

The  
Rockefeller Foundation  
Annual Report

1933

THE ROCKEFELLER  
FOUNDATION

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1933

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DAVID H. STEVENS

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LEPPERTS M. DASHIELL

*Comptroller*  
GEORGE J. BEAL

*Counsel*  
THOMAS M. DEBEVOISE

<sup>1</sup> Died March 14, 1934.

## DR. NELSON CARYL DAVIS

Dr. Nelson Caryl Davis, member of the field staff of The Rockefeller Foundation for eleven years, died suddenly on October 20, 1933, at Bahia, Brazil, where he was in charge of the Foundation's yellow fever laboratory.

Dr. Davis was born on August 26, 1892, in Osceola, Nebraska. He received the degree of Doctor of Medicine from the University of California in 1921. In May, 1922, he became a regular member of the staff of the International Health Board of The Rockefeller Foundation. He began his field service in Brazil with hookworm control and related studies. Next he was assigned to malaria work in Argentina. His studies in hookworm and malaria resulted in several publications of value.

In 1927 Dr. Davis was granted study leave, and he spent a year in the School of Hygiene and Public Health of the Johns Hopkins University. After a brief supplementary period of study in 1931 he received the degree of Doctor of Public Health. In 1928, at the end of his study leave, he undertook the establishment of a laboratory at Bahia, Brazil, to carry on yellow fever research and also to make laboratory studies for the extensive yellow fever control service maintained jointly by the Government of Brazil and The Rockefeller Foundation. He rapidly became one of the principal contributors to new knowledge of yellow fever.

Dr. Davis was the first to verify *Anopheles pseudopunctipennis* as the chief malaria vector in the Argentine, as well as to discover *A. darlingi* in the Amazon region, to demonstrate that this mosquito is one of the most formidable malaria vectors indigenous to Brazil, and to show that the recent African invader of Brazil, *A. gambiae*, possesses a capacity for transmitting malaria in Brazil possibly exceeding that known for the species in its native home. His contributions on the biology of *Aedes aegypti* and the larvae of the Brazilian species of Mansonia, as well as those dealing with the transmission of yellow fever by mosquitoes other than *Aedes aegypti* and a diversity of other arthropods are likewise of outstanding importance.

Dr. Davis was in the prime of life, with an expectancy of decades of productive work, when he died. Through his death The Rockefeller Foundation and the scientific world have been deprived of a most productive worker and his family and friends have suffered a cruel loss. But in looking back one cannot but feel that he is to be envied for the satisfaction which must have come with the successes of his brief but rich life.



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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, 1933, to December 31, 1933, 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.

The period has been marked by economic, social, and political stress in many parts of the world, giving rise to pressing problems of national and international scope. A foundation dedicated to the welfare of mankind, and which has conceived its function in the broad as aid in the process of the rationalization of life, can neither remain indifferent to pressing current problems nor relinquish the support of the fundamentals on which, in the long run, the control of man's destiny depends. In its work for the year The Rockefeller Foundation has been conscious of both types of needs.

While the Foundation has continued during the year its activity in furthering the advance of

knowledge in the fields of public health, medical science, natural science, social science, and the humanities, its work in these fields has been vitally changed in scope through selection, for intensive work, of those subfields which contribute more directly to the general problem of human behavior, with the aim of control through understanding.

In the fields of medical and natural science the major emphasis has been placed on the problem of mental health and on the development of those sciences whose advance is imperatively demanded to form the substantial scientific basis for the rapidly evolving modern science of man. In the social sciences the problems of economic structure and process, international relations, and community organization and planning have been considered of principal importance. The emphasis in the humanities has been on the encouragement of international cultural understanding and the preservation and interpretation of American culture. In the International Health Division, there has been increased attention to studies of disease in its environment, with closely related laboratory investigations.

Early in 1933 a fund was set aside for projects having to do with the present national and world situation. The projects which have been supported fall under two general headings: studies

providing for concurrent appraisal and studies furnishing a factual basis for improved planning of important sections of the recovery, relief, and reconstruction program; and undertakings involving the collaboration of private agencies in the prosecution of the emergency programs of the federal, state, and local governments.

Another emergency requiring special funds was the displacement of eminent scholars in Europe for political reasons and the consequent interruption of important scientific work. Dealing directly with universities in Europe and America which wished to add these men to their staffs, the Foundation has contributed toward their salaries. The situation was an emergency; the solution of the problem is as yet on a temporary basis.

The following separate reports of the directors for the different fields present the work for the year in detail.

Respectfully yours,  
MAX MASON  
President



## **REPORT OF THE SECRETARY**

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## SECRETARY'S REPORT

The members and trustees of The Rockefeller Foundation during 1933 were:

John D. Rockefeller, Jr., <i>Chairman</i>	
James R. Angell	John D. Rockefeller, 3rd
Trevor Arnett	Walter W. Stewart
John W. Davis	Harold H. Swift
David L. Edsall	Augustus Trowbridge
Raymond B. Fosdick	George H. Whipple
Jerome D. Greene	William Allen White
Ernest M. Hopkins	Ray Lyman Wilbur
Vernon Kellogg	Arthur Woods
Max Mason	Owen D. Young

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

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

The officers of the Foundation during the year 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>
Frederick F. Russell, M.D.	<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>

The following served as scientific directors of the International Health Division of the Foundation during 1933:

Edwin O. Jordan, Sc.D., *Chairman*  
Alphonse R. Dochez, M.D.           Waller S. Leathers, M.D.  
John G. FitzGerald, M.D.           Wilson G. Smillie, M.D.  
  Lewis R. Thompson, M.D.  
Frederick F. Russell, M.D., *Director of the Division, Secretary*

### Meetings

Regular meetings of The Rockefeller Foundation were held on April 12 and December 13, 1933. Seven meetings of the Executive Committee were held during the year to execute programs within general policies approved by the trustees.

### Financial Summary

The following is a summary of receipts and disbursements of the Foundation in 1933. 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 1933, remainders of which are payable during succeeding years.

**Statement of Funds Available and Disbursements  
During the Year 1933**

**FUNDS AVAILABLE**

Balance available December 31, 1932	
To meet appropriations, pledges, and authorizations.....	\$52,798,216.01
Available for appropriation.....	2,930,176.07
	<hr/>
	855,728,392.08
Authorizations allowed to lapse, re- verting to Principal Fund.....	6,064,800.00
	<hr/>
	849,663,592.08
Income and refunds received during the year 1933.....	8,257,418.53
	<hr/>
	\$57,921,010.61

**DISBURSEMENTS**

Universities and other educational institutions	
Education	
Medical sciences.....	\$315,103.43
Public health.....	4,647.19
Nursing.....	449,990.72
Social sciences.....	198,482.93
Natural sciences.....	117,678.31
General.....	2,500.00
Departmental development.....	829,118.50
Research programs.....	2,235,670.87
Land and buildings.....	1,136,704.93
Research institutions and organiza- tions	
Education	
Medical sciences.....	\$1,431.15
Social sciences.....	16,789.50
General.....	10,200.00
General development.....	538,287.05
Research programs.....	1,043,369.00
Land and buildings.....	7,162.06
Special committees and commissions	132,370.64
Fellowships and grants in aid.....	1,519,661.67
Studies of pressing economic prob- lems.....	120,568.50
Miscellaneous.....	1,268,040.22
Public health.....	3,286,063.01
General.....	699,492.04
Administration.....	820,490.33
	<hr/>
	\$14,753,822.05

**BALANCE**

To meet appropriations, pledges, and authorizations.....	\$40,160,304.39
Available for appropriation.....	3,006,884.17

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**Summary of Expenditures in 1933****UNIVERSITIES AND OTHER EDUCATIONAL INSTITUTIONS****Medical Science Education**

Albany Medical College, New York .....	\$20,000.00
Brussels, Belgium. Department of Public Welfare.	
Maintenance of St. Pierre Hospital .....	10,000.00
China Medical Board, Inc., New York City.....	158,576.95
Chulalongkorn University, Bangkok, Siam.....	22,786.34
National Central University Medical School, Shanghai, China.....	9,059.12
Peiping Union Medical College, China.....	12,544.72
Shantung Christian University, Tainan, China....	15,225.00
University of Lyon, France.....	29,411.30
University of Montreal, Canada.....	37,500.00

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\$315,103.43

**Public Health Education**

Dalhousie University, Halifax, Nova Scotia.....	\$4,647.19
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**Nursing Education**

St. Luke's International Medical Center, Tokyo, Japan.....	400,000.00
University of Lyon, France.....	10,000.00
University of Toronto, Canada.....	16,154.69
Vanderbilt University, Nashville, Tennessee.....	17,500.04
Miscellaneous.....	6,335.99

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\$449,990.72

**Social Science Education**

American University of Beirut, Syria.....	\$10,000.00
German School of Politics, Berlin.....	15,000.00
National Catholic School of Social Service, Wash- ington, D. C.....	12,500.00
New York School of Social Work, New York City..	45,000.00
Tulane University of Louisiana, New Orleans....	12,000.00
University of Chicago, Illinois.....	47,482.93
University of Vienna, Austria.....	4,000.00
Western Reserve University, Cleveland, Ohio....	27,500.00
Yenching University, Peiping, China.....	25,000.00

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\$198,482.93

## SECRETARY'S REPORT

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## Natural Science Education

Fukien Christian University, Foochow, China....	\$7,500.00
Lingnan University, Canton, China.....	10,000.00
Yenching University, Peiping, China.....	87,916.75
Miscellaneous.....	12,261.56
	<hr/>
	\$117,678.31

## General Education

New Education Fellowship, London, England....	\$2,500.00
	<hr/>

## Departmental Development

American University of Beirut, Syria.....	\$50,000.08
Harvard University, Cambridge, Massachusetts...	19,922.78
Keio Gijuku University, Tokyo, Japan.....	10,744.55
London School of Economics and Political Science, England.....	37,912.08
McGill University, Montreal, Canada.....	15,256.48
Nankai University, Tientsin, China.....	9,417.23
Syracuse University, New York.....	15,000.00
Tohoku Imperial University, Sendai, Japan.....	10,766.28
University of California, Berkeley.....	17,500.00
University of Chicago, Illinois.....	415,864.85
University of Cincinnati, Ohio.....	17,500.00
University of Leipzig, Germany.....	10,819.74
University of Paris, France.....	5,471.30
University of Stockholm, Sweden.....	5,000.00
University of Szeged, Hungary.....	46,819.32
University of Washington, Seattle.....	4,715.70
Yale University, New Haven, Connecticut.....	133,520.30
Miscellaneous.....	2,887.81
	<hr/>
	\$829,118.50

## Research Programs

Brown University, Providence, Rhode Island.....	\$11,988.76
California Institute of Technology, Pasadena....	20,000.00
Columbia University, New York City.....	147,869.17
Cornell University Medical College, New York City	24,581.82
Harvard University, Cambridge, Massachusetts..	234,930.23
Harvard University and Radcliffe College, Cam- bridge, Massachusetts.....	48,125.31
Iowa State College of Agriculture and Mechanic Arts, Ames.....	8,750.00
Johns Hopkins University, Baltimore, Maryland..	101,645.45
Leland Stanford, Jr., University, California.....	51,550.00
London School of Economics and Political Science, England.....	39,094.65
Massachusetts Institute of Technology, Cambridge	51,000.00

## THE ROCKEFELLER FOUNDATION

McGill University, Montreal, Canada.....	\$39,811.74
Ohio Wesleyan University, Delaware, Ohio.....	10,513.00
Peiping Union Medical College, China.....	11,152.42
Tulane University of Louisiana, New Orleans....	11,250.00
University of California, Berkeley.....	5,000.00
University of Chicago, Illinois.....	597,316.55
University of Hawaii, Honolulu.....	23,333.32
University of London, England.....	11,685.00
University of Michigan, Ann Arbor.....	17,500.00
University of Minnesota, Minneapolis.....	110,000.00
University of North Carolina, Chapel Hill.....	35,000.00
University of Oregon, Eugene.....	6,500.00
University of Oslo, Norway.....	7,775.00
University of Paris, France.....	11,417.97
University of Pennsylvania, Philadelphia.....	80,829.12
University of Rochester, New York.....	72,574.70
University of Stockholm, Sweden.....	13,667.25
University of Texas, Austin.....	12,500.00
University of Toronto, Canada.....	7,889.31
University of Virginia, Charlottesville.....	17,500.04
University of Warsaw, Poland.....	6,703.90
Vanderbilt University, Nashville, Tennessee.....	50,000.00
Washington University, St. Louis, Missouri.....	48,350.00
Yale University, New Haven, Connecticut.....	264,750.00
Miscellaneous.....	23,116.16
	<hr/>
	\$2,235,670.87

## Land and Buildings

Chulalongkorn University, Bangkok, Siam.....	\$55,293.89
London School of Economics and Political Science, England.....	241,351.99
McGill University, Montreal, Canada.....	103,586.35
State Institute of Public Health, Prague, Czechoslovakia.....	96,005.01
University College, London, England.....	9,212.94
University of Breslau, Germany.....	50,000.00
University of Geneva, Switzerland.....	24,409.12
University of Göttingen, Germany.....	39,164.64
University of Lyon, France.....	100,682.20
University of Oslo, Norway.....	56,873.55
University of Oxford, England.....	104,928.09
University of Stockholm, Sweden.....	34,916.65
University of Sydney, Australia.....	220,280.50
	<hr/>
	\$1,136,704.93

## SECRETARY'S REPORT

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## RESEARCH INSTITUTIONS AND ORGANIZATIONS

Medical Science Education	
Chinese Medical Association, Shanghai .....	\$1,431.15
Social Science Education	
Laboratory of Anthropology, Santa Fe, New Mexico.....	\$9,459.90
Social Science Research Council, New York City...	7,329.60
	<hr/>
General Education	\$16,789.50
Canadian National Committee for Mental Hygiene, Toronto.....	\$10,200.00
	<hr/>
General Development	
American Schools of Oriental Research, Baghdad and Jerusalem.....	\$48,769.58
Bermuda Biological Station for Research, Inc.....	6,000.00
Brookings Institution, Inc., Washington, D. C.....	75,000.00
Canton of Geneva, Switzerland. Postgraduate Institute of International Studies.....	63,611.75
Economic Foundation, New York City.....	25,000.00
Institute for Comparative Research in Human Culture, Oslo, Norway.....	10,008.11
Institute of Economics and History, Copenhagen, Denmark.....	6,000.00
Institute of Pacific Relations, Honolulu, Hawaii...	30,000.00
International Institute of African Languages and Cultures, London, England.....	28,894.45
Long Island Biological Association, Cold Spring Harbor, New York.....	20,000.00
National Bureau of Economic Research, New York City.....	69,710.00
Social Science Research Council, New York City...	50,000.04
Woods Hole Oceanographic Institution, Massachusetts.....	90,000.00
Zoological Station of Naples, Italy.....	7,000.00
Miscellaneous.....	8,293.12
	<hr/>
Research Programs	\$538,287.05
American Council of Learned Societies, Washington, D. C.....	\$141,805.98
Australian National Research Council, Sydney....	16,577.22
Austrian Institute for Trade Cycle Research, Vienna.....	7,917.66
Behavior Research Fund, Chicago, Illinois.....	12,291.71
Bernice P. Bishop Museum, Honolulu, Hawaii....	6,500.00

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Canadian National Committee for Mental Hygiene, Toronto.....	\$28,173.65
Community Council of Philadelphia, Pennsylvania.....	7,500.00
Council on Foreign Relations, New York City.....	25,000.00
Dutch Economic Institute, Rotterdam, Netherlands.....	5,000.00
Economic Foundation, New York City.....	55,388.83
Foreign Policy Association, New York City.....	25,000.00
Industrial Relations Counselors, Inc., New York City .....	14,000.00
Institute of International Economics and Mar- itime Trade, Kiel, Germany.....	26,000.00
Institute for Psychiatric Research, Munich, Ger- many.....	12,082.82
Institute of Social and Political Sciences, Heidel- berg University, Germany.....	12,096.10
Institute of Pacific Relations, Honolulu, Hawaii....	50,000.00
Kaiser Wilhelm Institute for Brain Research, Ber- lin-Buch, Germany.....	11,098.00
Massachusetts Department of Mental Diseases, Boston.....	7,705.03
Massachusetts Society for Mental Hygiene, Boston.....	5,693.30
Medical Research Council, London, England.....	9,929.87
National Institute of Industrial Psychology, Lon- don, England.....	8,070.00
National Research Council, Washington, D. C.....	79,954.33
New Zealand Department of Scientific and Indus- trial Research (Apia Observatory, Western Samoa)	5,000.00
Notgemeinschaft der Deutschen Wissenschaft, Berlin, Germany.....	53,129.01
Orthological Institute, London, England.....	14,607.80
Royal Institute of International Affairs, London ..	30,000.00
Royal Institution of Great Britain, London .....	72,803.57
Rumanian Institute of Social Science, Bucharest...	7,500.00
Social Science Research Council, New York City...	175,774.09
Trudeau Foundation, Trudeau, New York.....	10,000.01
Welfare Council of New York City.....	85,000.00
Miscellaneous.....	21,770.02
	<hr/>
	\$1,043,369.00

Land and Buildings

Marine Biological Association of the United King- dom, Plymouth, England.....	\$7,162.06
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SPECIAL COMMITTEES AND COMMISSIONS

International Commission for the Polar Year 1932- 33, Copenhagen, Denmark.....	\$13,489.00
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## SECRETARY'S REPORT

II

National Research Council, Washington, D. C. ....	\$35,301.83
Research Committee on Social Trends, Washington, D. C. ....	33,104.10
Science Advisory Board, Washington, D. C. ....	8,000.00
Social Science Research Council, New York City....	36,828.25
Miscellaneous.....	5,647.46
	<hr/>
	\$132,370.64

## FELLOWSHIPS AND GRANTS IN AID

American Council of Learned Societies, Washington, D. C. ....	\$83,822.73
American School of Classical Studies at Athens, Greece.....	7,600.00
Fellowships administered by The Rockefeller Founda- tion.....	608,305.96
Kaiser Wilhelm Institute of Physical Chemistry and Electrical Chemistry, Berlin-Dahlem, Germany....	10,758.31
Medical Research Council, London, England.....	20,136.25
National Research Council, Washington, D. C....	369,153.09
Notgemeinschaft der Deutschen Wissenschaft, Berlin, Germany.....	12,100.22
Peiping Union Medical College, China.....	33,096.31
Research aid funds in the medical, natural, and social sciences and the humanities.....	164,887.49
Research and developmental aid in the medical and natural sciences in China.....	15,249.17
Social Science Research Council, New York City....	159,442.40
Visits of individuals and commissions.....	5,680.31
Miscellaneous.....	29,429.43
	<hr/>
	\$1,519,661.67

## STUDIES OF PRESSING ECONOMIC PROBLEMS

Appraisal and planning projects	
Columbia University, New York City.....	\$28,000.00
Brookings Institution, Inc., Washington, D. C....	40,972.63
Miscellaneous.....	8,946.83
Direct grants to operating government agencies	
Federal Emergency Relief Administration, Wash- ington, D. C. ....	13,000.00
Subventions to cooperating private agencies	
American Municipal Association, Chicago, Illinois	18,846.40
Slum Clearance Committee of New York, New York City.....	5,000.00
Administration. Special staff.....	5,802.64
	<hr/>
	\$120,568.50

## MISCELLANEOUS

Abraham Lincoln Foundation, Dresden, Germany....	\$10,000.00
American Geographical Society, New York City.....	14,000.00
American Psychological Association, Princeton, New Jersey.....	6,282.37
American School of Classical Studies at Athens, Greece.....	14,000.00
Citizens Family Welfare Committee of New York City.....	150,000.00
<i>Encyclopaedia of the Social Sciences</i> , New York City.	102,410.13
Humanistic studies in Europe.....	8,873.61
League of Nations, Geneva, Switzerland.....	81,174.50
Library of Congress, Washington, D. C.....	10,000.00
Medical literature for Russia.....	14,920.22
National Academy of Sciences, Washington, D. C..	10,500.00
National Research Council, Washington, D. C.....	102,913.09
Prussian State Library, Berlin, Germany.....	10,000.00
Social Science Research Council, New York City.....	52,467.83
Unemployment relief, New York City.....	650,000.00
<i>Virginia Historical Index</i> , Richmond .....	7,500.00
Miscellaneous.....	22,998.47

\$1,268,040.22

## PUBLIC HEALTH

Regular program of the International Health Division in state and local health work, public health education, control and investigations of specific diseases.....	\$2,464,858.16
League of Nations, Health Organization, Geneva, Switzerland.....	263,170.45
Schools and institutes of hygiene and public health Bulgaria. Sofia.....	25,312.01
Italy. Rome.....	317,927.60
Japan. Tokyo.....	108,274.99
Rumania. Cluj.....	5,674.87
Turkey. Angora.....	100,000.00
Miscellaneous.....	844.93

\$3,286,063.01

## GENERAL \*

Agricultural club work, Finland and Sweden.....	\$16,366.78
American Association of Museums, Washington, D. C.	13,572.50

\* 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.

