
1935 (IH 34139).....	.....	4,712.00	3,972.31
The East			
Western Samoa. Hookworm and yaws campaign			
1932-34 (IH 31161, 33007).....	216.56	.....	165.96
Malaria			
Control			
United States			
Florida			
1932-34 (IH 32068).....	225.00	.....	125.00
Georgia			
1934 (IH 33165).....	3,000.00	3,000.00
Mississippi			
1934 (IH 33166).....	2,100.00	2,100.00

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EXHIBIT F—Continued

	PRIOR DESIGNATIONS	1935 DESIGNATIONS	1935 PAYMENTS
CONTROL AND INVESTIGATIONS OF SPECIFIC DISEASES—Continued			
<i>Malaria—Continued</i>			
<i>Control—Continued</i>			
<i>Central America</i>			
<i>Costa Rica</i>			
1933-34 (IH 33073).....	\$150.41	\$.....	\$84.25
1934 (IH 33120).....	450.00	.....	450.00
1935 (IH 34103).....	.....	900.00	450.00
<i>Nicaragua</i>			
1933-34 (IH 33075).....	428.00	.....	412.65
1934-35 (IH 34137).....	400.00	.....	360.32
1935 (IH 34138, 35046).....	.....	900.00	300.00
<i>Panama</i>			
1933 (IH 32128, 33006).....	153.75	.....	153.75
1934 (IH 33121).....	2,305.88	.....	2,281.28
1935 (IH 34104).....	.....	3,100.00	2,585.86
<i>Salvador</i>			
1934-35 (IH 34061).....	600.00	.....	217.69
1935-36 (IH 35057).....	.....	600.00	.....
<i>Europe</i>			
<i>Albania</i>			
1933-34 (IH 32131, 33092).....	8,159.91	.....	4,341.72
1935 (IH 34105).....	.....	17,510.00	8,687.60
<i>South America</i>			
<i>Brazil</i>			
1929-30 (IH 28183, 29217).....	15,174.19	.....	.....
<i>Colombia</i>			
1934 (IH 33119).....	1,950.25	.....	453.39
1935 (IH 34102).....	.....	2,800.00	1,726.48

Investigations and Surveys

United States

Florida

1934 (IH 33164).....	\$2,272.50	\$.....	\$2,256.90
1935 (IH 34107).....	.....	10,000.00	7,684.21
University of Chicago, Illinois			
1934 (IH 33103).....	15.50	.....	.....
1935 (IH 34106).....	2,000.00	1,242.73

Central America

Panama

1932-33 (IH 32049).....	250.65
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Europe

Albania

1933-34 (IH 32136, 33077, 33094).....	3,131.39	1,645.98
1935 (IH 34109).....	7,820.00	4,293.07

Bulgaria

1934 (IH 33095).....	5,518.63	.....	5,308.65
1935 (IH 34110).....	.....	22,100.00	11,980.84

Greece

1934 (IH 33096).....	11,729.86	.....	5,796.20
1935 (IH 34111).....	.....	39,375.00	11,711.51

Italy

Institute of Public Health, Rome. Laboratory			
1935 (IH 34112).....	.....	33,200.00	19,809.20
Experiment station for malaria control			
1933-34 (IH 32139, 33077, 33097, 34056).....	37,881.13	.....	26,378.33
Special studies in therapeutic malaria			
1934 (IH 33098).....	633.20	.....	362.68
1935 (IH 34113).....	.....	3,000.00	978.01
Netherlands. Amsterdam			
1930-35 (IH 29091).....	1,883.33	1,426.07

TREASURER'S REPORT

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EXHIBIT F—Continued

	PRIOR DESIGNATIONS	1935 DESIGNATIONS	1935 PAYMENTS
CONTROL AND INVESTIGATIONS OF SPECIFIC DISEASES—Continued			
Malaria—Continued			
Investigations and Surveys—Continued			
Europe—Continued			
Portugal			
1934 (IH 33099).....	\$2,128.47	\$.....	\$1,851.94
1935 (IH 34114).....	.....	8,400.00	2,800.54
Spain			
1933 (IH 32142).....	1,325.64	.....	.....
1934 (IH 33100).....	1,981.17	.....	1,306.40
1935 (IH 34115).....	.....	6,000.00	3,754.89
The East			
India. Mysore			
1935 (IH 34140-41).....	.....	6,000.00	5,135.15
Philippine Islands			
1933-34 (IH 32143, 33141, 34043).....	1,690.40	.....	583.79
West Indies			
Cuba			
1935 (IH 35044).....	.....	10,245.00	7,626.56
Puerto Rico			
1933-34 (IH 34041).....	2,115.36	.....	2,114.36
1935 (IH 34108).....	.....	9,000.00	6,336.48
Yellow Fever			
Control			
Brazil			
1934 (IH 33106).....	110,066.78	.....	92,741.59
1935 (IH 34116).....	.....	200,000.00	151,673.05