Commission on Interracial Cooperation, Atlanta, Georgia.....	\$36,430.45
East Harlem Nursing and Health Service, New York City.....	31,875.00
Fisk University, Nashville, Tennessee.....	35,492.26
Institute of International Education, New York City	24,000.00
Jean Jacques Rousseau Institute, Geneva, Switzerland	7,000.00
Playground and Recreation Association of America, New York City.....	50,000.00
Society of the New York Hospital, New York City....	126,128.81
State University of Iowa, Iowa City.....	88,378.16
Teachers College, Columbia University, New York City.....	100,000.00
University of California, Berkeley.....	53,087.90
University of Minnesota, Minneapolis.....	71,551.25
University of Toronto, Canada.....	17,671.71
Vocational Service for Juniors, New York City.....	7,180.85
Miscellaneous.....	20,756.37
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	\$699,492.04

**ADMINISTRATION**

Maintenance of New York, European, and Shang- hai offices.....	820,490.33
Total.....	<hr/> <u>\$14,753,822.05</u>

**Funds and Property**

As of December 31, 1933

**PRINCIPAL FUND**

Balance in The Rockefeller Foundation Principal Fund as of December 31, 1932.....	\$147,522,644.31
Funds reverting to the Principal Fund	
Authorization allowed to lapse.....	64,800.00
Authorization rescinded.....	6,000,000.00
Contingent project cancelled.....	14,000.00
	<hr/>
	\$153,601,444.31

Less amount by which the proceeds of securities redeemed and exchanged during the year failed to equal their ledger valuation.....	22,658.72
	<hr/>
Balance, December 31, 1933.....	\$153,578,785.59
	<hr/>

## THE ROCKEFELLER FOUNDATION

## LAND, BUILDINGS, EQUIPMENT

In Shanghai, China

Land for medical school..... \$298,331.95

In New York

Furniture and equipment of offices..... 50,855.82

In Paris

Part interest in building occupied by the Paris  
office..... 65,901.61

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\$415,089.38

## **INTERNATIONAL HEALTH DIVISION**



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## INTERNATIONAL HEALTH DIVISION

### The Public Health Program

From the time of its establishment in 1913 The Rockefeller Foundation has engaged in public health work. At the outset it took over the work of the Rockefeller Sanitary Commission, which had been chiefly directed toward the relief and control of hookworm disease. From hookworm disease Foundation research and control activities have been extended to other diseases, such as malaria and yellow fever. There has been, however, no attempt to cover in any intensive manner the entire field of public health. A selection is made and, within the spheres selected, limited and practical programs adapted to local situations in many parts of the world are developed.

Attention to communicable diseases has led to the support of various other activities essential to the development of progressive public health programs. A particular effort has been made to further public health education. Aid has been given toward the establishment and maintenance, at strategic world centers, of postgraduate schools of hygiene and public health of university grade. The upkeep of a supply of highly trained workers in the public health field

has been aided also by a liberal provision of fellowships. An extensive fellowship program has been in operation since 1917.

The work in public health is carried out by the International Health Division, which is the only one of the Foundation's divisions which acts as an operating agency. This division, through a staff consisting of a director, associate, assistant, and field directors, and special members, stationed both at home and abroad, cooperates with government agencies throughout the world in public health demonstrations and investigations. In this way the Foundation can assist governments, which as a rule have no considerable margin of budget for studies involving experimental research. After the Foundation has completed the specific demonstration or task in hand, the government concerned takes over the work to carry it on. The fight against disease is a never ending one. It can properly be waged on a permanent basis only by authorities who have the power of taxation and law enforcement.

A private agency, such as The Rockefeller Foundation, has a unique opportunity to aid official agencies in the double task of applying the latest tested and tried measures for disease control and public welfare, and of conducting research work in field and laboratory that may lead to the discovery of even more efficacious

methods of combating disease. Research work of this type, on which the Foundation has always placed considerable stress, differs from university research in that it takes place in the field and is a study of disease, not in hospitals but in its natural environment. Foundation research differs also from government research in that it is not limited by national boundaries. The Foundation is not committed to any one country or place. It can follow a problem wherever that problem develops and thus gain experience in handling situations under a great variety of conditions.

During 1933 studies of various diseases were pursued with the aim of uncovering new knowledge relating to efficient methods of control. Throughout the year members of the staff published in the medical press a variety of articles, embodying the results of their investigations. In all, during 1933 and the early part of 1934, more than seventy-five such articles have appeared. The work described in these articles, to which specific reference is made in later sections of this report, has all been carried out either by the Foundation staff or under Foundation auspices.

By means of planned demonstrations, following carefully controlled experimental work, the Foundation attempts to maintain the high

scientific standards in the field of public health which in the end alone can be successful in disease control. By acquiring new knowledge or bringing such knowledge as has already been obtained into practice in places where it was not used before, the Foundation makes its contribution to human welfare in so far as this can be furthered by decreasing disease and increasing the span of normal life.

### Yellow Fever

The yellow fever work in which The Rockefeller Foundation has for some years been engaged took another important step forward in 1933 by the completion, in cooperation with various governments, of an extensive survey which disclosed with a considerable degree of definiteness the areas in Africa where the disease occurs. Such a survey was one of the main objects in establishing in Lagos, Nigeria, eight years ago, a field laboratory for the study of yellow fever.

Delimitation of endemic areas of yellow fever became possible only after much preliminary work in the field and laboratory, in the course of which the susceptibility of the *Macacus rhesus* monkey and the white mouse to yellow fever was demonstrated and a procedure known as the protection test was developed. A person who

has once had yellow fever does not, so far as is known, contract the disease again. The blood of such a person furnishes him protection from yellow fever for the rest of his life; and when, under suitable conditions, the serum from his blood is injected into monkeys and mice that are susceptible to the disease, it protects them also.

For the protection test, blood serum from the person under investigation is injected, together with the yellow fever virus, into healthy mice. If the mice survive, this is evidence that the person furnishing the serum has at some time in the past had yellow fever. The death of the mice indicates that the person has not had yellow fever. Thus the test is used to study the distribution of immunity to yellow fever. Such immunity corresponds to the previous distribution of the disease during the lifetime of the individuals tested. The last appearance of yellow fever in a community can be gauged by collecting blood specimens from persons of the younger age groups.

With the discovery of the susceptibility of the *Macacus rhesus* and the mouse to the virus of yellow fever has passed the need for human volunteers for experimental purposes which existed at the time of those first great successful yellow fever studies carried out in Cuba in 1900

and 1901 by Major Walter Reed, of the United States Army, and his associates. Major Reed first definitely proved that yellow fever is transmitted by a well-known mosquito, the stegomyia, and thus pointed the way to antimosquito campaigns, which are still the only key to yellow fever control.

On October 11, 1933, the Director of the International Health Division of The Rockefeller Foundation, at a special session of the American Public Health Association, held at Indianapolis, Indiana, in memory of Major Walter Reed and his associates, read a paper stressing the permanent value of Reed's work on yellow fever. The paper reviews this work, points out its fundamental importance, and surveys briefly subsequent yellow fever work down to the present time.

Russell, F. F. Permanent Value of Major Walter Reed's Work on Yellow Fever. *American Journal of Public Health*, New York, 24: 1-7 (January) 1934.

In addition to the epidemiological survey in Africa, many other kinds of yellow fever work were carried on by the Foundation in 1933. Control measures were continued in Brazil and Bolivia. Studies of different aspects of yellow fever by members of the Foundation staff were reported in the medical press. During 1933 and the early part of 1934, twenty-seven papers

on this disease were published. A brief account of these studies and of other yellow fever work follows.

#### Epidemiology of Yellow Fever

The extensive study of the epidemiology of yellow fever mentioned above, in other words the investigation as to where and in what manner the disease occurs, has brought to light some fundamental aspects of yellow fever previously unknown. Formerly the disease was considered above all a violent scourge of seaports. Even after Reed had incriminated the mosquito as the vector, and as late as 1920, the clinical and epidemiological picture of yellow fever accepted almost everywhere was a simple one.

The severe type of the disease was considered typical. It was thought to be an essentially urban malady, transmitted by a single stegomyia mosquito, *Aedes aegypti*. The key to control was believed to be the cleaning up of cities. By this method conspicuous success was obtained in banishing yellow fever from the seaports of North America, certain parts of South America, the West Indies, and the Panama Canal. But the disease did not disappear entirely, and we now know the reason why. Yellow fever may occur in the form of a mild disease native to interior populations. It has been found to be

much more widespread than is indicated by reported outbreaks. It can exist for years as a rural malady and may occur even in places where the stegomyia mosquito is not found. This means that other mosquitoes can carry it, although the stegomyia is undoubtedly the main culprit. The control of yellow fever in large coastal towns is not sufficient to cause the disease to die out within a reasonable length of time in countries where it is indigenous.

The new work has helped to clear up certain puzzling factors, namely, the failure of yellow fever to disappear from Brazil despite prolonged control campaigns in key centers; the reappearance of the disease in Colombia, in 1929, with no evidence of reimportation from infected areas; its occurrence in at least two places, one in Brazil and one in Bolivia, where the stegomyia could not be found. All these factors tend to indicate that the epidemiology of yellow fever is a complicated matter.

Since 1931 the Foundation has, with the cooperation of many governments, been carrying on careful investigation of the distribution of yellow fever, by collecting blood specimens, at random, from healthy persons who had lived all of their lives in the localities under investigation, and testing these for their power to protect mice against injections of yellow fever virus. Some

25,000 specimens from many parts of the world have been tested, 12,000 of them in the Foundation's New York laboratory, 9,000 in the Lagos, Nigeria, laboratory, and 4,000 in the Bahia, Brazil, laboratory.

Results of tests with the blood sera of inhabitants of those parts of North and Central America where yellow fever once was present are on the whole consistent with the belief that the disease disappeared at about the time of the last recorded cases. The same is true of Puerto Rico and the northern coast of Colombia. Sera from the interior of Colombia gave results which indicate a considerable number of persons with a recent history of yellow fever. The results for Brazil are not yet ready for publication, but it is known that yellow fever immunity is widespread in the country. An intensive study of an epidemic in a small Brazilian town has been published. The areas throughout the world in which evidences of recent yellow fever have been found are much larger than would have been expected from known experiences with the disease.

Because of the somewhat startling findings, the specificity of the protection test has been questioned. Control tests were made with human sera from countries believed to have been entirely free from yellow fever for generations. Among 423 specimens from such regions, three

(0.7 per cent) gave the wrong indication. These misleading results of less than 1 per cent were doubtless due to several sources of error. To all intents and purposes, however, the testing of this large number of specimens confirmed the reliability of the results being obtained in other regions.

*Studies in West Africa.*—In 1925 the Foundation established a West African Yellow Fever Commission for the purpose of cooperating with various colonial authorities in Western Africa in an epidemiological survey to determine as far as possible the distribution and limits of yellow fever in that part of the world.

During the early years of the survey great difficulty was experienced in the study of the incidence, distribution, and epidemiology of the disease by reason of the fact that although unmistakable cases were occasionally encountered among natives, the great majority of cases in these persons were so mild as to defy detection. It was suspected that extensive epidemics might be occurring without recognition. The difficulties of the survey were in part overcome when it became possible to develop a protection test, using *Macacus rhesus*.

In 1929 and 1930 protection tests in rhesus monkeys were carried out in Nigeria, Gold Coast, and Sierra Leone with interesting results.

But as these monkeys, the only test animals available at that time, were expensive and difficult to obtain in large numbers, the scope of the work was necessarily limited.

When the susceptibility of white mice to the virus of yellow fever was demonstrated and a relatively simple and practical protection test with these animals was developed, there was made possible an almost unlimited extension of the work. More intensive studies were made in Nigeria, Gold Coast, and Sierra Leone, and the survey was extended to the other colonies of West Africa, namely, Gambia, Liberia, Niger, Sudan, and Dahomey. Later the work was carried into the colonies to the south and southeast, including the French Cameroons, French Equatorial Africa, Belgian Congo, and Angola, where yellow fever had rarely been recognized. This was done in an effort to ascertain the southern coastal limits of the disease and to determine whether there was any barrier to the disease toward the east.

The results of the mouse protection tests showed that in West Africa proper, yellow fever is more prevalent than was previously supposed. Approximately 25 per cent of all sera examined gave positive results. Practically the entire area covered by the survey was shown to be infectible. The Sahara Desert, however, forms

an effective barrier against the disease on the north.

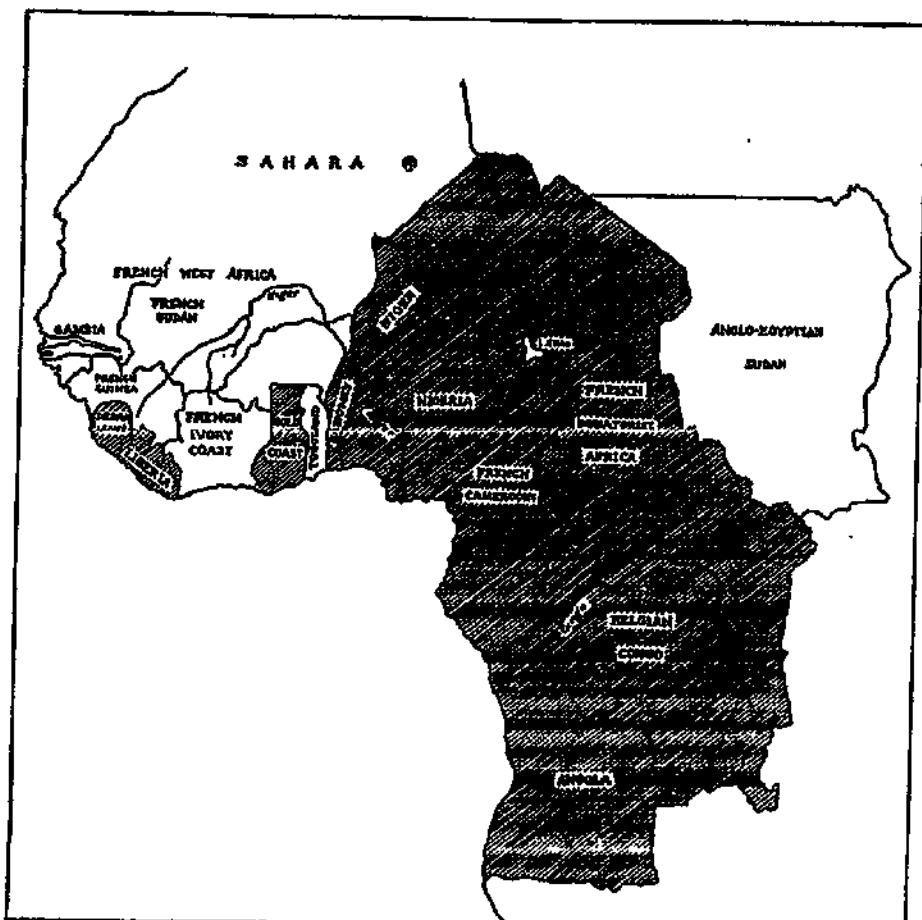
Findings confirm the opinion previously held that an endemic area of yellow fever exists in Southwestern Nigeria. It was not possible definitely to exclude endemicity in other parts of this colony, but meteorological conditions in Northern Nigeria would seem to be unfavorable to the permanent existence of the disease.

Protection tests in various age groups in cities in the endemic area of Nigeria brought out facts which are not in accord with opinions formerly held by epidemiologists of the Western Hemisphere on the basis of less exact methods of investigation. It was shown that in endemic centers yellow fever is not confined to children, but that the percentage of those who have had the disease increases gradually up to old age. Some persons escape infection throughout life.

In the colonies to the south and southeast of West Africa, except in the interior of French Equatorial Africa, percentages of positive sera were much lower than those found in the colonies of West Africa proper. This is because the conditions in the former region are relatively unfavorable to the maintenance of yellow fever infection.

In French Equatorial Africa, where yellow fever had never been reported, 18.4 per cent of

the blood specimens collected in thirty-seven towns along the coastal area and in the interior protected mice against yellow fever virus. The



Colonies of Africa in which protection tests have been carried out to determine the distribution and limits of yellow fever.

high percentages of protective sera obtained from both children and adults in the interior towns indicate that yellow fever has been widespread within recent years, as well as in the past. Apparently no barrier against the invasion of the disease toward the east exists in this region.

The findings in the coastal area of this colony show that although some yellow fever has been present there in the past, almost no cases have occurred during recent years. The practically negative findings in the southern and south-eastern portions of the Belgian Congo and throughout the whole of Angola suggest that the limits of yellow fever invasion in these directions have been reached.

*Studies in South America.*—The site chosen in Brazil for an intensive survey of some one community where the history of yellow fever was known, was Cambucy in the State of Rio de Janeiro. Results indicate that the distribution of immunity in this town bears little relationship to the recognition of classical cases of yellow fever. It does, however, correspond to the distribution of recent cases of so-called "grippe without respiratory symptoms." Through the protection test it was shown that the disease masquerading as grippe had probably been yellow fever.

The protection test as employed both in Africa and in Brazil enables us to find out where mild cases of yellow fever have been occurring whose discovery in the field under present conditions would be practically impossible. In Brazil, however, there has been developed a widely used method of discovering fatal cases of

the disease through the microscopic examination of liver tissue from persons who have died after brief febrile illnesses. A system of routine postmortem removal of liver tissue from such persons has been established. The protection test gives us a picture of the past exposure of a community to the virus of yellow fever. The liver examinations show where, if at any place, people are dying of yellow fever.

Routine collection of liver specimens was begun in April 1930, in Natal, Rio Grande do Norte, and was soon extended to both North and South Brazil. It was much facilitated through an instrument known as a viscerotome. The routine postmortem examination of liver tissue presents a definite and easily interpreted method of investigating conditions under which yellow fever occurs in endemic areas, and it permits immediate action to be taken to prevent further dissemination of the virus. It also furnishes information with regard to liver injury resulting from diseases other than yellow fever, such as malaria pigmentation, and lesions produced by *Schistosoma mansoni*.

A paper was published on the microscopical examination at the Bahia laboratory, between May 1, 1930, and June 30, 1933, of 29,593 liver specimens from persons dying in Central and Northern Brazil. Of these specimens fifty-four

furnished a basis for the pathological diagnosis of yellow fever, forty-three of this number being from places where yellow fever was not known to be present. In this way information was obtained concerning typical cases of yellow fever in otherwise silent endemic foci. Evidence obtained concerning the absence of yellow fever from many centers and towns where antimosquito measures have been applied is, of course, equally valuable.

In September 1932 a representative of the Yellow Fever Service in Brazil visited San Ramón, Bolivia, an isolated village of 125 residents, where suspected cases of yellow fever had occurred during the summer. In a thorough survey of the village no *Aedes aegypti* mosquitoes were found. Examination of the first liver specimen taken in the community (May 1933) resulted in a diagnosis of yellow fever. Positive confirmation was thus obtained of the presence of yellow fever in this village, in the absence of *Aedes aegypti*, eleven months after the occurrence of the first suspicious case of the disease. This is the second clear instance of yellow fever apparently being carried by some mosquito other than the stegomyia. Information on a similar occurrence in Espírito Santo, Brazil, was given in the Foundation's annual report of last year.

- Sawyer, W. A. L'Enquête sur l'immunité vis-à-vis de la Fièvre jaune, au moyen de l'Épreuve de Protection de la Souris. *Bulletin mensuel de l'Office international d'Hygiène publique*, Paris, 26: 1057-1060 (June) 1934.
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- Mahaffy, A. F., Wray Lloyd, and H. A. Penna. Two Years' Experience with the Intraperitoneal Protection Test in Mice in Epidemiological Studies of Yellow Fever. *The American Journal of Hygiene*, Baltimore, 18: 618-628 (November) 1933.
- Beeuwkes, Henry, and A. F. Mahaffy. The Past Incidence and Distribution of Yellow Fever in West Africa as Indicated by Protection Test Surveys. *Transactions of the Royal Society of Tropical Medicine and Hygiene*, London, 28: 39-76 (June 30) 1934.
- Beeuwkes, Henry, A. F. Mahaffy, A. W. Burke, and J. H. Paul. Yellow Fever Protection Test Surveys in the French Cameroons, French Equatorial Africa, the Belgian Congo, and Angola. *Transactions of the Royal Society of Tropical Medicine and Hygiene*, London. In press.
- Soper, F. L., and Alvaro de Andrade. Studies of the Distribution of Immunity to Yellow Fever in Brazil. II. The Disproportion between Immunity Distribution as Revealed by Complement-Fixation and Mouse-Protection Tests and History of Yellow Fever Attack, at Cambucy, Rio de Janeiro. *The American Journal of Hygiene*, Baltimore, 18: 588-617 (November) 1933.
- Davis, N. C. The Microscopical Examination of 29,593 Human Livers from Central and Northern Brazil, with Special Reference to the Occurrence of Malaria and Schistosomiasis. *The American Journal of Hygiene*, Baltimore, 19: 567-600 (May) 1934.
- Soper, F. L., E. R. Rickard, and P. J. Crawford. The Routine Post-mortem Removal of Liver Tissue from Rapidly Fatal Fever Cases, for the Discovery of Silent Yellow Fever Foci. *The American Journal of Hygiene*, Baltimore, 19: 549-566 (May) 1934.
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- Soper, F. L., H. A. Penna, E. Cardoso, J. Serafim, Jr., M. Frobisher, Jr., and J. Pinheiro. Yellow Fever without *Aedes aegypti*. A Study of a Rural Epidemic in the Vale do Chanaan, Espírito Santo, Brazil, 1932. *The American Journal of Hygiene*, Baltimore, 18: 555-587 (November) 1933.
- Kerr, J. A., and L. Patiño Camargo. Investigaciones sobre fiebre amarilla en Muzo y Santander. *Revista de Higiene*, Bogotá, 2: 63-92 (March) 1933.

### Control of Yellow Fever

*Brazil.*—The aim of the yellow fever work in West Africa has been to delimit the areas in which this disease occurs. In Brazil the Foundation has, for a number of years, not only engaged in the study of yellow fever but has aided the government in measures for the control of the disease. These activities were continued in 1933.

The viscerotome service for the routine collection of liver tissues from persons dying after brief illnesses was further extended and intensified during the year; 21,846 liver specimens were examined as compared with 14,422 the year before. Only nineteen cases of yellow fever in eleven localities were confirmed by liver examination as compared with thirty-nine cases in twenty-seven localities in 1932. There has therefore been a decline in the number of confirmed cases of yellow fever. Fewer cases were registered in 1933 than in any year since 1927.

Liver examinations revealed the presence of yellow fever in two widely separated localities in the Amazon basin, one on the Brazilian frontier opposite Colombia and Peru, and the other at Rio Branco in the Acre territory in the extreme western part of Brazil. Of the yellow fever cases discovered in 1933, eight were in Pernambuco, one in Parahyba, eight in Ceará, one in the Amazonas, and one in Acre.

For the work of control, Brazil has been divided into four administrative districts, namely, the Southern, Bahia, Northeastern, and Amazonas sectors. By a decree passed in 1933, the Government of Brazil delegated broad legal attributes to the Yellow Fever Service, empowering it to enforce the yellow fever laws of the country. At the end of the year, this service had 1,267 control posts, as compared with 676 at the end of 1932, and 374 at the end of 1931. The increase in the number of posts occurred chiefly in the known infected area in the northeastern interior, but control work was also extended to include the city of Manáos, the capital of Amazonas. This is the last large center of population in Brazil lying within the endemic yellow fever zone to be supplied with antilarval service.

In the control work somewhat less use was made of larva-eating fish than in the past, and more attention was paid to the application of oil to all water containers in which mosquito breeding was observed. Oil has proved most efficacious in reducing stegomyia indices.

The employment of squads for capturing adult mosquitoes was also widely extended during 1933. The work done by these squads is useful in giving an idea of the number and distribution of stegomyia mosquitoes. Often it results in

revealing the few remaining breeding foci, so that work can be directed toward the practical extinction of stegomyia from the area under control.

*Bolivia.*—One case of yellow fever was confirmed in Bolivia during 1933. It occurred in the small village of San Ramón, a four-day mule journey from Santa Cruz. Epidemiological investigations in this community have already been described.

Control work in Bolivia through a cooperative yellow fever service was started in June 1932, following a contract signed for this purpose between the Government of Bolivia and The Rockefeller Foundation. This contract continued in force during 1933. There was close cooperation with the federal, departmental, municipal, and military authorities, as well as with the press. At the end of the year there were still twenty-five control posts in operation. At the height of the work there were forty-nine such posts, but many were closed as further investigation indicated that there was no danger from yellow fever.

*Paraguay.*—Developments throughout the year indicated the apparent absence of yellow fever at present in Paraguay and the slight probability of invasion of the disease from the Bolivian focus. All control posts were closed.

Of the eleven viscerotome posts at one time in operation, four on the main lines of river travel were continued.

#### Vaccine

Vaccination against yellow fever by the injection of human immune serum and living yellow fever virus fixed for mice was begun in 1931. The number of persons vaccinated in the laboratories of The Rockefeller Foundation has now reached fifty-six. These persons have been principally members of the staff of the Foundation assigned to yellow fever work, and government officials, missionaries, scientists, and educators about to leave for countries in which yellow fever was present. This method of vaccination cannot be applied as widely as is desirable on account of the difficulty of securing the required amount of human immune serum, which, of course, must be obtained from persons who have had yellow fever or have been vaccinated against the disease.

Vaccination has been successful. Reaction, when present, has consisted of a rise in temperature about thirty-six hours after the injection of the virus, often accompanied by headache and sometimes by generalized discomfort. In order to obtain information as to the duration of immunity in vaccinated persons, sera from eleven

of these were tested two years after vaccination. In every case evidence of protective power of the serum was obtained, but in most instances the titer or potency was found to be below the level reached soon after vaccination. Four persons with low titers were given intradermal injection of some of the virus preparation used in vaccination, with the usual injection of immune serum omitted. The immune serum was unnecessary because protective antibodies were already present from the former vaccination. The titers rose rapidly after the injection, and in two instances reached their former high level. From this it appears that revaccination can be performed simply and effectively if found advisable. More time will have to elapse before a definite opinion with regard to the need for revaccination can be formulated.

So far as is known, no person vaccinated against yellow fever has contracted the disease. There have been no cases of yellow fever among the Foundation staff either in the laboratory or in the field since vaccination was begun two and a half years ago, although accidental infections had previously been frequent and seemingly unavoidable.

In experiments carried out during the year, it was found that immune serum recovered from animals, when injected into monkeys twenty-

four to forty-eight hours after they had been inoculated with yellow fever virus, was capable of preventing or ameliorating the disease in a significant proportion of the monkeys. After forty-eight hours the effect was less definite. In no instance did the monkey recover if the administration of serum was delayed until his temperature had reached 104° F. This temperature is the threshold of fever and the beginning of illness in rhesus monkeys. Experiments show that there is no virtue in administering immune serum therapeutically. The serum, in other words, can be used only as a preventive and not as a cure.

Sawyer, W. A. *Notre Expérience de la Vaccination contre la Fièvre jaune. Bulletin mensuel de l'Office international d'Hygiène publique*, Paris, 26: 1072-1077 (June) 1934.

Davis, N. C. On the Use of Immune Serum at Various Intervals after the Inoculation of Yellow Fever Virus into Rhesus Monkeys. *The Journal of Immunology*, Baltimore, 26: 361-390 (May) 1934.

#### Virus Studies

During 1933 additional studies were made of tissue culture of yellow fever virus. The behavior of the viruses of yellow fever, smallpox, and herpes in the laboratory was studied in the presence of living and dead cells and tissue extracts. It was confirmed that these three types of virus can be cultivated only in the presence of living cells. Filtrable viruses can be cultivated in tissue cultures outside of the body.

In the absence of living cells or when tissue extracts alone were used, survival of the virus for a limited time could be obtained, but propagation under these circumstances was not possible. In the presence of dead tissue the virulence of the virus cultures disappeared.

A special study was made of two strains of mouse-adapted yellow fever virus in tissue culture, which had been cultivated through more than one hundred generations without change in pathogenicity, in a medium consisting of diluted normal monkey serum and living chicken embryo cells. Culture virus contained in this medium may be kept virulent for more than half a year if dried when in a frozen state. Virus which has entered into the living cell in the culture medium is not acted upon by immune serum. Virus in dead cells is destroyed under these conditions.

Investigations were made to discover whether the sera of baby monkeys born of mothers immune to yellow fever would display any protective properties against the disease. It was found that the sera of five monkeys less than six months old, born of such mothers, did display protective properties. Sera of two of these monkeys, when tested three months later, showed no protective power. It is not determined whether the protective properties of the

sera of the baby monkeys were derived from the mother through the placenta or by way of the maternal milk. There is a possibility that in very young children there may be present a temporary immunity to yellow fever transmitted from the mother.

In the literature on immunity, mention is made of hyperimmune serum, containing more protective antibodies than are present in the usual immune serum. Presumably such a serum might be produced in an animal repeatedly inoculated with additional amounts of yellow fever virus. A study to test this was undertaken on five normal healthy *Macacus rhesus* monkeys, but there seemed to be no significant increase in the protective antibodies in the sera of the five monkeys after repeated subcutaneous injections of neurotropic yellow fever virus at monthly intervals. Such repeated inoculations evidently do not materially alter the serum of a rhesus monkey already highly immune to yellow fever.

Since the virus of yellow fever is filtrable, it would be interesting to know just how small or how large the particles are that pass through the filters. During 1933 some preliminary work was done on this problem. For fifty years attempts have been made to develop a method for preparing permeable collodion membranes

with pores of graded and uniform size. A study of the methods of preparing these membranes was made, and one of them, Elford's method, was selected for further refinement. A formula was used for the preparation of collodion from which satisfactory membranes of graded porosity could be made. The pores of these membranes are remarkably uniform in size.

With membranes prepared according to the method of Elford, embodying certain minor modifications adopted by Bauer and Hughes, filtration experiments were carried out in connection with the virus isolated in cases of encephalitis in the St. Louis and Kansas City epidemics of 1933. The virus passed consistently through all membranes with an average pore diameter greater than 66 millimicrons, but the amount of virus passing through membranes with pore diameters between 72 and 66 millimicrons appeared to be greatly diminished. All collodion membranes have a strong adsorptive affinity for proteins. This adsorption naturally reduces the diameter of the pores. Elford has estimated that with membranes of greater porosity than 10 millimicrons, a particle must have a diameter only one-third to one-half as great as that of the pore in order to traverse it. In view of this it is estimated that the diameter of the encephalitis virus is between 22 and 33 millimicrons.

A further virus study made in 1933 concerned the partial purification of yellow fever virus through adsorption and elution. By adsorption on kaolin, with subsequent selective elution by dilute ammonia, preparations of yellow fever virus were made possessing a high degree of activity. This purification can be accomplished with ease and rapidity.

Haagen, Eugen. Ueber die Notwendigkeit lebender Zellen zur Viruszüchtung. Weitere Untersuchungen über das Gelbfieber-, Variola-Vakzine- und Herpes-virus. *Zentralblatt für Bakteriologie, Parasitenkunde, und Infektionskrankheiten*, Jena, 129: 237-254, (abt. 1) (August 15) 1933.

Haagen, Eugen. Yellow Fever Virus in Tissue Culture. *Archiv für experimentelle Zellforschung*, Jena, 15: 405-421, 1934.

Hoskins, Meredith. Protective Properties against Yellow Fever Virus in the Sera of the Offspring of Immune Rhesus Monkeys. *The Journal of Immunology*, Baltimore, 26: 391-394 (May) 1934.

Lloyd, Wray, and A. F. Mahaffy. The Serum Antibody Titer of *Macacus rhesus* Following Repeated Inoculations of Yellow Fever Virus. *The Journal of Immunology*, Baltimore, 26: 313-320 (April) 1934.

Bauer, J. H., and T. P. Hughes. The Preparation of the Graded Collodion Membranes of Elford and Their Use in the Study of Filtrable Viruses. *The Journal of General Physiology*, New York. In press.

Bauer, J. H., G. L. Fite, and L. T. Webster. Ultra-filtration Experiments with the Encephalitis Virus from the St. Louis Epidemic. *Proceedings of the Society for Experimental Biology and Medicine*, Utica, 31: 696-699 (March) 1934.

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Frobisher, Martin, Jr. A Comparison of Certain Properties of the Neurotropic Virus of Yellow Fever with Those of the Corresponding Viscerotropic Virus. *The American Journal of Hygiene*, Baltimore, 18: 354-374 (September) 1933.

Lloyd, Wray, H. A. Penna, and A. F. Mahaffy. Yellow Fever Virus Encephalitis in Rodents. *The American Journal of Hygiene*, Baltimore, 18: 323-344 (September) 1933.

#### Studies of Mosquitoes

In former annual reports of The Rockefeller Foundation accounts have been given of papers describing various mosquitoes other than the stegomyia which are capable, to some extent at least, of transmitting yellow fever virus. A paper was published in 1933 on the transmission of this virus by *Culex fatigans*, a mosquito which rivals *Aedes aegypti* as a domestic pest in the American tropics and subtropics. Previous transmission experiments with this mosquito had produced inconclusive results. Two experiments are reported in which virus was transmitted to rhesus monkeys by the bites of *Culex fatigans*. In one experiment the extrinsic incubation period was seventeen days; in the other it was twenty to twenty-three days. In one lot of mosquitoes survival of the virus was demonstrated as late as thirty-nine days after the meal on infective blood. The evidence indicates that a great many mosquitoes in the experimental lots were able to free themselves of the virus. It is concluded that *Culex fatigans* is not an efficient host of yellow fever virus.

The life habits of certain Nigerian species of mosquito which had been found experimentally to be vectors of yellow fever were given further study. Seasonal variations, feeding habits, and areas of distribution were investigated. No species was found to be active during the day time. The aedines are crepuscular and the non-aedines are nocturnal.

Although the main features of the life history of *Aedes (Stegomyia) aegypti* are well known, there is still some confusion about the conditions of culture. In a paper prepared in 1933, a technique is described for rearing stegomyia larvae, which gives highly uniform results and minimum mortality. Since the stegomyia is a domestic species the laboratory environment is not unlike that encountered by the mosquito in nature. In another paper, the egg laying capacity and longevity of the adult stegomyia are discussed. The average length of life of the blood-fed laboratory female stegomyia is about nine weeks. During this time she lays about 350 eggs. The female stegomyia may transmit yellow fever throughout her life. She continues to imbibe blood as long as she lives, and may also continue to lay eggs, but the number deposited toward the end of her life will be few.

Interesting attempts were made to determine the amount of yellow fever virus injected by the

bite of a single infected stegomyia mosquito. Experiments indicate that during active feeding each mosquito injects at least 100 infective doses of the virus. Perhaps 1 per cent of the total virus contained in the mosquito is injected at the time of the biting. Yellow fever virus within the mosquito body appears not to increase but rather to diminish in quantity.

A paper was published on mosquito breeding in the water collecting in leaf-bases of bromeliads. Larvae taken from these plants were bred out, and adults of five species were obtained. One of these species was a new one, which has been named *Culex microculex davisii*, in honor of Dr. Nelson C. Davis, at whose suggestion this study was first undertaken and who died in 1933. Since no larvae of *Aedes aegypti* were found in bromeliads it is probable that the mosquito breeding in these plants is of no importance from the yellow fever standpoint. Descriptions of South American mosquitoes of the genus *Mansonia* and the subgenus *Rhynchotaenia* were published. These are of considerable entomological interest.

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- Putnam, P., and Shannon, R. C. The Biology of Stegomyia under Laboratory Conditions. II. Egg-laying Capacity and Longevity of Adults. *Proceedings of the Entomological Society of Washington*. In press.
- Davis, N. C. Attempts to Determine the Amount of Yellow Fever Virus Injected by the Bite of a Single Infected Stegomyia Mosquito. *The American Journal of Tropical Medicine*, Baltimore. In press.
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- Davis, N. C. Notes on Some South American Mosquitoes. II. The Genus *Mansonia*, Subgenus *Rhynchotaenia*. *Annals of the Entomological Society of America*, Columbus, 26: 619-639 (December) 1933.
- Shannon, R. C. The Genus *Mansonia* (*culicidae*) in the Amazon Valley. *Proceedings of the Entomological Society of Washington*, 36: 99-110 (May) 1934.
- Philip, C. B. Mosquito Species Breeding in "Test" Water Containers in West Africa. Additional Observations. *Bulletin of Entomological Research*, London, 24: 483-491 (December) 1933.
- Soper, F. L., and J. Serafim, Jr. Note on the Breeding of *Aedes (Taeniorhynchus) fluviatilis*, Lutz, in Artificial Water-Deposits. *The American Journal of Tropical Medicine*, Baltimore, 13: 589-590 (November) 1933.

### Malaria Work

During 1933 The Rockefeller Foundation assisted three states in the United States and the health administrations of seventeen foreign governments in conducting antimalaria work. The states of the United States receiving aid were Florida, Georgia, and Mississippi. The foreign countries in which assistance was given were Jamaica, Puerto Rico, Costa Rica, Nicaragua, Panama, Colombia, Venezuela, Albania, Bulgaria, Germany, Greece, Italy, the Nether-

lands, Portugal, Spain, India, and the Philippine Islands.

As a rule a country or state is not aided in dealing with its complete malaria problem. Generally the Foundation makes studies in connection with some typical problem or cooperates in some specific demonstration within a limited area which serves to show how the malaria of that region can be controlled efficaciously and economically, that is, at a cost well within the means of the communities concerned. In the case of such a widespread disease as malaria, the problem of successful control, especially in the tropics, is one that requires years of gradual effort by the people and the governments themselves.

#### **Control Problems**

Malaria is carried by certain species of a single genus of mosquito, the *Anopheles*. These species of malaria-carrying *Anopheles* show great variation in their breeding and feeding habits. In connection with any malaria situation it is important to find out which mosquitoes are responsible and then to study the habits of these mosquitoes, so that the incriminated insect may be attacked at its weakest point. After that comes a survey of all methods of control to determine which of them best suits the lay of the

land and the general habits and economic level of the community. It has been pointed out that we now have available at least two weapons against malaria not known when the Panama Canal was dug; these are Paris green and efficacious oil insecticides. The disease may also be fundamentally attacked by means of drainage, both subsoil and surface, by the use of larva-eating fish, and by screening of various sorts.

At Durres, in Albania, a distinct success was achieved in the control of the malaria vector (*Anopheles maculipennis elutus*) by the salinification of a lagoon in which it bred in large numbers. This mosquito is of a type that does not breed in salt water, and by rendering its favorite breeding place salty, the problem of its control was solved. Such an expedient happened to be possible in this particular area and is an illustration of the strictly local and sometimes unique measures that may be employed in malaria prevention.

An occurrence at Mysore City, in India, illustrates the dangers that sometimes attend irrigation projects. After the completion of a new dam there in connection with the installation of a hydroelectric plant, malaria began to spread. In the area concerned there were a thousand deaths from this disease. Here we

have an example of man-made malaria, usually controlled with comparative ease, but illustrative of the principle that in drainage projects the possibility of furthering instead of hindering mosquito breeding must be taken into account. In Bangalore, the chief city of the state of Mysore, the malaria carrier, *A. stephensi*, has been controlled at low cost by the use of the small top-feeding minnow known as *Gambusia*.

At certain demonstration points in Italy, where intensive malaria work, comprising all available antimosquito measures, has been conducted for a number of years, conspicuous success has been attained in the elimination of the vector of the disease. During 1933, for the first time in history, no *Anopheles maculipennis* mosquitoes were found at either Fiumicino or Sermoneta, two of the important demonstration centers, and not more than one a week in Siniscola, another important center. Antilarval work of the latest and most advanced type is now being widely applied throughout Italy. Emphasis is placed on the use of Paris green. This larvicide is prepared for use by mixing a small amount of it with road dust or some other diluent. Such a mixture, spread thinly on the water, will kill anopheline mosquito larvae.

The problem of tropical malaria is well illustrated by the work in the Philippines. At



## Photograph Excised Here

Automatic Paris green distributor used for the control of mosquito larvae in streams in the Philippine Islands.

The distributor is activated by a paddle-wheel in the stream. The larvicide falls from the container and is carried by the stream.



## Photograph Excised Here

Spreading a mixture of Paris green and road dust along the shore of Annotto Bay, Jamaica, British West Indies, to destroy mosquito larvae.

the Stotsenburg Army Reservation Camp, where malaria has defied all efforts since 1903, it is finally coming under control through army work based on studies, made in association with the Foundation, of the breeding habits of the mosquito (*Anopheles funestus-minimus*, subgroup of King) chiefly responsible for the transmission of the disease. It has been found that this mosquito is one that breeds almost entirely in streams. Accordingly, a Paris green distributor motivated by the water current has been devised. By dropping the larvical mixture from a mechanical device onto the surface of the stream, so that it is spread by the stream itself, the cost of malaria control has been considerably reduced. Well-planned drainage measures are also employed. For the Philippines as a whole, emphasis is placed on the use of bed nets. Tropical houses are not always of sufficiently strong and exact construction to make screening effective, but bed nets can be used with great success. The problem was studied and specific recommendations were made regarding material for these nets, their size, and the method of using them.

The foregoing are typical and random illustrations of a variety of malaria problems encountered. Wherever the Foundation undertakes malaria work every emphasis is placed on



Photograph Excised Here

Locally woven abaca mosquito net used in the Philippine Islands to enclose a single bed of rural style. The tunnels in the net at floor level contain bamboo poles. There is a foot of excess netting below the tunnels which must be tucked carefully under the poles.



Photograph Excised Here

Stripping abaca fibers to be woven into mosquito netting. The abaca is a species of banana indigenous to the Philippines.

research involving close study of the specific situation. A brief account of such researches, as detailed in various papers recently published by members of the staff, will be given in succeeding sections.

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- Russell, P. F. Mosquito Nets for Malaria Prophylaxis in the Philippines. *Philippine Journal of Public Health*, Manila. In press.

#### Mosquito Studies and Surveys

Results of a general mosquito survey made in the Amazon Basin in 1931 were published during 1933. The survey took place in the latter part of the rainy season, a time favorable for mosquito life in the valley. One-half the known anopheline fauna of Brazil, fourteen species in all, were observed. No new species were found, but important information was obtained on several that are little known. Nowhere were anophelines found in such great density as is commonly attained by the anophelines of certain regions of the North Temperate Zone.

The *Anopheles darlingi* is probably the most important vector of malaria in this Amazon region. It was found in houses in appreciable numbers. Further evidence obtained indicates that it is primarily a species breeding in flood

water. It is, therefore, absent in towns of sufficiently high elevation to be free from flooding. This explains the apparent lightness of malaria in certain Amazonian towns. Along the periphery of the basin it is possible that the presence of *A. albitalis* may complicate the malaria problem.

A monograph has been prepared on the malaria mosquitoes of the Philippine Islands, with history and critical bibliography extending from 1898 to 1933. Malaria is endemic throughout the Philippines, but not uniformly so. There are two malaria zones, one between the coastal plain and the foothills and one on the other side of the plateau, between the foothills and the mountains beyond. The incidence of malaria has fallen steadily and sharply in the islands, but the malaria problem is by no means solved. Each year a large number of malaria cases still occur. The disease is transmitted chiefly by anophelines of the *funestus-minimus* subgroup, which breeds in streams, rivers, and flowing irrigation ditches. These mosquitoes have not been reported from salt water, rice fields, or streams at altitudes higher than 2,000 feet.

A study was made of the flight range of the *funestus-minimus* subgroup of anophelines in the Philippines. Stained mosquitoes were liberated

and recovered at distances varying from 1 kilometer to  $1\frac{1}{2}$  kilometers from the point of liberation. It is concluded that these anopheleses fly a distance of at least 1 kilometer.

A new type of trap for catching adult mosquitoes was developed in the Philippines. It consists of an earth-lined box imitating the natural daytime resting places favored by the chief local vectors of malaria.

A study was made of the possible value of an animal barrier in malaria control in the Philippines. During the first four months of 1933 collections of adult mosquitoes of the *funestus-minimus* subgroup were made in one locality. Some of the catches were made in the daytime from the banks of streams, which are the natural outdoor resting places of this mosquito, and some were made at night while the insects were feeding on carabaos. One hundred and thirty-three mosquitoes were caught in the daytime and 572 at night. Five of the mosquitoes captured were infected; of these, four were caught at night. There is strong presumptive information that mosquitoes which had first taken blood from an infected human being were attracted to carabaos for a subsequent feeding at a time when they were potentially dangerous to man. This might indicate the possible usefulness of an animal barrier. It is concluded,

however, that when these animal barriers are uncontrolled, they are of little use.