Investigations			
Bolivia			
1932-33 (IH 32061).....	\$6,166.55	\$.....	\$50.00
1934 (IH 33106).....	7,900.35	.....	1,893.89
Brazil. Laboratories of the International Health Division			
Bahia			
1934 (IH 33106).....	31,908.76	.....	22,798.29
Rio de Janeiro			
1935 (IH 34116).....	.....	42,000.00	10,741.17
Colombia			
1934 (IH 33106).....	1,000.00	.....	1,000.00
Cuba			
1935 (IH 34045).....	.....	1,255.00	300.00
Ecuador			
1933-34 (IH 33061).....	107.67	.....	107.67
France. Pasteur Institute, Paris			
1935 (IH 34116).....	.....	3,500.00	2,535.45
Paraguay			
1934 (IH 33106).....	1,802.48	.....	.....
Peru			
1934 (IH 33106).....	982.80	.....	439.69
West Africa			
1934 (IH 33106).....	30,318.68	.....	Cr. 591.17
Surveys and investigations in any region			
1934-35 (IH 33106).....	18,612.72	.....	4,042.14
1935 (IH 34116).....	.....	28,000.00	18,091.22
Tuberculosis			
United States			
Alabama			
1933-34 (IH 33053).....	5,722.56	5,512.42
1935 (IH 34129).....	25,940.00	17,177.61

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EXHIBIT F—Continued

	PRIOR DESIGNATIONS	1935 DESIGNATIONS	1935 PAYMENTS
CONTROL AND INVESTIGATIONS OF SPECIFIC DISEASES—Continued			
Tuberculosis—Continued			
United States—Continued			
Cornell University Medical College, New York City			
1932-36 (IH 32037).....	\$14,043.36	\$.....	\$10,954.12
1935-37 (IH 35003, 35064).....	.....	25,850.00	3,719.53
New York Hospital-Cornell Medical College Association, New York City			
1934-35 (IH 34005).....	4,100.00	.....	3,967.58
1935-36 (IH 35002).....	900.00	4,100.00	699.80
Tennessee			
1934-35 (IH 34017).....	7,535.66	.....	7,429.63
1935-36 (IH 35004).....	.....	10,000.00	2,500.00
Central America			
Panama			
Survey, 1934 (IH 33127).....	250.00	.....	246.29
West Indies			
Jamaica			
Studies in tuberculosis			
Mental Hospital			
1934 (IH 33126).....	2,222.53	.....	400.05
1935 (IH 34118).....	.....	1,820.00	963.67
Roentgenological Laboratory			
1934 (IH 33123).....	701.80	.....	.....
Special studies			
1934 (IH 33124).....	818.01	.....	335.95
1935 (IH 34117).....	.....	2,235.00	1,355.33

Survey			
1934 (IH 33125)...	\$2,476.87	\$	\$989.83
Tuberculosis study clinic			
1934 (IH 33122)...	657.23	.	.....
• Europe			
Austria			
1934 (IH 33101, 34060) ..	8,320.00	.	7,897.37
1935 (IH 34119) ..	..	6,115.00	.
Yaws Survey			
West Indies, Jamaica			
Central office and laboratory			
1934 (IH 33128)	1,757.73	.	1,153.08
1935 (IH 34120) ..	..	11,440 00	8,329.05
Research clinic			
1934 (IH 33129) ..	3,221.99	..	1,563.42
Entomological unit			
1935 (IH 34123) ..	..	2,340 00	1,862.51
Field units			
1934 (IH 33130-31) .	4,133.46	.	1,976.13
1935 (IH 34121-22)	..	11,440.00	7,567.51
Undulant Fever			
France, Investigations			
1932-33 (IH 31168, 32190) ..	1,236.32	..	..
1934 (IH 33102) ...	7,689.51	.	7,510.40
1935 (IH 34124) .	.....	12,250.00	6,341.19
Mental Hygiene			
Johns Hopkins University, Baltimore, Maryland. School of Hygiene and Public Health			
Study			
1934-35 (IH 34051) ..	6,000.00	5,910.50
1935-36 (IH 35037)	10,700.00	..

TREASURER'S REPORT

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EXHIBIT F—Continued

	PRIOR DESIGNATIONS	1935 DESIGNATIONS	1935 PAYMENTS
CONTROL AND INVESTIGATIONS OF SPECIFIC DISEASES—Continued			
Mental Hygiene—Continued			
Tennessee. State Department of Health			
Research			
1935 (IH 34133).....	\$.....	\$15,000.00	\$1,841.71
National Department of Health, Poland			
Development of a division of mental hygiene in the Warsaw			
School of Hygiene			
1935-36 (IH 35012).....	.....	15,000.00	.....
Sanitation			
Cook Islands. Soil sanitation			
1931-35 (IH 31160, 34066).....	2,745.28	.....	992.39
Other Specific Diseases			
United States			
Alabama			
Study of typhus fever			
1932-35 (IH 32067, 33169).....	6,190.12	.....	4,389.62
Massachusetts			
Study of cancer			
1932-35 (IH 31154).....	4,885.02	.....	2,433.96
New York. Columbia University, New York City			
Studies of the common cold			
1935-36 (IH 35001).....	.....	10,000.00	.....
Tennessee			
Study of smallpox vaccine virus			
1933-34 (IH 33057).....	500.00	.....	500.00
1935-37 (IH 34125, 35150).....	.....	4,500.00	1,000.00

Virginia			
Study of scarlet fever			
1932-34 (IH 31156).....	\$4,561.07	\$.....	\$2,543.07
China			
Diphtheria research, Peiping			
1935-36 (IH 35059).....	.....	1,350.00	.....
Europe			
Austria			
Diphtheria research			
1933-34 (IH 33001, 33064).....	431.07	.....	.....
1934-35 (IH 34001).....	3,681.48	.....	1,414.75
Poland			
Institute of Hygiene, Warsaw			
Studies in typhoid fever and tuberculosis			
1935-36 (IH 35013).....	.....	1,200.00	565.20
Rumania			
Scarlet fever studies			
1934-35 (IH 34057).....	20,000.00	.....	.....
Spain			
Smallpox Vaccine Laboratory			
1934 (IH 34058).....	5,100.00	.....	5,021.51
1935 (IH 34126, 35014).....	.....	4,770.00	3,439.64
Respiratory Diseases. Influenza Studies			
1935-36 (IH 35063).....	.....	25,000.00	.....
LABORATORIES OF THE INTERNATIONAL HEALTH DIVISION AT THE			
ROCKEFELLER INSTITUTE FOR MEDICAL RESEARCH, NEW YORK CITY			
1934 (IH 33105, 34009, 34044, 34059).....	23,737.74	.....	16,909.32
1935 (IH 34127, 35020).....	.....	84,000.00	71,493.63
FIELD SERVICE			
Salaries and expenses of staff 1934-35 (IH 30167, 33104, 34128)			
Salaries.....	3,480.38	505,000.00	486,865.25

TREASURER'S REPORT

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EXHIBIT F—Continued

	PRIOR DESIGNATIONS	1935 DESIGNATIONS	1935 PAYMENTS
<i>FIELD SERVICE—Continued</i>			
<i>Salaries and expenses—Continued</i>			
Commutation.....	\$15,093.95	\$48,000.00	\$38,877.80
Travel.....	21,021.87	143,000.00	139,108.57
Medical examinations.....	459.75	1,000.00	573.25
Field equipment and supplies.....	220.52	8,000.00	7,265.11
Pamphlets and charts.....	1,805.94	6,000.00	5,033.36
Express, freight, and exchange.....	1,396.85	1,000.00	297.90
Insurance and retirement allowances.....	27,892.49	55,000.00	53,523.37
Bonding.....	279.21	3,000.00	1,360.67
Automobiles.....	1,000.00	1,000.00	.....
DIRECTOR'S FUND FOR BUDGET REVISION (IH 34006).....	3,359.00	.....	.....
EXCHANGE FUND (IH 33052, 33077).....	17,120.71	.....	.....
Totals.....	<u>\$1,489,629.38</u>	<u>\$2,191,782.27*</u>	<u>\$2,015,470.95</u>

* The Foundation appropriated \$2,200,000 for the work of the International Health Division during 1935, the undesignated balance of \$8,217.73 being allowed to lapse as of December 31, 1935.

EXHIBIT C
SUMMARY OF PRIOR OBLIGATIONS ACCOUNT
December 31, 1935

PRIOR OBLIGATIONS ACCOUNT		
Unpaid appropriations, and unappropriated pledges and authorizations, December 31, 1934		
Appropriations	\$5,003,851.25	
Pledges and authorizations.....	1,027,000.00	\$6,030,851.25
Less		
Payments made during the year 1935.....	\$1,052,641.88	
Unused balances of appropriations allowed to lapse.....	2,195,561.55	
Pledge allowed to lapse.....	50,000.00	3,298,203.43
Balance on December 31, 1935, of unpaid appropriations, and unappropriated pledges and authorizations made prior to January 3, 1929.....		<u>\$2,732,647.82</u>

TREASURER'S REPORT

EXHIBIT H
SUMMARY OF APPROPRIATIONS ACCOUNT

December 31, 1935

CURRENT APPROPRIATIONS ACCOUNT

Unpaid appropriations, and unappropriated pledges and authorizations, December 31, 1934		
Appropriations.....	\$23,874,107.44	
Pledges and authorizations.....	3,761,676.93	\$27,635,784.37
<hr/>		
Appropriations, pledges, and authorizations made during the year 1935		
Appropriations.....	\$13,645,739.60	
Less appropriations previously included as pledges and authorizations.....	450,000.00	
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Pledges and authorizations.....	\$13,195,739.60	13,631,339.56
<hr/>		
		\$41,267,123.93
Less		
Payments made during the year 1935.....	\$11,672,797.46	
Unused balances of appropriations allowed to lapse.....	839,274.99	
Authorizations allowed to lapse.....	1,125,000.00	13,637,072.45
<hr/>		
Balance on December 31, 1935, of unpaid appropriations and unappropriated pledges and authorizations made subsequent to January 2, 1929.....		<u>\$27,630,051.48</u>