In the mountains of Northern Greece there was found a species of mosquito, *Anopheles (anopheles) marteri*, heretofore known only in Algeria. It is probable that this mosquito also exists elsewhere in the mountains of Southern Europe. Both in Algeria and in Northern Greece, the larvae are found in small mountain streams. Larvae, pupae, and adult mosquitoes were obtained in Greece at an altitude of about a thousand meters.

Results of observations and experiments on mosquito breeding in pit latrines in Panama were published. Because many species of mosquito breed in pit latrines there arose some years ago a popular fear that these latrines, useful in the control of hookworm disease, might increase the spread of malaria. Eight hundred and thirty-five mosquitoes breeding in pit latrines were caught and identified, but among them there were no anophelines. Attempts to breed anophelines under laboratory conditions in polluted water failed. It is concluded, therefore, that pit latrines are not important breeding places for anopheline mosquitoes and not a danger from the standpoint of malaria propagation.

The only area in Germany where tertian malaria is endemic is the locality of East Fries-

land in the vicinity of Emden. The epidemiological type of East Frisian malaria is comparable to the malaria found in the Netherlands. It belongs to the North European type of benign spring tertian malaria. The time of infection is possibly the autumn or even the midsummer of the previous year. The peak of the actual epidemic of malaria lies in the spring months of May and June. The races of *Anopheles maculipennis* (*atroparvus* and *messeae*) responsible for this malaria were subject to an intensive study. No confirmation of the so-called zoophile and androphile habits of these anopheline races could be derived from the observations. The resting habits observed might be explained by certain predilections with regard to temperature and humidity. In the Northern European type of benign spring tertian malaria the most decisive factor seems to be climate. The warmer the weather the more favorable are the prospects for transmitting the disease.

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- Weyer, Fritz. Beobachtungen an Hausanophelen im Zusammenhang mit der Rassenfrage bei *Anopheles maculipennis*. *Zeitschrift für Parasitenkunde*, Berlin, 6: 288-307 (December) 1933.
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#### Malaria Surveys

Although malaria has been known to exist in various parts of Mysore State, India, for a long time, no extensive study of the disease was undertaken up to 1927. In that year a rapid survey was made to determine the amount of spleen enlargement in children. Following this survey it was decided to select three representative areas for more intensive study. In these areas an effort was made first to discover the seasonal variation of malaria. Then many other aspects of the malaria problem were studied seriatim, and the results were published in a number of papers.

A survey of anophelines revealed twenty-two species, of which thirteen had been previously recorded. Many thousands of these anophelines were dissected. Infection was reported in *A. culicifacies* and *A. stephensi*. A study was made of the relative frequency of the occurrence of the parasites of benign tertian, malignant tertian, and quartan malaria. Spleen and parasite relationships were carefully gone into, especially so far as age groups are concerned. These studies comprise the subject matter of the first three papers.

A fourth paper deals with experimental control of malaria with Paris green. A fifth describes the control of anopheline breeding in Bangalore City, and goes further into the matter of malaria prevention by means of Paris green, which successfully controls *A. culicifacies* breeding. *A. stephensi*, which breeds in wells, was combated by stocking these wells with small fish. All the wells of Bangalore City were thus treated. The costs were kept low, well under 1 per cent of the normal receipts of the municipality.

In a sixth study, hemoglobin estimates made in the three research stations before control work began are discussed, with reference to sex and age. A seventh paper gives more detailed information on the anopheline transmitters of malaria. *A. culicifacies* and *A. fluviatilis* are

apparently the most important malaria vectors of the rural areas of Mysore, and *A. stephensi* and *A. varuna* are the minor carriers.

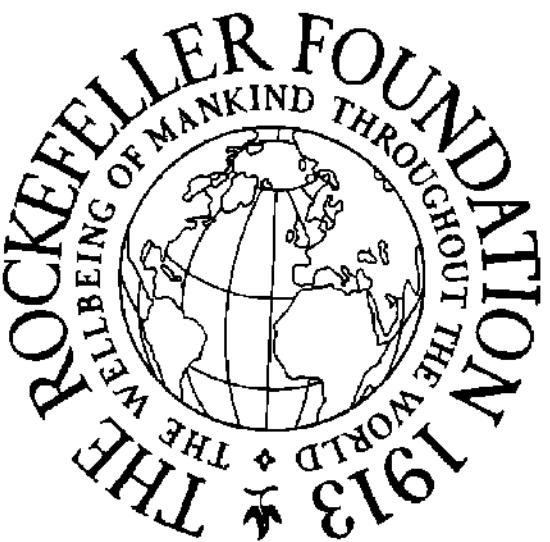
There are in Europe three epidemiological varieties of malaria, distinguished by location, namely, the Northern European type, the North Italian type, and the South Italian type. The North European type, which occurs in the Netherlands and in Germany, has been carefully studied. In 1933 there was published a similar study of the seasonal variation of typical epidemic malaria in Northern Italy. The distribution of the various races of *A. maculipennis* in relation to the occurrence of malaria in this region is discussed.

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### Experimental Studies

With a view to determining whether human malaria could be transferred to the lower monkeys, an experiment was made in the transmission of *Plasmodium falciparum*, the organism of aestivo-autumnal malaria, to the howler monkey (*Alouatta sp.*). The experiment showed the possibility of temporary but undoubtedly infections with *P. falciparum* involving several asexual generations in howler monkeys. Nine monkeys were successfully inoculated with parasites from man, and one through subinoculation from another monkey. The longest infection lasted eight days. It is suggested that *P. falciparum* may be so poorly adapted to this abnormal host that it is largely self-limited and requires little resistance on the part of the host. *P. falciparum* can be overcome and eliminated by natural processes much more easily than *P. brasiliense*, the common parasite of the monkey.



## Photograph Excised Here

Part of the 300-mile system of canals by means of which the Pontine Marshes of Italy are being reclaimed and the malaria mosquito is being controlled. The Rockefeller Foundation has contributed toward this drainage project.



## Photograph Excised Here

Marshy shore in Durres, Albania, which has been filled in with seaweed to prevent mosquito breeding.

However, it should be noted that the reaction of the monkey to a large number of trophozoites injected intravenously does not completely answer the question of susceptibility. The susceptibility of monkeys to human malaria is of epidemiological importance; and from this epidemiological standpoint, not blood inoculation, but the use of anophelines infected with human malaria is the critical test.

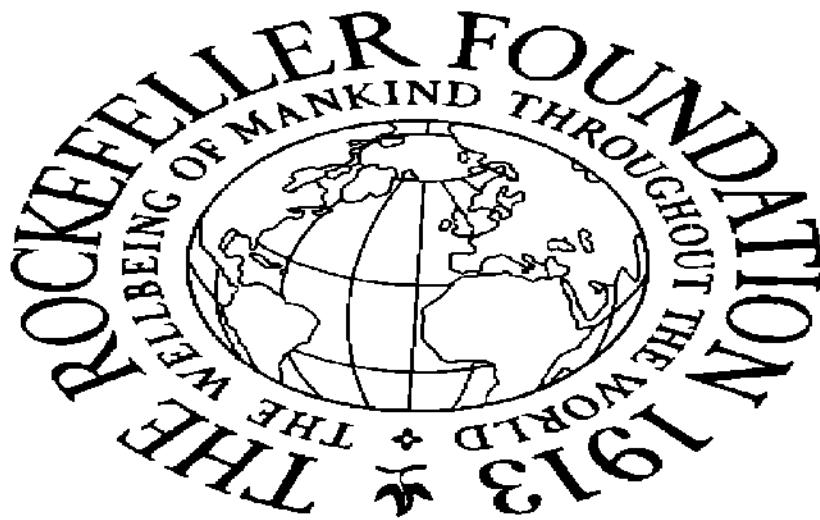
When *Culex pipiens* mosquitoes are fed upon birds which carry the organism of avian malaria, some become infected, others do not. A study was made of the susceptibility of the mosquito *Culex pipiens* to infection with *Plasmodium cathemerium* and *Plasmodium relictum*, organisms of bird malaria. In all, eighty mosquitoes were fed upon birds with *P. cathemerium* infections and fifty-seven on birds with *P. relictum* infections. Then the 137 stomachs of these mosquitoes were dissected and examined. Of the mosquitoes fed upon birds with *P. cathemerium* infections, forty-three showed normal parasites and thirty failed to show any infection. Of those fed upon birds with *P. relictum* infections, twenty-three showed normal parasites and thirty-two had failed to become infected.

The degree of infection in a susceptible mosquito appeared to be an inherent characteristic of the mosquito, not subject to variation in any



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When a malaria control campaign was begun in Salinas, Puerto Rico, there were in the vicinity of the town between 400 and 500 miles of open ditches of this type, where anopheline mosquitoes bred in large numbers. Subsoil drainage, for which concrete pipe from four to thirty inches in diameter is used, has eliminated practically all of these ditches.



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The main pipes of the Salinas drainage system discharge into open ditches which are situated close to the ocean.

marked degree. Earlier experiments present some evidence that this characteristic as well as the mere susceptibility of the mosquito is hereditary. Heredity is perhaps the most important factor in determining natural susceptibility to infection within the species of mosquito. It is possible that some of the hitherto unexplained differences in the ability of a single species of mosquito to transmit malaria in areas geographically separated may be explicable on a genetic basis. Estimates indicate that mosquitoes ingest from 53,200 to 266,000 gametocytes at each blood meal.

Since the introduction of malaria therapy for general paresis, a number of strains of malaria apparently free from gametocytes have been reported. In the United States a study was made of a strain of the canary malarial parasite, *Plasmodium cathemerium*, obtained from Rome. This strain gave rise during biweekly passage by blood inoculations to two atypical strains, which for ten months failed to produce any gametocytes (sexual organisms). Another strain remained poor in, but not free from, gametocytes; and still other strains having the same original source continued to produce gametocytes. No correlation was found to exist between the degree of infection in the bird and the number of gametocytes produced. The gametocyteless (atypical)

strain differs from the typical strain in that it has lost its periodicity of reproduction, and seems to be somewhat more virulent. It also has slightly different staining affinities. The two strains, however, show complete cross immunity to each other. When birds with latent atypical infections are inoculated with typical parasites no patent infection is produced, but the superimposed strain is maintained as a latent infection for at least eight months. There is no inimical influence of the atypical upon the typical strain when both are present in the single host. However, further experiments are needed before it can be concluded that strains of human malaria definitely lose the power to produce gametocytes.

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### Induced Malaria

Studies of induced malaria, as employed in the therapy of paresis and other related affections

of the central nervous system, were carried out in the Florida State Hospital over a period of two years, ending in June 1933. Similar studies have now been undertaken in New York, where close cooperation with various medical institutions is possible. Modern clinical studies of malaria as a disease, studies of the mental changes in the patients, and pathological studies are being made in cooperation with Cornell University. As the work has developed the mosquito problem involved has been changed completely by the successful rearing of anophelines in captivity. An insectary has been set up in the Foundation laboratories in New York, and work on the breeding of *Anopheles quadrimaculatus* was in progress throughout 1933.

The work in Florida included 109 successful inoculations with *P. vivax*, nine with *P. falciparum*, and five with *P. malariae* parasites. It should be noted that transmission of quartan malaria (*P. malariae*) to humans was effected by means of anopheline mosquitoes. It was shown that the prerequisite for successful inoculation is an adequate supply of anopheline mosquitoes, preferably secured by rearing. Since this mosquito has been successfully reared in captivity for the past two years, sufficient vigorous uninfected mosquitoes (*Anopheles quadrimaculatus*) are available at all times. Another requisite

is that there be available a continuous supply of patients for whom malaria therapy is indicated and in whom the strains of malaria parasites may be successfully propagated. Such services are organized in conjunction with mental hospitals.

The Negro race was found to exhibit a high degree of refractoriness to inoculation with *P. vivax*, but adults of the white race were uniformly susceptible to this parasite unless the subject harbored a latent infection with an homologous strain. Since Negro patients are tolerant to *P. vivax*, they must be treated with *P. falciparum*; but *P. vivax* and not *P. falciparum* is indicated in the treatment of whites, as it is less likely to produce untoward reactions. *P. malariae* is not practical to use in malaria therapy, because of its long intrinsic and extrinsic incubation periods and the great difficulty in infecting mosquitoes with this parasite, owing to the extremely scanty production of gametocytes.

A study was made of the duration of the infectiousness of anophelines harboring *P. vivax*. When, on the first exposure to the bites of such mosquitoes white patients fail to become infected with *P. vivax*, the cause does not lie in the refractoriness of the patients. It is more likely that a factor of moment is the depletion of the supply of sporozoites in the mosquito.

No inoculation succeeded when attempted with mosquitoes after more than fifty days had elapsed since the completion of the extrinsic incubation period. Inoculation during the second ten-day period gives most successful results. Thereafter comes progressive deterioration. Apparently two factors decrease infectibility: depletion of numbers of sporozoites, and deterioration of the sporozoites themselves.

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### Research on Other Diseases and Public Health Problems

#### Hookworm Disease

With the aim of determining more accurately the present status of hookworm disease in the coastal plain of Palestine, intensity of infestation was studied in about 2,200 persons from selected villages near Jaffa. Frequently the disease was severe enough to cause definite clinical symptoms. In certain villages from 50 to 80 per cent of the residents were found to harbor hookworms.

Studies of the epidemiology of helminth infections were carried out in an Egyptian village

in the Delta of the Nile. Habits of soil pollution were found to be widely prevalent; but owing to climatic conditions there was no heavy infestation of the soil with hookworm larvae and the worm infestation of the population, as shown by egg counts, was slight.

A study was made of the racial and age group incidence of the common intestinal helminths among Malays, Chinese, and Indians in the Straits Settlements. The study was based on data obtained during a survey made between 1925 and 1928, comprising 27,000 examinations. The incidence rates for hookworm, roundworm, and whipworm were higher in Malays than in Chinese or Indians. Chinese have the lowest incidence rates in all age groups for hookworms and roundworms, but the incidence of whipworms tends to be significantly higher in the Chinese than in the Indians. Hookworm infection among the three races tends to become greater in the older age groups. Roundworm and whipworm infections tend at first to rise and then to fall as the age increases, regardless of race. Conditions at the present time are possibly very different from those prevailing when the survey was made, because of the thousands of sanitary latrines installed since then.

On the basis of data obtained by experimental infection of dogs with the common dog hook-

worm, *Ancylostoma caninum*, a special study was made of the nature and cause of hookworm anemia. It was concluded that it is not necessary to postulate a toxin to account for the anemia of hookworm. The anemia is of the type which is clinically associated with chronic hemorrhage. It responds well to iron therapy.

The anthelmintic properties of certain alkyl phenols were investigated. In the search for a safe and effective human ascaricide, some 500 substances were tested. Hexylresorcinol was found to have as great activity as any. It is a safe and effective remedy for ascaris, and it is also relatively effective against hookworm disease. There were no cases of intoxication from this drug when it was properly administered, but there were reports of local irritation at the mouth caused by hexylresorcinol pills. Attempts were made to overcome the irritant properties of the drug. Ordinary methods failed, and a study was therefore made of several series of related compounds, alkyl phenols. None of these were as effective as hexylresorcinol however, and it appears doubtful whether a drug will be found in this series of compounds which will be as active as hexylresorcinol and yet have no local irritant action. For uncomplicated hookworm disease tetrachlorethylene is, according to present knowledge, the best drug available.

A group infestation of seven cases of acute hookworm disease occurring in Puerto Rico was reported. The infection was contracted during sea bathing in water highly polluted from a rain-swollen overflowing stream. There was sudden onset of symptoms, which included initial dermatitis followed by marked throat discomfort in the form of a sensation of obstruction. Within two to four weeks a sharp diarrhea with colic appeared. All the patients complained of an unusual degree of weakness; all were pale and lost weight rather rapidly. The treatment recommended for this acute form of hookworm disease, which fortunately is unusual, is the prompt use of efficient anthelmintics, iron in large appropriate doses, blood transfusion when the patient is suffering from profound anemia, and in the case of the pernicious type of anemia, liver extract by injection.

A larval phase of hookworm disease is described which is characterized by loss of strength and weight, anemia, irregular fever, a definitely high eosinophilia and leucocytosis, possibly diarrhea, and a light intestinal worm burden, indicating that only a small percentage of larvae had been able to reach the intestines, the rest remaining as a wandering or arrested group in the tissues. There may be no worms at all in the intestine, no ova from which to make a diagnosis, and only the

blood and the history of the case to suggest a larval invasion and a frustrated uncinariasis. No adequate remedy has as yet been found for this larval stage of the disease.

#### *Endamoeba Histolytica*

Studies of *Endamoeba histolytica* and other intestinal protozoa were continued in Tennessee. An attempt was made to determine the importance of the bacteria which are associated with the ameba in cultures, as possible factors in producing amebic lesions and in causing a difference in pathogenicity between individual strains of ameba. It was concluded that the bacteria are not an important factor in the difference of pathogenicity between different strains, but that this difference is probably due to a variation in the pathogenic activity of the amebae themselves. Earlier studies also support the view that differences in disease-producing capacity exist between certain strains of *E. histolytica*.

#### **Rocky Mountain Spotted Fever**

Information was published on Rocky Mountain spotted fever in North Carolina, where thirty-seven cases of this disease occurred in 1933. Both a mild and a severe type were found. The fatality rate was 16 per cent. The virus of the disease was isolated from one patient



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A chapel in San Lucas, Costa Rica, which was used as a dispensary during hookworm investigations in the community.



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Washing stools in an improvised laboratory in San Lucas preparatory to making hookworm counts.

with a mild infection. A differential diagnosis between Rocky Mountain spotted fever and endemic typhus was established.

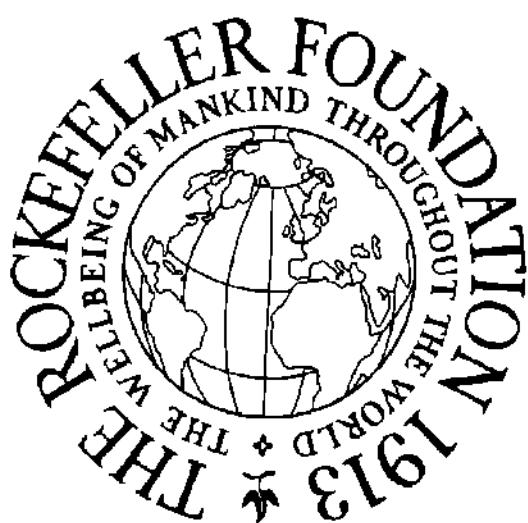
Small wild rodents constitute the basic animal reservoir of Rocky Mountain spotted fever. On these rodents the tick larvae and nymphae feed, and from them they acquire the infection. The dog is the best known host of the infectious tick in the East. Rocky Mountain spotted fever is not contagious from man to man. Its duration corresponds to the duration of the tick season. Measures of control through tick eradication are discussed in the article referred to above.

#### Tuberculosis

A paper was published in 1933 dealing with the bionomics of 505 white families attending the tuberculosis dispensary of the Henry Phipps Institute in Philadelphia during the years 1924 to 1929. The rôle played by the family in the spread of tuberculosis was investigated statistically. The factors discussed in the paper include family size, nationality, composition by sex and age, tuberculosis morbidity and mortality, housing, and economic status.

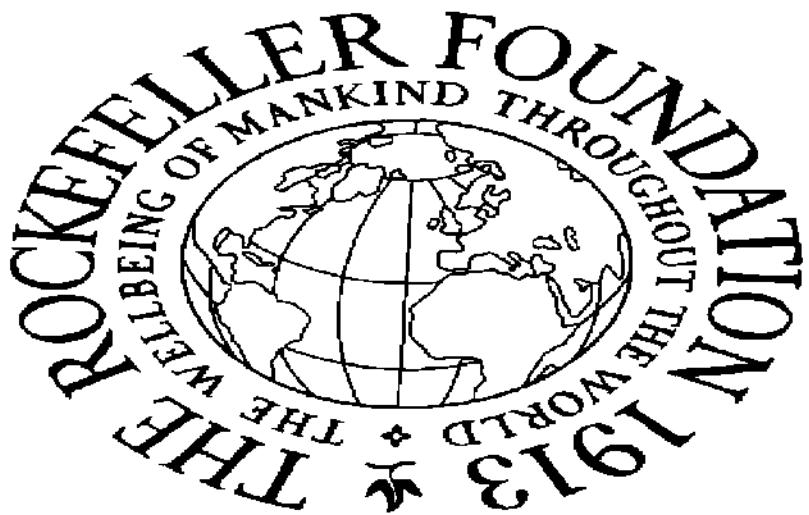
#### Sprue Anemia

In a study of the pathology of the bone marrow in sprue anemia, which was carried out in Puerto



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One of Jamaica's parochial tuberculosis infirmaries. The Rockefeller Foundation is assisting the Jamaican Government in a study of tuberculosis throughout the island.



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New tuberculosis dispensary in Panama City. The Foundation is cooperating with the Government of Panama in the development of its tuberculosis service.

Rico, the effects in the tissue were found to be similar to those caused by pernicious anemia. Twenty-two patients with sprue anemia of a macrocytic type were studied. The macrocytic anemia of sprue is mainly the result of a deficiency similar to that existing in pernicious anemia, although brought about in a somewhat different manner.

#### Filariasis Surveys

A paper was prepared during the year on the results of a rapid survey of filariasis made in the Southern Province of Ceylon between November 16, 1925, and January 15, 1926, by the staff engaged in a hookworm campaign. Blood specimens were taken from 3,371 persons, of whom 163, or almost 5 per cent, were found to have microfilariae in their blood. Forty-two cases of elephantiasis were reported; eleven of these were in persons who had microfilariae in the blood and thirty-one were in other persons. In all, then, 194 persons showed at least one of the signs of filariasis, and the total filariasis rate for the province was probably somewhere near 5.8 per cent. No study was made of the vectors of the disease.