EXHIBIT I
STATEMENT OF PRINCIPAL FUND

Unappropriated principal, December 31, 1934.....	\$153,609,942.09
Pledge allowed to lapse (prior obligations).....	50,000.00
	<u>153,659,942.09</u>
Balance, December 31, 1935.....	<u>\$153,659,942.09</u>

This fund is accounted for in securities.

STATEMENT OF RESERVE FOR CONTINGENT PROJECTS

Balance, December 31, 1934 (unchanged).....	<u>\$1,500,000.00</u>
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This fund is accounted for in securities.

TREASURER'S REPORT

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EXHIBIT J
STATEMENT OF BUILDING AND EQUIPMENT FUND

	TOTAL DEC. 31, 1934	EXPENDI- TURES 1935	TOTAL DEC. 31, 1935
New York Office			
Library.....	\$14,878.10	\$806.65	\$15,684.75
Equipment.....	\$37,568.64		
Less depreciation 1935.....	4,686.23	2,976.36	35,858.77
	<hr/>		
Paris Office			
Part interest in building occupied by Paris office.....	65,307.94	Cr. 793.65	64,514.29
	<hr/>		
	<u>\$113,068.45</u>	<u>\$2,989.36</u>	<u>\$116,057.81</u>

EXHIBIT K
SCHEDULE OF SECURITIES ON DECEMBER 31, 1935
BONDS

NAME	INTEREST RATE PER CENT	DATE OF MATURITY	AMOUNT	FOUNDATION'S LEDGER VALUE PER CENT	FOUNDATION'S TOTAL LEDGER VALUE
American Telephone & Telegraph Co. Thirty-Year Collateral Trust.....	5	Dec. 1946	\$97,000.00	97.75	\$94,817.50
Armour & Co. (Illinois) Real Estate First Mortgage Gold.....	4½	June 1939	1,142,000.00	87.	993,540.00
Atchison, Topeka, & Santa Fe Ry. Twenty- Year Convertible Gold.....	4½	Dec. 1948	274,000.00	118.	323,320.00
Atchison, Topeka, & Santa Fe Ry. One Hundred-Year Adjustment Mortgage Gold (Stamped).....	4	July 1995	420,000.00	75.	315,000.00
Baltimore & Ohio R.R. Refunding & General Mortgage Gold Series "A".....	5	Dec. 1995	1,750,000.00	80.	1,400,000.00
Baltimore & Ohio R.R. Refunding & General Mortgage Series "F".....	5	Mar. 1996	495,500.00	101.8848	504,839.38
Burlington, Cedar Rapids, & Northern Ry. Consolidated First Gold.....	5	April 1934	64,000.00	101.5625	65,000.00
Calgary Protestant Public School District No. 19, Province of Alberta.....	5	Serially June 2, 1936-48	116,000.00	85.	98,600.00
Carolina, Clinchfield, & Ohio Ry. First Mortgage Thirty-Year Gold.....	5	June 1938	1,438,000.00	75.	1,116,000.00
Chesapeake & Ohio Ry. Equipment Gold of 1930.....	4½	May 1936	125,000.00	100.381032	125,476.29

TREASURER'S REPORT

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EXHIBIT K—Continued

NAME	INTEREST RATE PER CENT	DATE OF MATURITY	AMOUNT	FOUNDATION'S LEDGER VALUE PER CENT	FOUNDATION'S TOTAL LEDGER VALUE
Chicago & Alton R.R. Refunding Mortgage Gold.....	3	Oct. 1949	\$551,000.00	65.	\$358,150.00
Chicago City & Connecting Rys. Collateral Trust (Certificates of Deposit).....	5	Jan. 1927	1,305,000.00	52.	678,600.00
Chicago & Erie R.R. First Mortgage Gold.	5	May 1982	156,000.00	93.	145,080.00
Chicago Gas Light & Coke Co. First Mortgage.....	5	July 1937	22,000.00	102.3892272	22,525.63
Chicago, Junction Rys., & Union Stockyards Co. Forty-Year Mortgage and Collateral Refunding.....	5	Apr. 1940	500,000.00	93.	465,000.00
Chicago, Milwaukee, & St. Paul Ry. Receivers' Equipment Gold Series "D".....	5	\$133,000 due Aug. 1 each year, 1935-40	798,000.00	98.25	784,035.00
Chicago, Milwaukee, & St. Paul Ry. General Mortgage Gold Series "C".....	4½	May 1989	500,000.00	103.	515,000.00
Chicago, Milwaukee, St. Paul, & Pacific R.R. Fifty-Year Mortgage Series "A"....	5	Feb. 1975	446,300.00	95.	423,985.00
Chicago, Milwaukee, St. Paul, & Pacific R.R. Convertible Adjustment Mortgage Series "A".....	5	Jan. 2000	1,785,200.00	62.50	1,115,750.00
Chicago & North Western Ry. General Mortgage.....	5	Nov. 1987	201,000.00	98.097	197,175.00
Chicago Rys. Co. First Mortgage Gold (25% paid) (Certificates of Deposit).....	5	Feb. 1927	500 bonds @ \$750 each, or 375,000.00	96.	360,000.00

Chicago, Rock Island, & Pacific Ry. Equipment Gold Series "Q".....	4½	June 1935	\$100,000.00	100.456268	\$100,456.27
Chicago, Rock Island, & Pacific Ry. Equipment Gold Series "Q".....	4½	Dec. 1935	100,000.00	100.49664	100,496.64
Chicago, Rock Island, & Pacific Ry. Equipment Gold Series "Q".....	4½	June 1936	100,000.00	100.53614	100,536.14
Chicago, Rock Island, & Pacific Ry. Equipment of 1927 Series "O".....	4½	July 1936	129,000.00	100.549186	129,708.45
Chicago, Rock Island, & Pacific Ry. Equipment of 1927 Series "O".....	4½	July 1937	143,000.00	100.061573	143,088.05
Chicago, Rock Island, & Pacific Ry. Equipment Gold of 1929 Series "P" (Stamped) (Extended).....	4½	Aug. 1937	128,000.00	100.66364	128,849.46
Chicago, Rock Island, & Pacific Ry. First and Refunding Mortgage Gold.....	4	Apr. 1934	2,732,000.00	95.92119	2,620,566.93
Chicago, St. Louis, & New Orleans R.R., Consolidated Mortgage Gold.....	3½	June 15, 1951	200,000.00	66.	132,000.00
Cleveland, Cincinnati, Chicago, & St. Louis Ry. General Mortgage.....	4	June 1993	700,000.00	83.89285	587,250.00
Cleveland Short Line Ry. First Mortgage Gold.....	4½	Apr. 1961	500,000.00	95.	475,000.00
Consolidation Coal Co. Secured Gold Notes (Certificate of Deposit).....	5	July 1935	500,000.00	100.	500,000.00
The Delaware & Hudson Co. Fifteen-Year Gold.....	5½	May 1937	178,000.00	105.380623	187,577.51
Denver & Rio Grande R.R. First Consolidated Mortgage Gold.....	4	Jan. 1936	810,000.00	96.4238456	781,033.15
Denver & Rio Grande Western R.R. General Mortgage (Stamped).....	5	Aug. 1955	574,000.00	59.	338,660.00
Edmonton Public School District No. 7 of the Province of Alberta, Debenture.....	5	Apr. 15, 1953	350,000.00	81.	283,500.00

TREASURER'S REPORT

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EXHIBIT K—Continued

NAME	INTEREST RATE PER CENT	DATE OF MATURITY	AMOUNT	FOUNDATION'S LEDGER VALUE PER CENT	FOUNDATION'S TOTAL LEDGER VALUE
Erie R.R. General Mortgage Convertible Gold Series "B".....	4	Apr. 1953	\$1,065,000.00	74.717586	\$795,742.30
Great Northern Ry. General Mortgage Gold Series "A".....	7	July 1936	1,095,000.00	110.910052	1,214,465.07
Houston Belt & Terminal Ry. First Mortgage Sinking Fund Gold.....	5	July 1937	5,000.00	100.5	5,025.00
Illinois Central R.R. Equipment Series "M"	4½	\$80,000 due May 1 each year, 1936-41	480,000.00	98.5	472,800.00
Illinois Central R.R. Fifteen-Year Secured Gold.....	6½	July 1936	89,000.00	108.8055	96,836.89
Illinois Central R.R. Refunding Mortgage Gold.....	4	Nov. 1955	1,233,000.00	82.45985	1,016,730.00
Illinois Central R.R. & Chicago, St. Louis, New Orleans R.R. Joint First Refunding Gold Series "A".....	5	Dec. 1963	1,000,000.00	90.	900,000.00
Imperial Chinese Government Hu Kuang Rys. Sinking Fund Loan of 1911.....	5	June 15, 1951	£189,000.00	34.	321,300.00
Interborough Rapid Transit Co. First & Refunding Mortgage Gold (Stamped) (Certificates of Deposit).....	5	Jan. 1966	\$1,750,000.00	96.85713	1,695,000.00
Kansas City, Fort Scott, & Memphis Ry. Refunding Mortgage Gold.....	4	Oct. 1936	274,000.00	95.755708	262,370.64
Kansas City Southern Ry. Refunding & Improvement Mortgage Gold.....	5	Apr. 1950	550,000.00	84.	462,000.00