A small filariasis survey was carried out during 1933 in the Montserrat district of Bahia, Brazil. Blood smears were taken from eighty persons,

and three positive smears were found. An investigation of the possible vectors of *Wuchereria bancrofti* (Cobbold) in Bahia, indicated that the chief transmitter there is without doubt *Culex fatigans*. It is probable that development of filarial larvae can take place in all members of the *Nyssorhynchus* group of *Anopheles* mosquitoes; and these mosquitoes should therefore be considered as probable vectors, accessory to the usual *Culex* host.

#### Schistosomiasis

Schistosomiasis constitutes an important public health problem in Rincón del Valle, a suburb of Caracas, Venezuela. Smear examinations of stool specimens from 200 persons living in this community showed that over 30 per cent of them were discharging eggs of *Schistosoma mansoni*. Many of these persons were polluting streams infested with snails of the species *Planorbis guadalupensis*, the intermediate host of *S. mansoni*. The severity of schistosoma infection is measured by spleen enlargement. The degree of infestation in Rincón del Valle was not sufficient to cause prevalent splenomegaly.

#### Diseases of Pacific Races

The extension of medical effort, curative and preventive, has been an important factor in

coping with the depopulation problem of the Pacific races. The cause of the decay of native races is largely disease. Native medical practitioners trained in simple medicine have already played a large part in the racial recovery of Fiji. Other islands have joined forces with Fiji to provide themselves with better trained native practitioners. For Northwestern Melanesia such education may prove to be a solution for the problem of racial regeneration. The Pacific races fall into three groups, the Eastern Polynesian, in which populations have declined to a point beyond racial regeneration, the Mid-Pacific groups which are now again safely on the upgrade, and the purely Melanesian groups to the West which are still in the throes of decline.

A health survey in the British Solomon Islands showed that the islanders are confronted with serious medical problems. Tuberculosis is on the increase, but its extent has to be conjectured. The same is true of leprosy. Sanatoriums to handle both leprosy and tuberculosis are urged if only for the practical reason of conserving the native races.

New Zealand has an enviable list of achievements in the field of public health, which include the lowest death rate in the world, the lowest tuberculosis death rate, the highest expectation of life for each sex, the first department of public

health constituted under control of a minister of the Crown, and the first state registration of nurses (1901). These achievements are to be accounted for partly by the natural advantages of a healthful climate and partly by the efficiency of the health service. There are 1,435 qualified medical practitioners, about one to each thousand of population. The country is divided into forty-five hospital districts, with liberal provision of public hospital beds in numbers representing 5.98 per thousand of population. Every town of 2,000 population or over has water-borne sewage and piped water supply.

Papers were published during the year on health conditions in New Zealand and in the British Solomon Islands, and on native medical lore encountered among the Polynesians inhabiting the Cook Islands.

#### **Refuse and Garbage Disposal**

In general the development of efficient methods of refuse and garbage disposal have not kept pace with sewage disposal processes. Refuse and garbage are as a rule dumped on land or at sea, or fed to hogs, incinerated, or otherwise reduced. In an agricultural country like India, the manurial value of a mixture of street rubbish and night soil is well recognized. Experiments on composting such street rubbish with night

soil were carried out at Mysore City, with due precautions against fly breeding. The work was done at low cost.

### Statistical Epidemiology

One of the problems confronting the epidemiologist is the evaluation of the effective contact rate of a given disease among a given population group. What proportion of individuals are exposed to infection during a given period of time, such as a year? What fraction will not develop the disease because they have had previous attacks, or because, perhaps, they have a natural immunity?

The answers to these questions are generally obtained from the study of morbidity rates. More critical studies are founded on surveys which keep under observation a sample of the population over a considerable length of time. Still another approach to the problem is possible in the case of diseases which leave traces of their attacks in the shape of permanent immunity. The fact that effective exposure has taken place can be ascertained sometimes by records and at times by means of a test. In these cases the figures represent a summation. For example, they give the sum of all children ten years of age who have had the disease at any time in the past. Knowing the sum of infections at different ages,

it is possible to go back and find the exposure rate which would produce that sum. In a recently published paper the mathematical processes involved in this procedure are explained, illustrations are given, and tables facilitating the calculations are provided.

#### General Public Health Work

Twenty years of county health work in North Carolina were discussed in an article prepared in 1933. North Carolina has 100 counties, and up to the present fifty-four of them have started some type of full-time county health work. The earliest full-time county health department in the United States was established in North Carolina in 1911. About forty of the counties are financially able to maintain a standard health department.

Since 1932 the requirement for appointment as full-time county health officer in North Carolina has been the completion of a course in public health at a school approved by the State Board of Health, or two years of satisfactory experience as a public health official. The principle is accepted that a balanced county health program needs a qualified health officer, a trained public health nurse, an efficient clerk, a competent sanitary inspector, and a dentist who understands oral hygiene. It is stressed that high,

inflexible professional standards for the county health officer should be adopted and enforced.

The distinctively American achievements in public health were discussed by Dr. J. A. Ferrell, president of the American Public Health Association from October 1932 to October 1933, in his presidential address before the meeting of the association held at Indianapolis on October 9, 1933. American investigators have been prominent among the discoverers in etiology, serology, and other branches of medicine that supply information on which sound disease control measures are based. The country has been a leader in the application of knowledge in the control of disease. It has also gone far in popularizing public health knowledge. Chlorination of water and pasteurization of milk were first extensively applied in America. Further American contributions to public health progress have been the private or unofficial health agency, the university school of public health, public health nursing, the development of sanitary engineering, and the relative perfection of local health services, with continually more fruitful efforts at obtaining full-time professional occupation for all classes of health workers.

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#### Aid to State and Local Health Services

The Foundation has for many years contributed toward the work of both central and local

health services in states and countries in many parts of the world. The assistance to central services includes funds for central public health administration and aid to various divisions of the central health department, such as those of vital statistics, epidemiology, public health laboratories, public health nursing, or sanitary engineering. No less important is the support given direct to local or county health departments within various states and countries. The Foundation has always stressed the development of well planned and fully rounded local health departments, to bring the benefits of health directly to the people concerned. Usually the strictly local health activities in which the Foundation participates take the form of demonstrations which serve as models for other parts of the country and in general act as a stimulus toward improving the direct application of a variety of health measures. From work in the demonstration areas much practical information is obtained. Frequently the areas are used as training centers for health officers.

In Europe alone the Foundation, during the past year, aided fifteen countries, as well as the League of Nations, in public health work. The type of assistance given in each of the countries is shown on the map on page 91. The same sort of public health work, adapted to local condi-

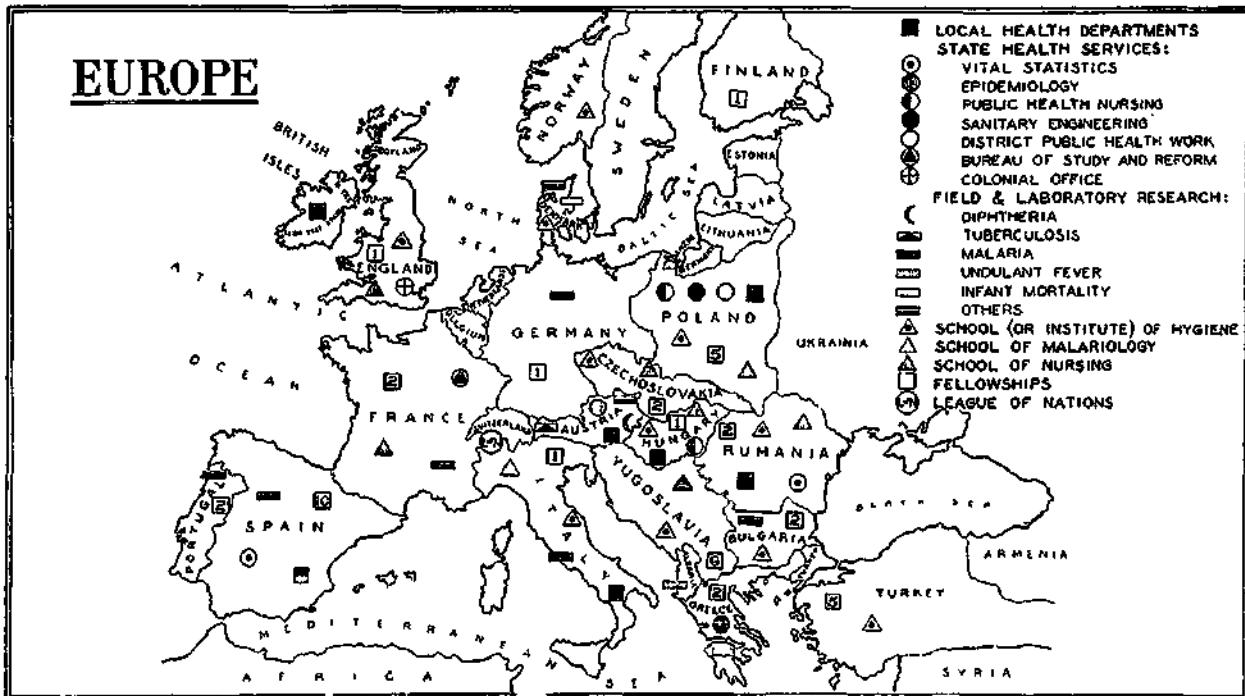
tions, was aided also in the Far East in Ceylon, China, Egypt, India, the Netherlands East Indies, the Philippine Islands, and the South Pacific Islands; in Jamaica, Puerto Rico, Nicaragua, Salvador, Costa Rica, and Panama in the Caribbean region; in Colombia and Venezuela in South America; and in Mexico, Canada, and the United States.

#### Cooperation with Central Health Services

*Public Health Administration.*—The Foundation continued during 1933 to aid certain health departments in the United States and Mexico by furnishing, temporarily, additional personnel and supervision of personnel. Aid was given to the central health administrations of Arkansas, Georgia, Kentucky, and Tennessee for the supervision of county health departments. Similar assistance was given to the central health office of Mexico. In Alabama funds were provided to enable the central administration to develop training in midwifery.

In Puerto Rico the central health office directs the municipal health departments and trains public health nurses. This central office was assisted in its task of organizing and supervising various public health units throughout the country. Similarly, aid was given toward the expenses of the headquarters office in Central

# EUROPE

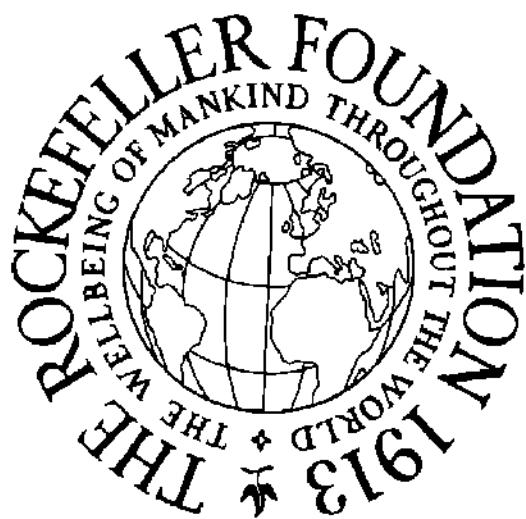


Types of health work in which the Foundation is assisting in Europe.

America, from which a Foundation representative supervises special projects throughout six countries of Central America and acts in advisory capacity to several health departments. Office facilities in a public health building are furnished by the Government of Costa Rica. In Panama the Foundation has a representative whose activities have recently been directed more specifically toward the malaria problem. A country-wide anopheline survey has been carried out.

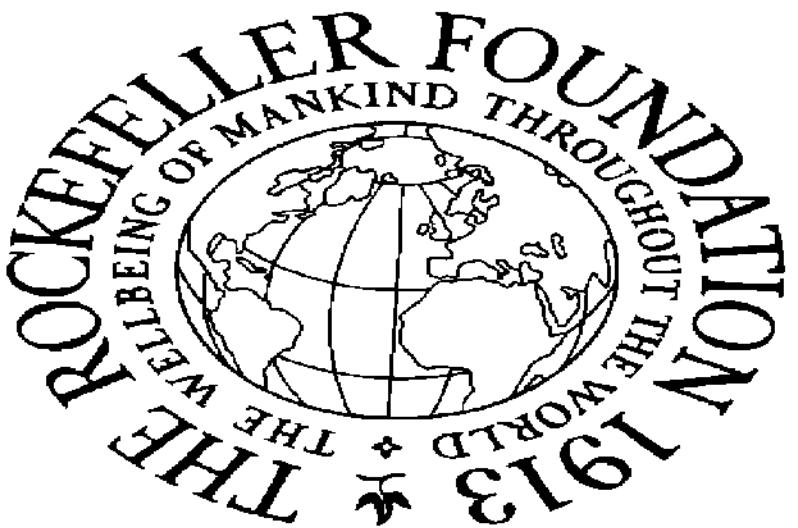
In the Far East the Foundation maintains representatives in a number of countries to act as advisers to health authorities and to supervise cooperative work. After many years of successful work in Ceylon the Foundation representative is transferring his headquarters from Colombo to Lucknow, the capital of the United Provinces, India, in order to supervise the work of a health unit which has been established at Partabgarh. Another representative in India transferred his headquarters from Rangoon to the city of Madras, where, during 1933, he assisted the Director of Health in the development of rural health work in the Madras Presidency. Research on soil pollution and hookworm disease was continued in the presidency.

In China the Foundation representative is adviser on health to the Chinese Government.



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A group of prize babies of Breathitt County, Kentucky, where the local health department is giving special attention to maternal and child hygiene. The Foundation is assisting the central health service of Kentucky in providing supervision of county health departments.



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A branch public health laboratory at Turrialba, Costa Rica.

He is also professor of hygiene and head of the Department of Public Health and Preventive Medicine at the Peiping Union Medical College, and gives special attention to the problem of the teaching of hygiene in medical schools. A rural health unit organized at Ting Hsien has been an important factor in the instruction of Chinese medical students in rural hygiene. During 1933 the representative in China made an extensive trip through the Philippines, Java, Malaya, Siam, and India, for the study of health administration in these countries.

In Java the Foundation representative continues to serve as adviser to the health department. In the Philippine Islands members of the Foundation staff are engaged in intensive study of various local health problems, with emphasis on malaria and mosquito work and also on the control of soil pollution. Many thousands of bored-hole latrines have been installed and are in successful use.

*Vital Statistics and Epidemiology.*—In four states of the United States—Alabama, South Carolina, Missouri, and Tennessee—aid was given during 1933 to the division of vital statistics of the state department of health. Divisions of epidemiology received aid in ten states—Arizona, Georgia, Iowa, Kentucky, Maryland, Mississippi, Missouri, Montana, North Carolina,

and Tennessee. Similar aid was given to the provincial Health Department of British Columbia, in Canada.

*Public Health Laboratories.*—Aid was given for the development of public health laboratory service in Tennessee and Alabama. In the former state support was given to the Johnson City Branch Laboratory and in the latter to the Bureau of Central Laboratories.

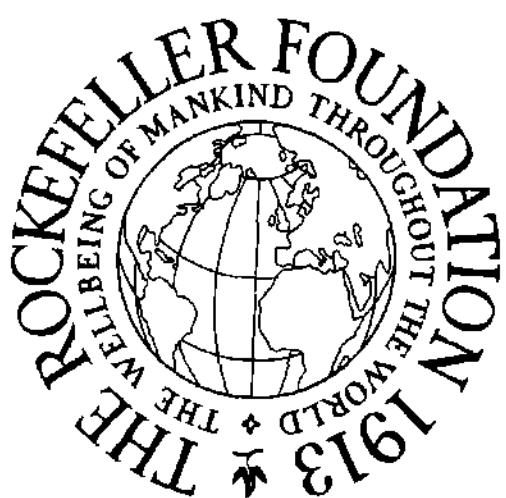
In Puerto Rico the public health laboratory, which has been entirely reorganized, received aid for the purchase of expendable supplies and replacement of equipment. The increase in the number of health units and the extension of malaria activities throughout the island have greatly added to the work of the laboratory. Nearly all the practicing physicians of the island make use of the laboratory facilities.

In Central America the establishment of public health laboratories is one of the important steps in advancing public health work. These laboratories lead to an expansion of the control of hook-worm disease as well as other diseases. They also serve to raise the standards of medical practice. The idea of public health laboratories is now thoroughly established in Central America. These laboratories have continued to function with little interruption during periods of political stress and change of government.

In Colombia aid has for a number of years been given to the National Hygienic Laboratory in the City of Bogotá. Early in 1933 a public health laboratory was opened at Baranquilla. This new laboratory, which is providing the Caribbean coast section of Colombia with effective laboratory service, has received Foundation support.

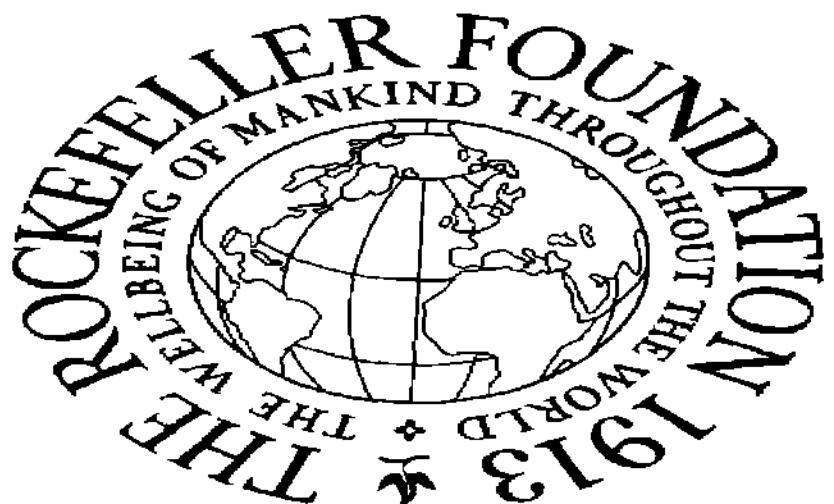
*Sanitary Engineering.*—Divisions of sanitary engineering were assisted in South Dakota and in Tennessee. The Foundation sanitary engineer assigned to the Caribbean region has established headquarters in Jamaica. He is assisting the Kingston Water Department as well as local boards of health throughout the colony in providing an improved water supply. Attention is given to the problem of water sterilization.

In Greece a cooperative program for work in sanitary engineering has been in force for a number of years. It began toward the end of 1929, when the services of a sanitary engineer were made available. During 1933 additional work was done on a drainage project in Marathon. A thorough antimosquito campaign has been organized in one of the important suburbs of Athens with dramatic effect in overcoming the local mosquito problem. In connection with drainage and other antimalarial measures in the Mourla and Drama areas as well as in the Peloponnesus and in Crete, sanitary engineering



**Photograph Excised Here**

Community well of Kapsia village in the Peloponnesus, Greece, before a cooperative rural health campaign was begun in this section of the country. The well was unprotected against surface pollution.



**Photograph Excised Here**

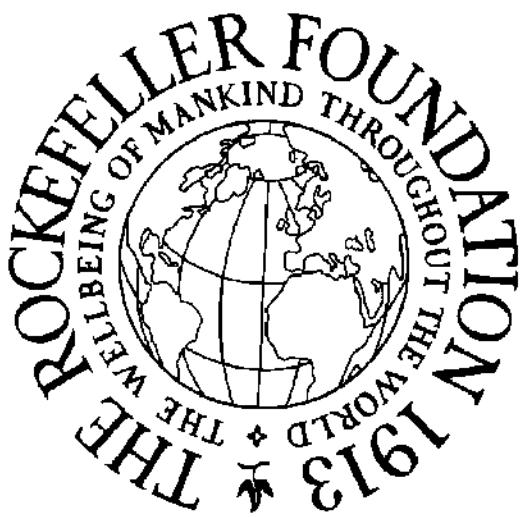
Kapsia well, now provided with a pump and otherwise protected against contamination. Similar sanitary improvements have been made in numerous rural communities of Greece.

divisions have been active in installing public latrines and wells, and otherwise promoting public health.

In Egypt considerable progress has been made in coordinating many engineering activities in various ministries and government departments. Bored-hole latrines have been successfully installed in several villages, and during 1933 the Foundation engineer assisted Egyptian authorities in extending this work to other villages. Attention was also given to the disposal of night soil, garbage, and refuse.

*Public Health Nursing.*—In Poland, where the Foundation cooperated with the State Department of Health in the development of a Bureau of Public Health Nursing, support was continued for the work of this bureau.

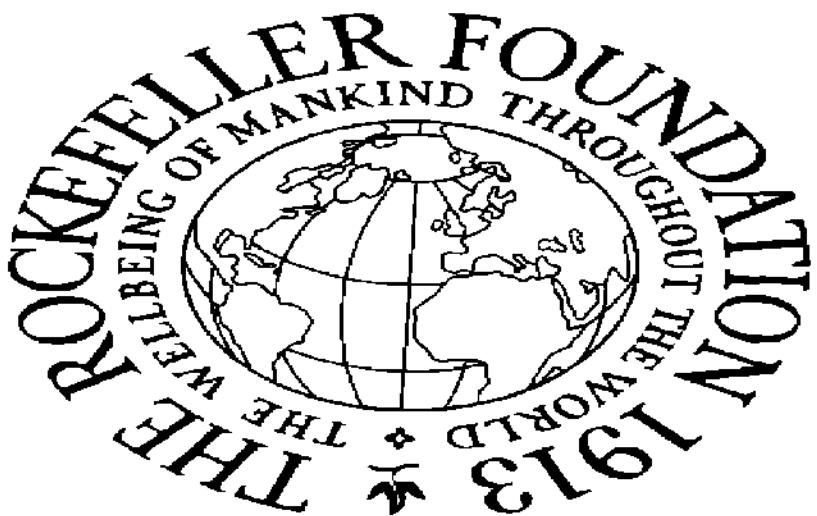
*Other Health Bureaus.*—In Jamaica, the Foundation continued aid to the Bureau of Health Education, which is a clearing house for much cooperative health work in that country. This bureau publishes *Jamaica Public Health*, and it also assists health workers in many parts of the island by the provision of public health literature and other material for educational work. Similar aid was given to the Section of Rural Sanitation of the Health Department of Colombia, which issues a monthly paper, *Salud y Sanidad*, with a circulation of 10,000 copies a



Photograph Excised Here

Taking a culture in a survey to discover diphtheria carriers, Eisenstadt District, Austria.

Comparing results of Schick tests for susceptibility to diphtheria, Eisenstadt District.



Photograph Excised Here

Midwives' club of the local health unit of Tierra Blanca, Veracruz, Mexico, one of the units aided by The Rockefeller Foundation. The club meets once a week at the office of the unit for instruction by the director and the nurse.

month. This publication is used as a text in many of the schools. Throughout the country stress is laid upon health educational work, both in the homes and in the schools, by well trained sanitary inspectors.

In Poland Foundation aid was given in 1929 to found the Bureau of District Health Work in Warsaw. According to the original agreement, support of this project was to be continued until December 31, 1931. In view of the financial situation, however, emergency aid was given to the bureau in 1932 and 1933, and assistance is to be continued on a decreasing scale until 1936. The bureau serves the central government by maintaining high standards in rural health work.

#### Local Health Services

In many places the Foundation is helping definitely circumscribed local health projects. During 1933 aid was given to such work in twenty-three states in the United States; in four provinces of Canada; and in five areas of Mexico—three in the state of Veracruz, one in the state of Morelos, and the fifth in the state of Oaxaca. Local health units were also aided in Jamaica, Puerto Rico, Panama, Austria, Czechoslovakia, Hungary, the Irish Free State, Poland, Rumania, Spain, Ceylon, India, Netherlands East Indies, and the Philippine Islands.

In Puerto Rico, at the beginning of the year, there were eighteen local health units with full-time programs in operation; these served a total population of over 900,000. In Jamaica the plan of school hygiene units has been accepted throughout the colony. By the end of 1933 ten parishes had school hygiene units. The Foundation has cooperated with a number of these by providing 25 per cent of their budgets for the first two years of work.

The establishment of a health unit at Chitre, Panama, and its successful operation for more than a year has stimulated the desire for similar work in other countries of Central America. The Chitre unit is used as a training base for health officers, sanitary inspectors, and public health nurses from other Central American countries.

The first cooperative district health department in Hungary, at Gödöllö, was begun in 1927, and proved so successful that four more were established. The Gödöllö district is used as a training center for students of the School for Public Health Officers of the State Hygienic Institute and for nurses from the Debreczen training school.

In Austria two public health demonstrations have received Foundation support for a number of years. The first was organized in the Hart-

berg Bezirk (County) in 1925 and was supported until the end of 1930. The second was established in the Eisenstadt District in 1929, and support terminated with the close of 1933. The research on tuberculosis and diphtheria in Eisenstadt, supported by Foundation funds, has attracted wide interest.

In Spain aid has been given for the development of provincial health departments in Caceres and Albacete. From Caceres two subcenters were established in important towns to meet the needs of the immediate locality. The influence of the provincial health department of Caceres upon the development of public health work in Spain has been considerable. The demand for the extension of health centers has become insistent. The number of primary health centers has increased from twenty-four to thirty-three and the number of provincial malaria dispensaries from ten to sixty-four.

In the Irish Free State county health departments are in operation in the counties of Kildare, Donegal, and Cork. These units have for the most part full-time personnel, and their programs call for the development of all phases of preventive medicine.

The model health district of Gilau, Rumania, has come to the end of its third year of successful operation. Its activities include prenatal clinics,

infant consultations, preschool clinics, tuberculosis clinics, antivenereal and dental clinics, and work with school children. Gilau serves as a recruiting station for health personnel.

In Czechoslovakia two health demonstrations, organized with Foundation support, are achieving good results. One of these is a rural demonstration in Holesov and the second an urban demonstration in the Vrsovice District of Prague. The Prague center serves as a field training area for students from the new school of nursing.

The year 1933 marked the completion of the Foundation's assistance to the last two of the five local health demonstrations which it aided in establishing in Poland. These demonstrations are at Lwow (rural-urban) and Wilno (urban). Health centers in Poland have multiplied rapidly since the establishment of the Bureau of District Health Work, increasing from two in 1925 to 250 in 1933.

In the Far East the Foundation has given aid to local health units in Ceylon and India. The wisdom of having the first health units in the East started in Ceylon has been confirmed by experience. These health units, especially one at Kalutara, serve as a convenient training ground for health officers from various parts of India and even from neighboring islands, such as Java and Sumatra. A permanent foundation

for health development has been laid in Ceylon. As short a time ago as eight years there began to be implanted the idea of community responsibility in health. Today this is firmly rooted. School medical work is going forward rapidly. Latrine construction has proceeded to a point where 20 per cent of the population has been supplied. The greatest need is for public health nurses.

In the Madras Presidency, as in most of India, the vast majority of the population lives in rural areas, where health conditions are still in a primitive state. The infant mortality rate, the hook-worm infestation rate, and even the cholera rate are high. There is urgent need for better health administration in rural districts. The Foundation has been cooperating with the Government of Madras for several years, and is now assisting in experiments aiming at the systematization of a rural health plan.

In Travancore, India, the Neyyattinkarai health unit is in successful operation. It has six substations, which are coming into helpful contact with the people. Each station has a midwifery service. A good beginning has been made in latrine construction. A statistical service has been started. Public health work is united in a single department, which carries out an extensive program, including cholera prevention measures.

Field studies in malaria and a filariasis survey have been completed.

In the United Provinces of India advanced health work is carried on, especially in the city of Lucknow. The bored-hole latrine has been widely adopted. Foundation cooperation is being given to the health unit at Partabgarh, which was opened in July 1932 with a three-year budget. This health unit has a full scale of activities, including health survey work, health education, cholera control, hookworm investigations, school medical examination, control of communicable diseases, maternity and child welfare work, water and sewage control, bored-hole latrine construction and other sanitation activities.

In Burma Foundation help to the Hlegu health unit is being continued. The year 1933 marks the end of four years of progressive work by this unit. The elements necessary to carry out effective health work have been determined. Over 80 per cent of the dwellings in Hlegu now have bored-hole latrines.

In rural health work in Java the emphasis is on health education and on the training of medical and nursing personnel. A health unit was organized in the Poerwokerto Regency early in 1933. A temporary office was opened, and a general survey of the area was begun. Special attention is given to the provision of birth and

vaccination certificates throughout the regency. Bored-hole latrines are being introduced in several villages. A maternity and infant welfare station has been established at the central office.

In China public health work has now reached a stage where there is a demand for local health units, and plans are under way for the establishment of rural and urban health centers. The Shanghai Health Department and the health station in Peiping, to which The Rockefeller Foundation has contributed in the past, have continued successful operations since their inception.

In the Philippine Islands the Rizal health center is making progress. There is considerable interest throughout the islands in developing methods of preparing cheap foods in an appetizing way so as to give the Filipino a balanced ration.

#### **Public Health Education Fellowships in Public Health**

Beginning in 1917, the Foundation developed a public health fellowship program which rose to a peak of 114 grants in 1931. From 1917 to 1933, inclusive, 1,216 fellowships have been active. Of this number, 204 were resident fellowships and 1,012 were traveling fellowships. These 1,216 fellowships have covered most of the civilized

world. Awards have been made to representatives of fifty-two countries and to two representatives of the League of Nations.

During 1933 a fellowship survey was completed. This included 825 persons who had held traveling fellowships between 1917 and 1931, inclusive. The object of the survey was to determine the present status of the fellows and to obtain some idea of the value and results of the public health fellowship program. Information was secured concerning 818 of those to whom questionnaires were sent. Fifteen had died, five had held non-public-health fellowships, and thirteen were still on fellowship, leaving 785 available for public health positions. Of this last total, 656, or 83.6 per cent, were in public health work. Of the 129 not in public health work, twenty-three were in non-public-health positions of importance in various official and semiofficial capacities. Of the 656 in public health work, 588, or 89.6 per cent, occupied full-time positions. Nearly 50 per cent of the fellows, at the termination of their fellowships, returned immediately to posts of greater responsibility than they had held before; and as the interval since the completion of their fellowships lengthened, the percentage occupying positions of greater responsibility increased rapidly. The results of the survey indicate that the fellowship

program has played a most important part in the development of public health programs throughout the world.

During the year 1933 the Foundation directed the studies of 197 fellows in public health. Of this group eighty-one were new fellows, three were on second fellowships, one was on a third fellowship, ninety-eight began their studies in 1932, thirteen began in 1931, and one in 1929. According to subjects of special interest, the group was divided as follows: public health administration, 124; public health nursing, thirty; public health laboratory, twelve; sanitary engineering, eight; vital statistics, one; industrial hygiene, three; and special studies, nineteen.

The 197 fellows came from a wide geographical area, which included thirty-four countries: seventy-nine were from the United States; sixteen from Canada; fifteen from India; thirteen from China; ten from Spain; eight from Japan; six from Yugoslavia; five each from Poland and Turkey; four from the Philippines; three from Puerto Rico; two each from Bulgaria, Czechoslovakia, Egypt, France, Greece, Jamaica, Mexico, Nicaragua, Portugal, and Rumania; and one each from the Bahama Islands, Brazil, Ceylon, England, Fiji, Finland, Germany, Honduras, Hungary, Italy, Java, Panama, and Venezuela.

Of the 197 public health fellows, 149 studied in



## Photograph Excised Here

Well-baby clinic at the First National Midwifery School, Peiping, China. The Rockefeller Foundation contributes toward the maintenance of this school.



## Photograph Excised Here

Anti-India Institute of Hygiene and Public Health, Calcutta. The Foundation contributed toward the purchase of land for this institute and toward the erecting and equipping of laboratories for advanced training of personnel.

the United States; five in the United States and Canada; two in the United States and England; two in the United States and various countries of Europe; one in the United States, Europe, and Asia; one in the United States and Puerto Rico; nineteen in Canada; eight in India; two in England; two in Germany; one in England and Germany; three in Germany and other countries of Europe; one in Ceylon; and one in Jamaica.

During 1933 the Foundation directed the programs of thirty-two fellows and seven visitors under the special Rockefeller Foundation appropriation for nursing fellowships and travel of nurse leaders. The thirty-two nursing fellows came from nine countries: fifteen from the United States, five from Spain, three each from Czechoslovakia and Siam, two from Hungary, and one each from Canada, England, Greece, and Poland. Of the nurse visitors, six were from the United States and one was from Belgium.

Since 1931 The Rockefeller Foundation has given financial aid to former fellows in Hungary who were handicapped in carrying out their special studies through shortage of state funds. Through the Foundation's aid, the State Hygienic Institute in Budapest has been enabled to obtain necessary apparatus and chemicals and to employ additional assistance in accomplishing important research work.



Photograph Excised Here

Group of student nurses, Uni-  
versity of Lyon School of Nursing

First graduating class of the  
State Central School of Nursing,  
Budapest.



Photograph Excised Here

New building of the University of Lyon School of Nursing, erected and  
equipped with the aid of The Rockefeller Foundation.

**Schools and Institutes of Hygiene and Public Health**

During 1933 The Rockefeller Foundation made available an appropriation of \$1,000,000 for the establishment of an Institute of Public Health in Tokyo, Japan. This institute is to be devoted to postgraduate education in public health and to urban and rural training of municipal and provincial health officials. It is intended to furnish ample facilities and equipment for the modern scientific education and practical training of public health officers and other public health personnel throughout Japan, and for the survey and study of practical public health problems. This new institute adds one more to the international list of similar institutions aided by The Rockefeller Foundation, which includes schools in London, Rome, Prague, Toronto, Baltimore, and Calcutta.

In addition to contributions toward establishing large central public health schools, the Foundation continues to provide aid, usually in small sums, to a number of other centers for training, especially of subordinate health personnel, including public health nurses. The following representative items may be mentioned. In Puerto Rico there has been tried a method of field training for public health nurses that fits local conditions and resources. Practical field training is given in three of the municipal

health departments which the Foundation has been aiding. During the period from July 1, 1931, to June 30, 1933, the number of nurses in the public health units of the island has increased from fifty-one to eighty-six.

In Central America the Foundation is defraying the expenses of travel of subordinate health personnel sent to observe field work and receive training in other sections. Four members of Central American health department staffs, two from Nicaragua and one each from Costa Rica and Salvador, received training in other Central American countries during 1933.

In Bogotá, Colombia, a School for Sanitary Inspectors has been organized after the pattern of a similar school which has for several years proved effective in Jamaica. The director of the Section of Rural Sanitation of Colombia visited Jamaica to familiarize himself with this school and its operation, and on his return assumed direction of the Bogotá school, which opened in November 1933, with twenty-five students. The courses given cover a study of insect-borne diseases, health education, and the technique of sanitary inspection.

The Malaria Experiment Station in Italy, which will eventually form part of the new Institute of Hygiene and Public Health at Rome, has as one of its functions the field training of

health officers in malaria control. This is especially important, since the Italian Government is rapidly extending antimosquito work to every part of Italy. A training school operated in connection with the station gives two courses in malariology, one for Italian doctors sent by the Health Department and by the School of Malariology, and another for foreign doctors sent by the League of Nations and foreign governments. There was an enrolment of seventy-nine students during 1933 and the school received thirty-five visitors.

Considerable aid has been given to the Johns Hopkins School of Hygiene and Public Health in instituting a field training and study area, known as the Health District, through which an endeavor will be made to improve all lines of public health work in the city of Baltimore. A population survey of the Eastern Health District of Baltimore which has been completed furnishes a suitable basis for statistical studies of morbidity, mortality, and social conditions. A field course in public health nursing has been inaugurated. Actual field experience is supplemented by demonstrations, conferences, and lectures. A new activity is the routine tuberculin testing of infants and preschool children brought to the infant welfare clinics. This affords extensive data on the prevalence of tuber-

culous infection at ages from six months to six years. Headquarters of the Health District have been transferred to a location close to the School of Hygiene.

Since 1923 the Foundation has maintained an active interest in the Warsaw State Institute and School of Hygiene in Poland. It has contributed toward construction and equipment costs, has lent the services of a professor, and has provided fellowships. In addition, emergency aid was given in 1932 and again in 1933. This assistance prevented a threatened reduction in the school staff and proved a considerable stimulus to activities. The staff of the institute is engaged in research as well as teaching.

2

## INTERNATIONAL HEALTH DIVISION

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Alphonse R. Dochez, M.D.	Waller S. Leathers, M.D.
John G. FitzGerald, M.D.	Frederick F. Russell, M.D.
Edwin O. Jordan, Sc.D.	Wilson G. Smillie, M.D.
	Lewis R. Thompson, M.D.

### Staff During 1933

#### DIRECTOR

Frederick F. Russell, M.D.

#### ASSOCIATE DIRECTORS

Mary Beard	Victor G. Heiser, M.D.
John A. Ferrell, M.D.	Hector H. Howard, M.D.
	Wilbur A. Sawyer, M.D.

#### ASSISTANT DIRECTORS

Lewis W. Hackett, M.D.	George K. Strode, M.D.
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#### FIELD DIRECTORS

Charles A. Bailey, M.D.	John F. Kendrick, M.D.
Marshall C. Balfour, M.D.	J. Austin Kerr, M.D.
Henry Beeuwkes, M.D.	Sylvester M. Lambert, M.D.
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Henry P. Carr, M.D.	Frank Milam, M.D.
Ralph K. Collins, M.D.	Daniel M. Molloy, M.D.
Platt W. Covington, M.D.	Hugo Muench, M.D.
Porter J. Crawford, M.D.	George C. Payne, M.D.
F. Elisabeth Crowell	Elsmere R. Rickard, M.D.
Nelson C. Davis, M.D. <sup>1</sup>	Paul F. Russell, M.D.
Walter C. Earle, M.D.	Fred L. Soper, M.D.
John E. Elmendorf, Jr., M.D.	Winfield C. Sweet, M.D.
John B. Grant, M.D.	Richard M. Taylor, M.D.
Rolla B. Hill, M.D.	Andrew J. Warren, M.D.
John L. Hydrick, M.D.	Benjamin E. Washburn, M.D.
William P. Jacocks, M.D.	Clifford W. Wells, M.D.
John H. Janney, M.D.	D. Bruce Wilson, M.D.
	Clark H. Yeager, M.D.

<sup>1</sup> Died October 20, 1933.

## SPECIAL MEMBERS

Joseph D. Aronson, M.D.	Wray Lloyd, M.D.
Marshall A. Barber	Estus H. Magoon
Claude H. Barlow, M.D.	Jerome J. Mieldazis
Johannes H. Bauer, M.D.	J. Harland Paul, M.D.
Alexander W. Burke, M.D.	John J. Phair, M.D.
Joseph C. Carter	George M. Saunders, M.D.
William J. Doyle, M.D.	J. Allen Scott
Brian R. Dyer	Raymond C. Shannon
Edward W. Flahiff, M.D.	Hugh H. Smith, M.D.
Eugen Haagen, M.D.	Warren K. Stratman-Thomas, M.D.
Meredith Hoskins, M.D.	Mary E. Tennant
Thomas P. Hughes	Max Theiler, M.D.
Stuart F. Kitchen, M.D.	Thomas B. Turner, M.D.
Frederick W. Knipe	Allen M. Walcott, M.D.
Henry W. Kumm, M.D.	Loring Whitman, M.D.
Daniel E. Wright	

## CONSULTANT

Eugene L. Opie, M.D.

## Status of Personnel During 1933

	<i>January 1</i>	<i>December 31</i>
<b>TOTAL STAFF.....</b>	76	74
Regular Members.....	46	45
Special Members.....	29	28
Part-time Consultants.....	1	1
<b>ON DUTY. TOTAL.....</b>	70	67
Regular Members.....	41	42
Special Members.....	29	25
<b>ON LEAVE. TOTAL.....</b>	4	5
Regular Members.....	3	2
Special Members.....	1	3
<b>ON STUDY LEAVE. TOTAL.....</b>	1	1
Regular Members.....	1	1
Special Members.....	0	0
<b>ON SICK LEAVE. TOTAL.....</b>	1	0
Regular Members.....	1	0
Special Members.....	0	0

## THE ROCKEFELLER FOUNDATION

## ADDITIONS TO THE STAFF DURING THE YEAR

## Regular Members

None

## Special Members

Joseph D. Aronson

John J. Phair

## LOSSES FROM THE STAFF DURING THE YEAR

## Regular Members

Nelson C. Davis<sup>1</sup>

## Special Members

Eugen Haagen

Joseph D. Aronson

Meredith Hoskins

## ON LEAVE AT THE END OF THE YEAR

## Regular Members

Lewis W. Hackett

Rolla B. Hill

## Special Members

Stuart F. Kitchen

Frederick W. Knipe

Jerome J. Mieldazis

## ON STUDY LEAVE AT THE END OF THE YEAR

## Regular Members

## Special Members

Ralph K. Collins

None

## ON SICK LEAVE AT THE END OF THE YEAR

## Regular Members

## Special Members

None

None

---

<sup>1</sup> Died October 20, 1933.



*\* Table of Expenditures for Public Health Work for the Years*

ACTIVITY, COUNTRY, AND STATE	July 1, 1913- Dec. 31, 1926	1927	1928	1929
<i>Grand Total</i>	\$29,732,303.72	\$3,839,959.40	\$3,074,732.83	\$3,561,891.09
State and Local Health Services . . . . .	1,633,311.42	474,442.73	600,519.77	659,704.25
Public Health Administration . . . . .				
Vital Statistics . . . . .	18,492.50	12,842.73	19,257.68	42,616.57
Epidemiology . . . . .	29,124.05	18,913.30	22,802.67	36,276.00
Public Health Laboratories . . . . .	142,676.05	27,391.79	25,489.57	21,678.48
Public Health Nursing . . . . .	111,549.31	20,831.69	13,525.09	17,945.78
Sanitary Engineering . . . . .	16,959.40	5,510.53	8,242.06	11,170.54
Other State Health Services . . . . .	2,578.20	1,454.41	30,052.16	26,189.19
Local Health Departments . . . . .	1,188,476.26	353,107.38	454,495.95	485,532.77
Bureaus for Study and Reform of Public Health Activities . . . . .	123,455.65	34,390.90	26,654.59	18,294.92
Health Organization of League of Nations . . . . .	571,399.77	124,321.20	123,497.81	123,905.27
Public Health Education	1,429,703.26	360,284.53	325,936.61	440,643.91
Control and Investigation of Specific Diseases . . . . .	8,937,451.32	672,110.20	558,064.41	593,285.61
Hookworm . . . . .	3,256,959.70	143,638.71	94,245.99	77,678.29
Malaria . . . . .	921,351.18	201,343.68	188,553.09	189,310.29
Yellow Fever . . . . .	2,369,415.40	326,085.60	266,783.21	314,288.37
Respiratory Diseases . . . . .		1,042.21	2,680.32	4,442.37
Verruga Peruana . . . . .			1,295.82	
Tuberculosis . . . . .	2,389,725.04		4,100.97	5,786.58
Epidemiological Studies . . . . .				
Sanitation . . . . .			405.01	1,466.61
Yaws . . . . .				
Undulant Fever . . . . .				
Public Health Surveys . . . . .				313.10
Field Service . . . . .	4,630,895.45	678,066.41	712,918.89	705,208.08
Miscellaneous . . . . .	202,693.98	16,988.76	19,279.89	12,031.36
Buildings, Equipment, and Endowment				
Schools and Institutes of Hygiene and Public Health . . . . .	12,296,637.67	1,414,262.06	734,515.45	1,027,112.61
Schools of Nursing . . . . .	30,210.85	99,483.51	.....	.....

\* Annual reports for 1929 and prior years included statements of expenditures with salaries and as a separate item.