Kansas City-Terminal Ry. First Mortgage Gold	4	Jan. 1960	\$500,000.00	75.	\$375,000.00
The Laclede Gas Light Co. Refunding & Extension Mortgage Gold	5	Apr. 1939	200,000.00	102.3797	204,759.41
Lake Erie & Western R.R. Second Mortgage Gold	5	July 1941	100,000.00	100.	100,000.00
Lake Shore & Michigan Southern Ry. First Mortgage Gold	3½	June 1997	926,000.00	87.	805,620.00
Louisville & Nashville-Southern Ry. Monon Collateral Joint Fifty-Year Gold	4	July 1952	775,000.00	72.	558,000.00
Mexico, Republic of, Consolidated External Loan, Series "C" (Assenting bonds)	5	June 1945	354,000.00	34.	120,360.00
Class "A" Certificates for interest in arrears.			150,228.75	6.	9,013.73
Middle West Utilities Co. Serial Convertible Gold Notes (Certificates of Deposit)	5	June 1932	2,132,000.00	100.113539	2,134,420.66
Missouri-Kansas-Texas R.R. Prior Lien Gold Series "A"	5	Jan. 1962	331,250.00	78.5	260,031.25
Missouri-Kansas-Texas R.R. Prior Lien Gold Series "B"	4	Jan. 1962	331,250.00	64.5	213,656.25
Morris & Essex R.R. First Refunding Mortgage Gold	3½	Dec. 2000	175,000.00	82.75	144,812.50
Mutual Fuel Gas Co. First Mortgage Gold	5	Nov. 1947	250,000.00	100.	250,000.00
National Rys. of Mexico Prior Lien Fifty-Year Sinking Fund (Assenting Bonds)	4½	July 1957	350,000.00	13.	45,500.00
Secured 6% Notes for coupon due January 1, 1914		Jan. 1933	1,125.00	59.	663.75
National Rys. of Mexico Certificates Series "A" Interest in arrears			47,857.50	5.50	2,632.16
National Rys. of Mexico Certificates Series "B" Interest in arrears			94,500.00	.50	472.50

TREASURER'S REPORT

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EXHIBIT K—Continued

NAME	INTEREST RATE PER CENT	DATE OF MATURITY	AMOUNT	FOUNDATION'S LEDGER VALUE PER CENT	FOUNDATION'S TOTAL LEDGER VALUE
New Orleans, Texas, & Mexico Ry. Non-Cumulative Income Gold Series "A" (Certificates of Deposit).....	5	Oct. 1935	\$75,000.00	99.05	\$74,287.52
New York Central R.R.—New York Central Lines Equipment Gold Series of 1922....	5	June 1937	29,000.00	103.3310689	29,966.01
New York Central R.R.—New York Central Lines Equipment Gold Series of 1923....	5	June 1937	14,000.00	103.4270714	14,479.79
New York Central R.R. Equipment Gold of 1930.....	4½	May 15, 1936	50,000.00	100.835	50,417.50
New York Central R.R. Equipment Gold of 1930.....	4½	May 15, 1937	125,000.00	100.988664	126,235.83
New York Central R.R. Co. Ten-Year Convertible Secured.....	6	May 10, 1944	631,600.00	118.75	750,025.00
New York Connecting R.R. First Mortgage Gold Series "A".....	4½	Aug. 1953	500,000.00	95.69073	478,453.65
New York, Lake Erie, & Western Dock & Improvement Co. First Extended Gold..	5	July 1943	400,000.00	90.	360,000.00
Northern Pacific Ry. Refunding & Improvement Mortgage Gold Series "A".....	4½	July 2047	1,390,000.00	85.04676	1,182,150.00
Northwestern Elevated R.R. First Mortgage Gold.....	5	Sept. 1941	500,000.00	70.	350,000.00
The Pacific Telephone & Telegraph Co. First & Collateral Mortgage Gold.....	5	Jan. 2, 1937	500,000.00	89.5	447,500.00
Pennsylvania R.R. General Equipment Trust Certificates Series "D".....	4½	\$30,000 due May 15 each year, 1936-41	180,000.00	98.5	177,300.00