## INTERNATIONAL HEALTH DIVISION

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*1913-1933 Inclusive, Covering All Activities*

1930	1931	1932	1933	Total
<b>\$2,644,178.73</b>	<b>\$3,247,551.91</b>	<b>\$2,484,318.01</b>	<b>\$2,382,206.70</b>	<b>\$50,967,142.39</b>
561,170.63	458,979.98	449,187.31	455,612.08	5,292,928.17
10,936.01	14,418.98	14,648.49	36,709.41	76,712.89
24,319.72	16,692.19	14,762.23	16,104.58	165,088.20
37,202.56	42,132.41	55,250.81	49,012.03	290,713.83
13,822.79	11,056.59	10,670.26	15,563.06	268,348.59
12,711.93	8,343.58	5,413.57	8,060.38	198,381.33
11,087.69	14,077.25	20,571.26	17,683.46	105,302.19
36,523.59	15,205.99	17,269.01	24,099.17	153,371.72
402,771.55	327,230.75	302,739.89	288,379.99	3,802,734.54
11,794.79	9,822.24	7,861.79	.....	232,274.88
.....	.....	.....	.....	943,124.05
382,862.97	378,331.50	389,646.15	308,716.66	4,016,125.59
626,026.55	805,941.73	897,775.46	876,656.82	13,967,312.10
55,396.04	52,452.43	59,480.28	43,274.30	3,783,125.74
154,478.13	172,702.11	167,154.69	206,173.11	2,201,066.28
366,648.42	440,632.39	539,573.11	508,146.95	5,131,573.45
8,765.36	8,989.07	1,153.26	.....	27,072.59
.....	.....	.....	.....	1,295.82
31,103.27	71,386.12	62,474.98	54,151.50	2,618,728.46
6,739.87	43,198.11	32,328.59	37,911.83	120,178.40
773.24	4,807.23	7,388.95	4,646.97	19,488.01
.....	.....	14,454.29	14,645.16	29,099.45
1,891.86	11,774.27	13,767.31	7,707.00	35,140.44
230.36	.....	.....	.....	543.46
705,511.22	743,053.77	730,717.00	732,418.86	9,638,789.68
14,503.63	13,147.10	11,992.09	8,802.28	299,439.09
.....	.....	.....	.....	.....
354,103.73	848,097.83	5,000.00	.....	16,679,729.35
.....	.....	.....	.....	129,694.36

expenses of field staff prorated to specific budgets. In this statement the cost of field service is reported

*Table of Expenditures for Public Health Work for the Years*

ACTIVITY, COUNTRY, AND STATE	July 1, 1913- Dec. 31, 1926	1927	1928	1929
State and Local Health Services.....	\$1,633,311.42	\$474,442.73	\$600,519.77	\$659,704.25
Public Health Administration.....	.....	.....	.....	.....
United States.....	.....	.....	.....	.....
Alabama.....	.....	.....	.....	.....
Arkansas.....	.....	.....	.....	.....
Georgia.....	.....	.....	.....	.....
Kentucky.....	.....	.....	.....	.....
Maryland.....	.....	.....	.....	.....
Michigan.....	.....	.....	.....	.....
Mississippi.....	.....	.....	.....	.....
North Carolina.....	.....	.....	.....	.....
North Dakota.....	.....	.....	.....	.....
South Carolina.....	.....	.....	.....	.....
Tennessee.....	.....	.....	.....	.....
Virginia.....	.....	.....	.....	.....
West Virginia.....	.....	.....	.....	.....
Foreign Countries.....	.....	.....	.....	.....
Central America.....	.....	.....	.....	.....
Costa Rica.....	.....	.....	.....	.....
Guatemala.....	.....	.....	.....	.....
Mexico.....	.....	.....	.....	.....
The East.....	.....	.....	.....	.....
Ceylon and India.....	.....	.....	.....	.....
India and Burma.....	.....	.....	.....	.....
Netherlands East Indies.....	.....	.....	.....	.....
Philippine Islands.....	.....	.....	.....	.....
West Indies.....	.....	.....	.....	.....
Jamaica.....	.....	.....	.....	.....
Puerto Rico.....	.....	.....	.....	.....
Vital Statistics.....	18,492.50	12,842.73	19,257.68	42,616.57
United States.....	16,911.31	9,234.97	7,656.16	16,593.29
Alabama.....	1,512.50	990.00	.....	.....
Arkansas.....	1,350.00	750.00	.....	.....
Georgia.....	400.00	.....	1,200.00	1,200.00
Iowa.....	2,100.00	1,500.00	.....	.....
Massachusetts.....	.....	.....	.....	.....
Mississippi.....	1,582.38	2,204.97	902.73	3,270.50
Missouri.....	.....	.....	.....	.....
Montana.....	3,750.00	1,250.00	.....	.....
New Mexico.....	.....	.....	600.00	2,400.00
Oklahoma.....	686.68	500.00	.....	.....
Oregon.....	.....	.....	.....	.....
South Carolina.....	.....	290.00	1,250.00	.....

\* Reports incomplete.

*1913-1933 Inclusive, Covering All Activities—Continued*

1930	1931	1932	1933	Total
<b>\$561,170.63</b>	<b>\$458,979.98</b>	<b>\$449,187.31</b>	<b>\$455,612.08</b>	<b>\$5,292,928.17</b>
<b>10,936.01</b>	<b>14,418.98</b>	<b>14,648.49</b>	<b>36,709.41</b>	<b>76,712.89</b>
.....	.....	3,420.83	23,982.45	27,403.28
.....	.....	.....	912.43	912.43
.....	.....	975.00	2,112.50	3,087.50
.....	.....	.....	2,625.00	2,625.00
.....	.....	683.33	6,800.00	7,483.33
.....	.....	.....	972.81	972.81
.....	.....	.....	1,295.97	1,295.97
.....	.....	.....	1,643.32	1,643.32
.....	.....	.....	*	.....
.....	.....	900.00	1,001.51	1,901.51
.....	.....	237.50	*2,497.29	2,734.79
.....	.....	625.00	1,500.00	2,125.00
.....	.....	.....	2,621.62	2,621.62
<b>10,936.01</b>	<b>14,418.98</b>	<b>11,227.66</b>	<b>12,726.96</b>	<b>49,309.61</b>
<b>2,116.45</b>	<b>4,272.72</b>	.....	<b>1,960.00</b>	<b>8,349.17</b>
<b>2,116.45</b>	<b>4,272.72</b>	.....	<b>1,960.00</b>	<b>1,960.00</b>
.....	.....	.....	*	6,389.17
.....	.....	.....	1,726.65	1,726.65
.....	.....	373.65	5,070.06	5,443.71
.....	.....	373.65	561.08	934.73
.....	.....	.....	*406.87	406.87
.....	.....	.....	2,793.41	2,793.41
.....	.....	.....	1,308.70	1,308.70
<b>8,819.56</b>	<b>10,146.26</b>	<b>10,854.01</b>	<b>3,970.25</b>	<b>33,790.08</b>
.....	.....	642.52	*1,973.36	2,615.88
<b>8,819.56</b>	<b>10,146.26</b>	<b>10,211.49</b>	<b>1,996.89</b>	<b>31,174.20</b>
<b>24,319.72</b>	<b>16,692.19</b>	<b>14,762.23</b>	<b>16,104.58</b>	<b>165,088.20</b>
<b>3,435.00</b>	<b>4,383.78</b>	<b>6,992.90</b>	<b>11,605.36</b>	<b>76,812.77</b>
.....	.....	.....	2,314.60	4,817.10
.....	.....	.....	.....	2,100.00
.....	.....	.....	1,307.50	4,107.50
.....	.....	.....	.....	3,600.00
1,960.00	2,989.54	3,120.00	1,720.00	9,709.54
.....	.....	900.00	1,800.00	10,660.58
.....	.....	.....	690.00	690.00
.....	.....	.....	.....	5,000.00
.....	.....	.....	.....	3,000.00
.....	.....	.....	.....	1,186.68
<b>375.00</b>	<b>187.50</b>	.....	.....	562.50
.....	.....	.....	1,304.49	2,844.49

*Table of Expenditures for Public Health Work for the Years*

ACTIVITY, COUNTRY, AND STATE	July 1, 1913- Dec. 31, 1926	1927	1928	1929
State and Local Health Services (Cont.)				
Vital Statistics (Cont.)				
United States (Cont.)				*
Tennessee.....	\$2,773.09	\$1,750.00	\$1,000.00	\$1,050.00
Texas.....	.....	.....	2,703.43	8,672.79
West Virginia.....	2,756.66	.....	.....	.....
Foreign Countries...	1,581.19	3,607.76	11,601.52	26,023.28
Europe.....	1,581.19	2,744.09	11,601.52	26,023.28
Bulgaria.....	.....	1,139.50	.....	.....
Denmark.....	1,581.19	1,604.59	1,608.31	2,401.95
France.....	.....	.....	.....	4,111.51
Poland.....	.....	.....	.....	.....
Rumania.....	.....	.....	.....	.....
Spain.....	.....	.....	.....	8,175.14
Yugoslavia.....	.....	.....	9,993.21	11,334.68
South America.....	.....	863.67	.....	.....
Colombia.....	.....	863.67	.....	.....
The East.....	.....	.....	.....	.....
India. Travancore	.....	.....	.....	.....
Epidemiology.....	29,124.05	18,913.30	22,892.67	36,276.00
United States.....	29,124.05	16,772.78	17,925.40	25,939.33
Alabama.....	9,555.98	3,977.77	.....	.....
Arizona.....	.....	.....	.....	.....
Georgia.....	.....	.....	.....	812.50
Iowa.....	.....	.....	.....	.....
Kansas.....	643.34	228.96	.....	.....
Kentucky.....	.....	.....	1,788.28	3,500.00
Louisiana.....	.....	1,930.25	.....	.....
Maryland.....	.....	.....	.....	.....
Massachusetts.....	.....	.....	.....	.....
Michigan.....	.....	.....	.....	.....
Mississippi.....	1,819.08	3,337.50	1,490.92	5,172.50
Missouri.....	.....	.....	.....	.....
Montana.....	.....	.....	2,625.00	3,500.00
New York.....	.....	.....	.....	.....
North Carolina.....	.....	.....	3,543.75	4,725.00
North Dakota.....	.....	.....	1,108.74	2,700.00
Rhode Island.....	2,191.47	854.58	.....	.....
South Carolina.....	193.75	775.00	3,175.00	2,500.00
South Dakota.....	1,142.32	1,275.00	.....	1,004.33
Tennessee.....	3,625.38	2,453.23	2,250.00	2,025.00
Utah.....	6,296.57	600.00	1,943.71	.....
Virginia.....	3,656.16	.....	.....	.....
Conference of epidemiologists.....	.....	1,340.49	.....	.....

\* Reports incomplete.

1913-1933 Inclusive, Covering All Activities—Continued

1930	1931	1932	1933	Total
\$1,100.00	\$1,206.74	\$2,972.90	\$2,468.77	\$14,321.50
.....	.....	.....	.....	11,376.22
.....	.....	.....	.....	2,756.66
20,884.72	12,308.41	7,769.33	4,499.22	88,275.43
20,884.72	12,308.41	7,769.33	4,355.40	87,267.94
.....	.....	.....	.....	1,139.50
789.48	402.72	.....	.....	8,388.24
.....	.....	.....	.....	4,111.51
11,764.18	8,581.63	4,592.61	*2,834.59	24,938.42
4,719.98	2,559.05	1,718.44	1,520.81	18,693.42
3,611.08	765.01	1,458.28	.....	27,162.26
.....	.....	.....	.....	863.67
.....	.....	.....	.....	863.67
.....	.....	.....	143.82	143.82
.....	.....	.....	*143.82	143.82
37,202.56	42,132.41	55,250.81	49,012.03	290,713.83
28,862.58	33,584.76	39,507.29	38,058.61	229,774.80
.....	.....	.....	.....	13,533.75
2,612.50	.....	1,612.50	3,225.00	7,450.00
.....	1,729.37	4,148.72	3,642.97	10,333.56
2,200.00	2,100.00	788.89	600.00	5,688.89
.....	.....	.....	.....	872.30
3,500.00	3,500.00	3,485.38	*3,150.00	18,923.66
.....	.....	.....	.....	1,930.25
.....	3,030.99	2,641.72	2,634.74	8,307.45
.....	.....	675.00	*625.00	1,300.00
.....	4,600.00	7,194.53	5,508.93	17,303.46
4,200.00	4,433.35	3,961.98	3,948.33	28,363.66
.....	.....	.....	1,044.02	1,044.02
3,500.00	3,500.00	3,393.81	3,066.98	19,585.79
340.00	541.64	.....	.....	881.64
.....	.....	.....	910.35	9,179.10
2,700.00	1,600.00	493.55	*198.12	8,800.41
.....	.....	.....	.....	3,046.05
2,100.00	900.50	300.00	.....	9,944.25
2,300.00	2,176.55	2,230.15	1,223.46	11,351.81
5,410.08	5,200.45	5,037.83	4,303.01	30,304.98
.....	271.91	3,543.23	3,977.70	8,840.28
.....	.....	.....	.....	11,449.00
.....	.....	.....	.....	1,340.49

*Table of Expenditures for Public Health Work for the Years*

ACTIVITY, COUNTRY, AND STATE	July 1, 1913- Dec. 31, 1926	1927	1928	1929
State and Local Health Services (Cont.)				
Epidemiology (Cont.)				
Foreign Countries...	\$.....	\$2,140.52	\$4,877.27	\$10,336.67
Canada.....	.....	.....	.....	876.93
Europe.....	.....	2,140.52	4,877.27	9,459.74
Austria.....	.....	.....	.....	.....
Czechoslovakia.....	.....	.....	.....	.....
Denmark.....	.....	2,140.52	4,877.27	5,355.91
Spain.....	.....	.....	.....	4,103.83
The East.....	.....	.....	.....	.....
India. Travancore.....	.....	.....	.....	.....
Public Health Laboratories	142,676.05	27,391.79	25,489.57	21,678.48
United States.....	98,266.62	16,387.39	12,757.31	9,456.49
Alabama.....	40,768.88	5,403.75	.....	.....
Arkansas.....	6,707.96	.....	.....	.....
Connecticut.....	2,175.00	.....	.....	.....
Delaware.....	1,500.00	.....	.....	.....
Florida.....	.....	.....	.....	.....
Georgia.....	.....	.....	.....	.....
Kansas.....	10,701.90	.....	.....	.....
Louisiana.....	.....	.....	444.43	.....
Maine.....	1,900.00	780.00	.....	.....
Mississippi.....	.....	.....	.....	3,753.99
Missouri.....	6,763.05	3,600.00	4,350.00	1,800.00
Montana.....	3,826.74	.....	.....	.....
Oregon.....	5,049.67	.....	.....	.....
South Carolina.....	798.92	.....	1,000.00	1,000.00
Tennessee.....	4,255.95	985.00	1,754.36	2,902.50
Texas.....	2,860.65	2,992.40	650.00	.....
Utah.....	7,543.92	2,626.24	3,058.52	.....
Virginia.....	3,198.65	.....	1,500.00	.....
Demonstrations...	215.33	.....	.....	.....
Foreign Countries...	44,409.43	11,004.40	12,732.26	12,221.99
Central America...	43,998.93	6,107.41	7,821.77	5,492.55
Costa Rica.....	9,687.70	175.00	.....	.....
Guatemala.....	7,345.87	1,268.24	4,446.99	492.55
Honduras.....	698.37	.....	.....	1,000.00
Nicaragua.....	21,546.30	4,664.17	3,374.78	4,000.00
Salvador.....	4,720.69	.....	.....	.....
Europe.....	.....	.....	.....	1,870.00
Hungary.....	.....	.....	.....	1,870.00
Rumania.....	.....	.....	.....	.....

\* Reports incomplete.

## INTERNATIONAL HEALTH DIVISION

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1913-1933 Inclusive, Covering All Activities—Continued

1930	1931	1932	1933	Total
\$8,339.98	\$8,547.65	\$15,743.52	\$10,953.42	\$60,939.03
1,654.32	1,229.72	4,695.82	4,731.08	13,187.87
6,685.66	7,317.93	10,954.70	6,021.32	47,457.14
.....	2,152.02	1,713.15	1,298.15	5,163.32
.....	.....	4,500.00	.....	4,500.00
5,374.54	5,165.91	4,741.55	4,723.17	32,378.87
1,311.12	.....	.....	.....	5,414.95
.....	.....	93.00	201.02	294.02
.....	.....	93.00	*201.02	294.02
13,822.79	11,056.59	10,670.26	15,563.06	268,348.59
7,035.83	4,559.39	2,954.05	10,096.22	161,513.30
.....	.....	.....	2,445.50	48,618.13
.....	.....	.....	.....	6,707.96
.....	.....	.....	.....	2,175.00
.....	.....	.....	.....	1,500.00
900.00	450.00	.....	.....	1,350.00
.....	.....	.....	3,697.00	3,697.00
.....	.....	.....	.....	10,701.90
.....	.....	.....	.....	444.43
.....	.....	.....	.....	2,680.00
3,600.00	1,575.00	350.00	2,100.00	11,378.99
.....	.....	.....	.....	16,513.05
.....	.....	.....	.....	3,826.74
.....	.....	.....	.....	5,049.67
600.00	600.00	600.00	266.66	4,865.58
1,935.83	1,934.39	2,004.05	1,587.06	17,359.14
.....	.....	.....	.....	6,503.05
.....	.....	.....	.....	13,228.68
.....	.....	.....	.....	4,698.65
.....	.....	.....	.....	215.33
6,786.96	6,497.20	7,716.21	5,466.84	106,835.29
1,000.00	600.00	944.62	182.02	66,147.30
.....	.....	150.00	157.02	10,169.72
.....	.....	290.45	.....	13,844.10
1,000.00	.....	.....	.....	2,698.37
.....	600.00	300.00	25.00	34,510.25
944.42	.....	204.17	.....	4,924.86
944.42	.....	1,185.36	676.59	4,676.37
.....	.....	1,185.36	676.59	2,814.42
.....	.....	.....	.....	1,861.95

*Table of Expenditures for Public Health Work for the Years*

ACTIVITY, COUNTRY, AND STATE	July 1, 1913- Dec. 31, 1926	1927	1928	1929
State and Local Health Services (Cont.)				
Public Health Laboratories (Cont.)				
Foreign Countries (Cont.)				
South America....	\$410.50	\$4,896.99	\$4,910.49	\$4,859.44
Colombia.....	410.50	4,896.99	4,910.49	4,859.44
West Indies.....	.....	.....	.....	.....
Puerto Rico.....	.....	.....	.....	.....
Public Health Nursing.	111,549.31	20,831.69	13,525.09	17,945.78
Europe.....	29,337.80	3,562.06	2,483.16	11,993.65
Denmark.....	.....	.....	.....	4,678.35
France.....	29,337.80	3,562.06	2,483.16	5,674.99
Hungary.....	.....	.....	.....	.....
Poland.....	.....	.....	.....	1,140.31
Yugoslavia.....	.....	.....	.....	500.00
South America....	82,211.51	17,269.63	11,041.93	5,952.13
Brazil.....	82,211.51	17,269.63	11,041.93	5,952.13
Nursing Films.....	.....	.....	.....	.....
Sanitary Engineering..	16,959.40	5,510.53	8,242.06	11,170.54
United States....	16,959.40	5,510.53	8,242.06	8,261.01
Alabama.....	1,447.85	1,334.12	.....	.....
Arizona.....	.....	.....	.....	.....
Colorado.....	2,000.00	.....	.....	.....
Connecticut....	375.00	.....	.....	.....
Idaho.....	3,178.67	1,600.00	1,599.89	800.00
Indiana.....	.....	.....	2,756.15	2,573.37
Iowa.....	58.33	349.98	.....	.....
Maine.....	1,050.00	350.00	.....	.....
Mississippi....	.....	.....	.....	.....
Missouri.....	1,418.43	.....	.....	.....
Montana.....	3,732.58	.....	.....	.....
North Dakota....	477.73	.....	536.02	1,500.00
Oregon.....	1,214.30	733.10	.....	.....
South Carolina....	.....	.....	3,350.00	2,500.00
South Dakota....	.....	.....	.....	887.64
Tennessee.....	375.18	1,143.33	.....	.....
Utah.....	1,631.33	.....	.....	.....
Foreign Countries..	.....	.....	.....	2,909.53
Central America..	.....	.....	.....	.....
Costa Rica and Nicaragua.....	.....	.....	.....	.....
Europe.....	.....	.....	.....	1,145.93
Greece.....	.....	.....	.....	.....
Poland.....	.....	.....	.....	1,145.93

\* Reports incomplete.