Pennsylvania R.R. General Mortgage Gold Series "A".....	4½	June 1965	\$1,500,000.00	98.25	\$1,473,750.00
Philadelphia & Reading Coal & Iron Co. Refunding Mortgage Sinking Fund Gold.	5	Jan. 1973	167,000.00	94.252347	157,401.42
Pittsburgh, Cincinnati, Chicago, & St. Louis Ry. Consolidated Mortgage Gold Series "I".....	4½	Aug. 1963	500,000.00	103.	515,000.0
Public Service Corporation of New Jersey Perpetual Interest Bearing Certificates...	6		550,000.00	84.	462,000.00
Raleigh & Gaston R.R. First Mortgage Gold Fifty-Year (Certificates of Deposit).....	5	Jan. 1947	250,000.00	95.	237,500.00
Reading Co. Equipment Trust Gold Series "M".....	4½	Nov. 1937	100,000.00	102.10579	102,105.79
Reading Co. General & Refunding Mortgage Gold Series "A".....	4½	Jan. 1997	333,000.00	94.25	313,852.50
Rock Island, Arkansas, & Louisiana R.R. First Mortgage Gold.....	4½	Mar. 1934	613,000.00	100.279368	614,712.53
St. Louis-San Francisco Ry. Equipment Gold Series "CC".....	4	\$50,000 due May 15 each year, 1935-43	450,000.00	91.859998	413,369.99
St. Louis-San Francisco Ry. Prior Lien Gold Series "A".....	4	July 1950	1,500,000.00	72.75	1,091,250.00
St. Louis-San Francisco Ry. Consolidated Mortgage Gold Series "A".....	4½	Mar. 1978	2,500,000.00	14.	350,000.00
St. Louis Southwestern Ry. General & Refunding Mortgage Gold Series "A".....	5	July 1990	1,918,500.00	66.792749	1,281,418.80
Seaboard Air Line Ry. First & Consolidated Mortgage Gold Series "A".....	6	Sept. 1945	227,500.00	40.	91,000.00
Southern Pacific Co. Equipment Gold Series "I".....	4½	\$100,000 due June 1 each year, 1936-41	600,000.00	98.5	591,000.00
Southern Pacific Co.-Central Pacific Stock Collateral Gold.....	4	Aug. 1949	100,000.00	76.	76,000.00

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EXHIBIT K—Continued

NAME	INTEREST RATE PER CENT	DATE OF MATURITY	AMOUNT	FOUNDATION'S LEDGER VALUE PER CENT	FOUNDATION'S TOTAL LEDGER VALUE
Southern Pacific R.R. First Refunding Mortgage Gold.....	4	Jan. 1955	\$100,000.00	86.	\$86,000.00
Standard Oil Co. (New Jersey) Serial Debenture Series "A".....	3½	Feb. 1939	3,400,000.00	100.	3,400,000.00
Standard Oil Co. (New Jersey) Serial Debenture Series "B".....	3½	Feb. 1940	3,400,000.00	100.	3,400,000.00
Standard Oil Co. (New Jersey) Serial Debenture Series "C".....	3½	Feb. 1941	3,400,000.00	100.	3,400,000.00
Tennessee Coal, Iron, & R.R. Co. General Mortgage.....	5	July 1951	400,000.00	92.	368,000.00
United Electric Co. of New Jersey First Mortgage Gold.....	4	June 1949	500,000.00	72.	360,000.00
United States of America Treasury Notes, Series "B" dated June 15, 1933.....	2½	June 15, 1938	7,000,000.00	100.986272	7,069,039.06
United States of America Treasury Notes, Series "D" dated Sept. 15, 1934.....	2½	Sept. 15, 1938	1,305,000.00	100.	1,305,000.00
United States Rubber Co. First & Refunding Mortgage Gold Series "A".....	5	Jan. 1947	3,820,000.00	85.	3,247,000.00
Wabash R.R. Second Mortgage Gold.....	5	Feb. 1939	120,000.00	97.8	117,360.00
Washington Ry. & Electric Co. Consolidated Mortgage Gold.....	4	Dec. 1951	450,000.00	83.5	375,750.00
Western Maryland R.R. First Mortgage Gold.....	4	Oct. 1952	3,764,000.00	59.	2,220,760.00
Western Pacific R.R. First Mortgage Gold Series "A" (Assenting).....	5	Mar. 1946	200,800.00	83.	166,664.00
TOTAL BONDS.....					\$66,504,577.90

STOCKS

NAME	NUMBER OF SHARES	FOUNDATION'S LEDGER VALUE PER SHARE	FOUNDATION'S TOTAL LEDGER VALUE
Atchison, Topeka, & Santa Fe Ry. 5% Non-Cumulative Preferred.....	5,000	\$98.25	\$491,250.00
Atchison, Topeka, & Santa Fe Ry. Common.....	21,944	93.18882	2,044,935.53
Atlanta Birmingham & Coast R.R. 5% Guaranteed Cumulative Preferred	4,062	94.	381,828.00
The Buckeye Pipe Line Co. Capital (Par value \$50).....	49,693	79.277299	3,939,526.82
Central United Co. Capital (No par value).....	8,104		0
Central United National Bank of Cleveland Common (Par value \$20)...	8,104	33.613909	272,407.12
Chehalis & Pacific Land Co. Capital.....	220		1.00
Chicago City & Connecting Rys. Participation Certificates, Preferred (Certificates of Deposit) (No par value).....	17,530		1.00
Chicago City & Connecting Rys. Participation Certificates, Common (No par value).....	10,518		1.00
Chicago & Eastern Illinois Ry. 6% Cumulative Preferred.....	3,000	5.	15,000.00
Cleveland Arcade Co. Capital.....	2,500	98.62222	246,555.56
Cleveland Trust Co. Capital.....	638	192.2282	122,641.62
Colorado & Southern Ry. 4% First Non-Cumulative Preferred.....	4,800	54.	259,200.00
Consolidated Gas Co. of New York \$5. Cumulative Preferred (No par value).....	13,333	91.75	1,223,302.76
Consolidation Coal Co. 7% Cumulative Preferred (C/D).....	5,875	12.	70,500.00
Consolidation Coal Co. Common (C/D).....	23,500		0
Continental Oil Co. (Delaware) Capital (Par value \$5).....	60,627	11.46601	695,149.77
Denver & Rio Grande Western R.R. 6% Cumulative Preferred.....	3,280	5.	16,400.00
Eureka Pipe Line Co. Capital (Par value \$50).....	12,357	54.30	670,985.10
Illinois Central R.R. 6% Non-Cumulative Preferred "A".....	2,857	15.50	44,283.50

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EXHIBIT K—Continued
STOCKS

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THE ROCKEFELLER FOUNDATION

NAME	NUMBER OF SHARES	FOUNDATION'S LEDGER VALUE PER SHARE	FOUNDATION'S TOTAL LEDGER VALUE
Illinois Central R.R. Common.....	4,070	\$9.625	\$39,173.75
Indiana Pipe Line Co. Capital (Par value \$10).....	74,535	12.78195	952,702.94
International Harvester Co. 7% Cumulative Preferred.....	45,721	115.	5,257,915.00
Interstate Natural Gas Co. Inc. Capital (No par value).....	33,763	14.95845	505,042.25
Kanawha & Hocking Coal & Coke Co. 7% Cumulative Preferred.....	202	20.	4,040.00
Kanawha & Hocking Coal & Coke Co. Common.....	668	4.	2,672.00
Manhattan Ry. Capital (Modified Guarantee).....	10,000	60.	600,000.00
Mission Corporation, Common (No par value).....	57,440 ⁺	9.5	545,682.53
Missouri-Kansas-Texas R.R. 7% Cumulative Preferred, Series "A".....	10,499	41.98228	440,772.00
National Fuel Gas Co. Capital (No par value).....	847,060	7.75	6,564,715.00
National Transit Co. Capital (Par value \$12.50).....	126,481	21.50	2,719,341.50
New York Central R.R. Capital.....	52,635	16.875	888,215.78
New York Transit Co. Capital (Par value \$5).....	24,784	11.	272,624.00
Northern Pipe Line Co. Capital (Par value \$10).....	27,000	8.3333	225,000.00
The Ohio Oil Co. Non-Voting Cumulative 6% Preferred.....	15,000	103.5	1,552,500.00
The Ohio Oil Co. Common (No par value).....	94,684	35.375	3,349,446.50
Pere Marquette Ry. Cumulative 5% Preferred.....	5,740	49.6600627	285,048.76
Provident Loan Society of New York 6% Certificates.....	\$266,000	100%	266,000.00
Seaboard Air Line Ry. Common (No par value).....	6,825	\$.50	3,412.50
Southern Pipe Line Co. Capital (Par value \$10).....	24,845	6.25	155,281.25
South West Pennsylvania Pipe Lines, Capital (Par value \$50)....	8,000	62.	496,000.00
Standard Oil Co. (California) Capital (No par value).....	60,967	17.25	1,051,680.75
Standard Oil Co. of Indiana, Capital (Par value \$25).....	691,140	28.90	19,973,946.00
Standard Oil Co. (N.J.) Capital (Par value \$25).....	1,077,005	34.319735	36,962,526.27

The Standard Oil Co. (Ohio) Cumulative 5% Preferred.....	15,000	\$101.	\$1,515,000.00
The Standard Oil Co. (Ohio) Common (Par value \$25).....	135,648	25.50	3,459,024.00
Standard Oil Export Corporation (Delaware) Cumulative 5% Non- Voting Guaranteed Preferred.....	80,398	99.	7,959,402.00
Tilden Iron Mining Co. Capital.....	667½	27.350258	18,256.29
Underwood Elliott Fisher Co. 7% Cumulative Preferred.....	2,300	110.	253,000.00
Union Tank Car Co. Capital (No par value).....	240,000	6.692033	1,606,087.97
Western Pacific R.R. Corporation 6% Preferred.....	28,609	30.	858,270.00
Wilson Realty Co. Capital.....	591		1.00
TOTAL STOCKS.....			\$109,276,748.82

SUMMARY

Bonds.....	\$66,504,577.90
Stocks.....	109,276,748.82
TOTAL LEDGER VALUE OF INVESTMENTS.....	<u>\$175,781,326.72</u>

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