1913-1933 Inclusive, Covering All Activities—Continued

1930	1931	1932	1933	Total
\$4,842.54	\$4,897.55	\$4,817.16	\$3,777.77	\$33,412.44
4,842.54	4,897.55	4,817.16	3,777.77	33,412.44
.....	999.65	769.07	830.46	2,599.18
.....	999.65	769.07	*830.46	2,599.18
12,711.93	8,343.58	5,413.57	8,060.38	198,381.33
9,984.04	6,783.91	2,156.49	7,712.39	74,013.50
5,626.39	3,883.74	.....	1,468.45	15,656.93
2,705.88	.....	.....	.....	43,763.89
250.00	1,578.56	901.99	6,243.94	8,974.49
1,308.72	1,321.61	1,254.50	*.....	5,025.14
93.05	.....	.....	.....	593.05
2,727.89	1,559.67	2,605.07	.....	123,367.83
2,727.89	1,559.67	2,605.07	.....	123,367.83
.....	.....	652.01	347.99	1,000.00
11,087.69	14,077.25	20,571.26	17,683.46	105,302.19
5,861.85	5,993.04	7,209.82	8,815.82	66,853.53
.....	.....	.....	.....	2,781.97
.....	.....	.....	1,012.50	1,012.50
.....	.....	.....	.....	2,000.00
.....	.....	.....	.....	375.00
.....	.....	.....	.....	7,178.56
.....	.....	.....	.....	5,329.52
.....	.....	.....	.....	408.31
.....	.....	.....	.....	1,400.00
.....	.....	900.00	1,800.00	2,700.00
.....	.....	.....	.....	1,418.43
.....	.....	.....	.....	3,732.58
1,452.36	1,950.00	2,369.04	1,110.96	9,396.11
.....	.....	.....	.....	1,947.40
2,100.00	1,800.00	1,775.00	1,064.90	12,589.90
2,309.49	2,243.04	2,165.78	2,764.96	10,370.91
.....	.....	.....	1,062.50	2,581.01
.....	.....	.....	.....	1,631.33
5,225.84	8,084.21	13,361.44	8,867.64	38,448.66
.....	.....	3.76	144.97	148.73
.....	.....	3.76	144.97	148.73
2,566.34	6,899.81	8,177.27	7,542.62	26,331.97
.....	4,192.39	5,726.55	7,542.62	17,461.56
2,566.34	2,707.42	2,450.72	*.....	8,870.41

*Table of Expenditures for Public Health Work for the Years*

ACTIVITY, COUNTRY, AND STATE	July 1, 1913– Dec. 31, 1926	1927	1928	1929
State and Local Health Services (Cont.)				
Sanitary Engineering (Cont.)				
Foreign Countries (Cont.)				
The East.....	\$.....	\$.....	\$.....	\$1,763.60
Egypt.....	.....	.....	.....	.....
India.....	.....	.....	.....	1,763.60
Mysore.....	.....	.....	.....	1,763.60
Travancore.....	.....	.....	.....	.....
India and Burma.....	.....	.....	.....	.....
Other State Health Services.....	2,578.20	1,454.41	30,052.16	26,189.19
United States.....	.....	900.00	7,742.22	5,685.41
Florida.....	.....	.....	.....	.....
Illinois.....	.....	100.00	236.67	50.00
Iowa.....	.....	800.00	1,600.00	1,833.33
Nevada.....	.....	.....	.....	468.75
New York City.....	.....	.....	.....	.....
New York State.....	.....	.....	.....	.....
North Carolina.....	.....	.....	4,805.55	3,333.33
North Dakota.....	.....	.....	.....	.....
South Carolina.....	.....	.....	1,100.00	.....
Foreign Countries.....	2,578.20	554.41	22,309.94	20,503.78
Canada.....	577.93	.....	.....	.....
Europe.....	.....	.....	10,249.55	3,278.37
British Colonial Office.....	.....	.....	.....	.....
Bulgaria.....	.....	.....	704.69	.....
Hungary.....	.....	.....	9,206.71	1,973.19
Norway.....	.....	.....	.....	.....
Poland.....	.....	.....	338.15	1,305.18
South America.....	.....	.....	.....	.....
Colombia.....	.....	.....	.....	.....
Venezuela.....	.....	.....	.....	.....
The East.....	1,645.81	.....	11,469.42	16,533.54
Ceylon.....	.....	.....	.....	.....
India.....	.....	.....	.....	.....
Mysore.....	.....	.....	.....	.....
Travancore.....	.....	.....	.....	.....
Netherlands East Indies.....	.....	.....	11,469.42	16,533.54
Philippine Islands.....	1,645.81	.....	.....	.....
West Indies.....	354.46	554.41	590.97	691.87
Jamaica.....	354.46	554.41	590.97	691.87

\* Reports incomplete.

## INTERNATIONAL HEALTH DIVISION

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1913-1933 Inclusive, Covering All Activities—Continued

1930	1931	1932	1933	Total
\$2,659.50	\$1,184.40	\$5,180.41	\$1,180.05	\$11,967.96
.....	.....	2,352.33	*	2,352.33
2,659.50	1,184.40	2,828.08	1,180.05	9,615.63
2,659.50	1,184.40	1,988.10	803.70	8,399.30
.....	.....	839.98	.....	839.98
.....	.....	.....	376.35	376.35
36,523.59	15,205.99	17,269.01	24,099.17	153,371.72
18,325.43	6,618.25	6,423.21	4,247.20	49,941.72
.....	.....	1,350.00	675.00	2,025.00
.....	.....	.....	.....	386.67
.....	.....	.....	.....	4,233.33
750.00	750.00	750.00	375.00	3,093.75
17,250.00	1,750.00	.....	1,750.00	19,000.00
.....	1,000.00	2,000.00	1,750.00	4,750.00
.....	3,118.25	2,323.21	1,447.20	8,138.88
325.43	.....	.....	.....	7,214.09
.....	.....	.....	.....	1,100.00
18,198.16	8,587.74	10,845.80	19,851.97	103,430.00
.....	.....	.....	.....	577.93
6,124.98	3,932.35	5,484.38	2,501.28	31,570.91
.....	2,435.00	1,520.00	1,083.00	5,038.00
.....	.....	.....	.....	704.69
4,703.46	.....	2,630.72	*1,418.28	15,883.36
1,421.52	1,497.35	1,333.66	*	4,049.00
.....	.....	.....	.....	5,895.86
.....	.....	.....	13,237.99	13,237.99
.....	.....	.....	10,677.32	10,677.32
.....	.....	.....	2,560.67	2,560.67
9,889.84	2,484.39	3,629.05	1,797.33	47,449.38
.....	420.84	.....	.....	420.84
.....	141.92	1,403.08	1,797.33	3,342.33
.....	141.92	1,403.08	1,608.94	3,153.94
.....	.....	.....	*188.39	188.39
9,889.84	1,921.63	2,225.97	.....	42,040.40
2,183.34	2,171.00	1,732.37	2,315.37	1,645.81
2,183.34	2,171.00	1,732.37	2,315.37	10,593.79
				10,593.79

*Table of Expenditures for Public Health Work for the Years*

ACTIVITY, COUNTRY, AND STATE	July 1, 1913- Dec. 31, 1926	1927	1928	1929
State and Local Health Services (Cont.)				
Local Health Departments.....	\$1,188,476.26	\$353,107.38	\$454,495.95	\$485,532.77
United States.....	980,655.01	226,921.68	304,880.03	313,774.56
Alabama.....	79,491.19	5,969.07	7,337.80	25,862.46
Arizona.....	3,702.88	2,038.45	1,771.20	1,800.00
Arkansas.....	26,395.80	6,291.67	6,583.33	7,562.50
Colorado.....	4,375.00	2,000.00	2,000.00	1,000.00
Florida.....	1,759.83	.....	.....	.....
Georgia.....	15,220.85	3,961.03	5,924.57	10,067.57
Idaho.....	.....	.....	.....	375.00
Illinois.....	6,891.65	.....	.....	.....
Indiana.....	3,891.66	.....	.....	.....
Iowa.....	7,768.99	3,100.00	3,300.00	2,150.00
Kansas.....	36,961.72	2,525.00	2,343.76	3,541.67
Kentucky.....	87,634.45	11,892.46	11,744.10	10,737.22
Louisiana.....	56,329.39	7,464.69	7,979.57	6,417.22
Maryland.....	15,380.80	.....	.....	.....
Michigan.....	.....	.....	6,605.13	10,010.02
Minnesota.....	5,999.97	.....	.....	.....
Mississippi.....	79,196.25	13,389.00	11,554.18	20,294.88
Missouri.....	38,470.46	5,195.00	5,064.00	4,637.50
Montana.....	.....	.....	1,283.34	600.00
New Mexico.....	47,838.46	3,179.07	2,795.26	.....
North Carolina.....	57,942.57	5,000.00	.....	.....
Oklahoma.....	27,062.38	11,786.18	12,245.81	8,546.11
Oregon.....	31,119.93	9,077.41	5,795.18	4,350.00
South Carolina.....	80,413.26	9,802.26	11,108.94	14,700.00
South Dakota.....	11,348.59	1,312.50	1,698.25	594.51
Tennessee.....	71,246.65	12,565.67	16,595.12	16,093.75
Texas.....	54,219.64	3,245.23	1,150.00	100.00
Utah.....	7,299.05	4,434.80	3,687.50	750.00
Virginia.....	63,090.36	14,583.15	16,326.00	14,805.88
Washington.....	4,791.66	.....	.....	.....
West Virginia.....	48,528.14	15,258.61	16,374.38	15,274.47
Wyoming.....	6,283.43	856.80	890.73	.....
Mississippi Flood Area.....	.....	71,993.63	142,721.88	133,503.80
Arkansas.....	.....	7,443.28	37,186.11	35,601.84
Illinois.....	.....	.....	1,750.84	1,273.63
Kentucky.....	.....	6,404.93	19,414.39	19,965.14
Louisiana.....	.....	6,623.11	41,198.13	44,755.59
Mississippi.....	.....	6,639.55	13,969.72	17,385.55
Missouri.....	.....	1,354.86	4,198.28	1,960.00
Tennessee.....	.....	1,574.86	2,307.36	2,465.06
Training Station.....	.....	41,953.04	22,697.05	10,096.99

\* Reports incomplete.

## INTERNATIONAL HEALTH DIVISION

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1913-1933 Inclusive, Covering All Activities—Continued

1930	1931	1932	1933	Total
\$402,771.55	\$327,230.75	\$302,739.89	\$288,379.99	\$3,802,734.54
247,377.26	180,873.53	165,623.36	157,292.34	2,577,397.77
8,151.32	4,112.34	13,194.12	*23,173.81	167,292.11
2,045.82	7,291.66	8,125.00	7,458.33	24,920.81
		6,278.40	9,105.83	24,696.76
7,972.31	4,345.38	2,750.00	750.00	62,650.99
500.00	.....	.....	*1,426.77	9,875.00
9,649.05	7,086.96	5,359.46	3,000.00	3,186.60
2,062.50	1,200.00	1,200.00	*300.00	60,269.49
.....	.....	.....	.....	5,137.50
2,894.58	4,001.93	3,551.41	*2,504.16	6,891.65
5,052.05	2,925.00	788.89	600.00	3,891.66
9,799.58	5,975.00	7,091.32	10,234.37	54,738.09
2,981.16	1,000.00	5,515.30	10,515.30	155,108.50
	1,935.36	5,281.55	4,710.62	98,202.63
9,599.37	13,614.41	9,741.70	9,020.80	27,308.33
				58,591.43
17,824.22	9,899.91	12,568.95	13,947.65	5,999.97
5,850.00	4,500.00	4,262.50	3,700.00	178,675.04
1,200.00	1,200.00	1,270.00	1,125.00	71,679.46
.....	.....	.....	.....	6,678.34
5,120.83	1,383.34	4,867.14	9,846.63	53,812.79
		375.00	.....	77,656.34
16,608.33	10,425.00	7,683.33	8,936.47	66,519.65
				50,342.52
15,763.92	8,220.46	10,028.06	12,365.19	14,953.85
3,146.75	4,958.34	6,196.60	5,960.52	162,878.82
				78,977.08
9,389.80	6,204.55	5,891.87	10,393.39	16,171.35
				140,685.00
16,242.87	10,486.50	10,197.65	8,217.50	4,791.66
.....	.....	.....	.....	140,580.12
95,522.80	70,107.39	33,405.11	.....	8,030.96
24,271.29	18,317.51	7,263.96	.....	547,254.61
			.....	130,084.05
15,544.78	10,953.24	6,426.58	.....	3,024.47
30,629.47	20,257.61	9,446.88	.....	78,709.06
14,387.75	12,808.82	5,724.80	.....	152,910.79
725.62	160.72	.....	.....	70,916.19
750.00	500.00	250.00	.....	8,399.48
9,213.89	7,109.43	*4,292.89	.....	7,847.28
			.....	95,363.29

*Table of Expenditures for Public Health Work for the Years*

ACTIVITY, COUNTRY, AND STATE	July 1, 1913- Dec. 31, 1926	1927	1928	1929
State and Local Health Services (Cont.)				
Local Health Departments (Cont.)				
Foreign Countries..	\$207,821.25	\$126,185.70	\$149,615.92	\$171,758.21
Canada.....	60,875.36	15,199.57	26,138.45	38,806.84
Central America..	.....	.....	.....	.....
Costa Rica.....	.....	.....	.....	.....
Guatemala.....	.....	.....	.....	.....
Santa Rosa.....	.....	.....	.....	.....
Nicaragua.....	.....	.....	.....	.....
Panama.....	.....	.....	.....	.....
Europe.....	57,144.78	78,362.35	86,729.80	93,231.81
Austria.....	7,502.16	4,136.98	3,631.88	7,081.63
Bulgaria.....	.....	3,007.46	1,374.91	1,273.28
Czechoslovakia.	297.62	4,318.76	10,730.74	7,627.25
France.....	22,098.94	24,486.47	19,728.57	17,101.22
Hungary.....	498.52	500.00	5,675.90	10,716.28
Irish Free State.	.....	.....	5,675.80	10,195.82
Italy.....	.....	.....	.....	.....
Poland.....	26,747.54	27,912.68	19,912.00	23,669.70
Rumania.....	.....	.....	.....	.....
Spain.....	.....	.....	.....	15,566.63
Yugoslavia.....	.....	14,000.00	20,000.00	.....
Mexico.....	.....	.....	2,239.15	4,402.03
South America.....	88,830.46	27,934.56	27,673.62	16,770.99
Brazil.....	88,830.46	27,934.56	27,673.62	16,710.77
Paraguay.....	.....	.....	.....	60.22
The East.....	363.34	194.12	1,545.47	10,530.22
Ceylon.....	.....	144.10	166.56	.....
China, Shanghai	.....	.....	.....	6,869.68
Fiji.....	.....	.....	.....	.....
India.....	.....	.....	.....	3,168.91
Java.....	.....	.....	.....	.....
Philippine Islands.....	363.34	50.02	.....	491.63
Siam.....	.....	.....	1,378.91	.....
West Indies.....	607.31	4,495.10	5,289.43	8,016.32
Jamaica.....	.....	.....	579.27	2,784.26
Puerto Rico.....	607.31	4,495.10	4,710.16	5,232.06
Bureaus for Study and Reform of Public Health Activities.....	123,455.65	34,390.90	26,654.59	18,294.92
Czechoslovakia.....	70,710.44	7,594.47	.....	.....
France.....	29,253.25	12,212.76	11,932.79	11,794.97
Hungary.....	9,987.67	4,991.74	4,993.83	1,500.00
Poland.....	13,504.29	9,591.93	9,727.97	4,999.95

\* Reports incomplete.

## 1913-1933 Inclusive, Covering All Activities—Continued

1930	1931	1932	1933	Total
\$155,394.29	\$146,357.22	\$137,116.53	\$131,087.65	\$1,225,336.77
43,697.19	36,818.97	34,816.33	35,699.02	292,051.73
.....	510.00	.....	2,177.39	2,687.39
.....	.....	.....	262.39	262.39
.....	510.00	.....	.....	510.00
.....	.....	.....	40.00	40.00
79,080.36	77,628.14	78,160.49	46,710.42	597,048.15
7,509.94	5,156.00	5,143.02	2,555.87	42,717.48
.....	.....	.....	615.25	6,270.90
6,414.99	6,410.85	999.89	*.....	36,800.10
13,143.20	4,794.53	1,764.02	64.83	103,181.78
16,430.06	24,004.37	37,725.65	21,711.73	117,262.51
12,912.38	16,246.10	12,251.17	*3,026.12	60,307.39
.....	3,930.34	3,413.86	5,037.43	12,381.63
15,781.91	6,971.00	4,093.64	*.....	125,088.47
.....	4,927.85	3,977.61	3,865.69	12,771.15
6,887.88	5,187.10	8,791.63	9,833.50	46,266.74
.....	.....	.....	.....	34,000.00
4,672.60	9,794.52	7,793.57	7,248.11	36,149.98
3,683.15	.....	.....	.....	164,892.78
3,683.15	.....	.....	.....	164,832.56
.....	.....	.....	.....	60.22
13,120.88	10,337.24	11,333.11	17,954.51	65,378.89
.....	.....	.....	.....	310.66
5,809.50	2,307.68	.....	.....	14,986.86
.....	.....	3,676.78	4,323.66	8,000.44
6,410.76	5,205.14	5,500.26	*6,717.96	27,003.03
.....	.....	.....	5,407.77	5,407.77
900.62	2,824.42	2,156.07	1,505.12	8,291.22
.....	.....	.....	.....	1,378.91
11,140.11	11,268.35	5,013.03	21,298.20	67,127.85
5,435.18	5,799.25	2,877.80	2,308.96	19,784.72
5,704.93	5,469.10	2,135.23	18,989.24	47,343.13
.....	.....	.....	.....	.....
11,794.79	9,822.24	7,861.79	.....	232,274.88
.....	.....	.....	.....	78,304.91
11,794.79	9,822.24	7,861.79	*.....	94,672.59
.....	.....	.....	.....	21,473.24
.....	.....	.....	.....	37,824.14

*Table of Expenditures for Public Health Work for the Years*

ACTIVITY, COUNTRY, AND STATE	July 1, 1913– Dec. 31, 1926	1927	1928	1929
Health Organization of League of Nations....	\$571,399.77	\$124,321.20	\$123,497.81	\$123,905.27
Interchange of public health personnel....	342,804.29	49,817.98	51,206.90	49,830.39
Epidemiological Intelli- gence and Public Health Statistics Service, and Center of Public Health Docu- mentation .....	182,607.61	49,503.22	58,587.35	53,780.97
Epidemiological Intelli- gence Bureau in the Far East, Singapore.	39,449.40	25,000.00	13,703.56	20,293.91
Travel expenses of delegate to public health conference....	3,087.38	.....	.....	.....
Conference in Singa- pore.....	3,451.09	.....	.....	.....
Public Health Education.	1,429,703.26	360,284.53	325,936.61	440,643.91
Fellowships.....	1,095,712.18	262,109.47	209,078.69	328,126.24
Study and Training Courses and Travel of Visiting Scientists and Health Workers .	134,910.47	42,498.76	46,407.49	52,602.05
Training Stations....	28,908.68	12,702.46	25,214.71	8,514.60
United States.....	28,908.68	12,702.46	19,784.90	2,859.06
Alabama.....	28,908.68	6,024.80	11,795.11	.....
Michigan.....	.....	.....	.....	1,831.31
Ohio.....	.....	6,677.66	7,989.79	1,027.75
Johns Hopkins University.....	.....	.....	.....	.....
Foreign Countries...	.....	.....	5,429.81	5,655.54
Canada.....	.....	.....	.....	456.62
Colombia.....	.....	.....	.....	.....
India.....	.....	.....	.....	.....
Italy.....	.....	.....	5,429.81	5,198.92
Nigeria.....	.....	.....	.....	.....
Teaching of Hygiene in Medical Schools....	5,534.69	5,899.46	.....	.....
Committee of Assoc- iation of American Medical Colleges. Study.....	34.69	.....	.....	.....
Harvard Medical School. Prepara- tion of syllabus...	5,500.00	5,899.46	.....	.....

† Appropriations for 1930 and subsequent years were made direct by The Rockefeller Foundation.  
 \* Reports incomplete.

## 1913-1933 Inclusive, Covering All Activities—Continued

1930	1931	1932	1933	Total
\$t.....	\$.....	\$.....	\$.....	<b>\$943,124.05</b>
.....	.....	.....	.....	<b>493,659.56</b>
.....	.....	.....	.....	<b>344,479.15</b>
.....	.....	.....	.....	<b>98,446.87</b>
.....	.....	.....	.....	<b>3,087.38</b>
.....	.....	.....	.....	<b>3,451.09</b>
<b>382,862.97</b>	<b>378,331.50</b>	<b>389,646.15</b>	<b>308,716.66</b>	<b>4,016,125.59</b>
<b>287,157.19</b>	<b>279,294.14</b>	<b>252,868.68</b>	<b>*199,785.97</b>	<b>2,914,132.56</b>
<b>46,640.85</b>	<b>43,001.46</b>	<b>31,152.22</b>	<b>*21,501.87</b>	<b>418,715.17</b>
<b>14,675.86</b>	<b>19,771.69</b>	<b>32,536.29</b>	<b>50,837.72</b>	<b>193,162.01</b>
<b>6,466.69</b>	<b>2,723.00</b>	<b>8,832.88</b>	<b>27,657.08</b>	<b>109,934.75</b>
<b>6,466.69</b>	<b>2,723.00</b>	<b>1,909.00</b>	.....	<b>46,728.59</b>
.....	.....	.....	.....	<b>12,930.00</b>
.....	.....	.....	.....	<b>15,695.20</b>
<b>8,209.17</b>	<b>17,048.69</b>	<b>6,923.88</b>	<b>27,657.08</b>	<b>34,580.96</b>
<b>4,250.36</b>	<b>4,875.00</b>	<b>23,703.41</b>	<b>23,180.64</b>	<b>83,227.26</b>
.....	.....	.....	.....	<b>9,581.98</b>
.....	.....	.....	<b>180.08</b>	<b>180.08</b>
<b>3,958.81</b>	<b>2,982.56</b>	<b>50.66</b>	.....	<b>50.66</b>
.....	.....	<b>2,940.68</b>	<b>3,680.07</b>	<b>24,190.85</b>
.....	<b>9,191.13</b>	<b>20,712.07</b>	<b>19,320.49</b>	<b>49,223.69</b>
.....	.....	.....	.....	<b>11,434.15</b>
.....	.....	.....	.....	<b>34.69</b>
.....	.....	.....	.....	<b>11,399.46</b>

*Table of Expenditures for Public Health Work for the Years*

ACTIVITY, COUNTRY, AND STATE	July 1, 1913- Dec. 31, 1926	1927	1928	1929
Public Health Education (Cont.)				
Central Medical School for Native Medical Students, Suva, Fiji.	\$.....	\$9,660.00	\$25,752.59	\$20,867.30
First Midwifery School, Peiping, China.....	.....	.....	.....	1,982.51
Journal of Industrial Hygiene.....	.....	.....	.....	.....
Schools and Institutes of Hygiene and Pub- lic Health				
Maintenance.....	164,637.24	27,414.38	19,483.13	28,551.21
Brazil. São Paulo.	91,932.87	.....	.....	.....
England. London.	56,224.37	19,414.38	19,483.13	24,295.83
Hungary. Budapest	.....	3,680.00	.....	2,807.02
Norway. Oslo (School).....	.....	.....	.....	.....
Norway. Oslo (In- stitute).....	16,480.00	4,320.00	.....	1,448.36
Poland. Warsaw..	.....	.....	.....	.....
Yugoslavia. Zagreb	.....	.....	.....	.....
Schools of Nursing.....	.....	.....	.....	.....
University of Wash- ington, Seattle.....	.....	.....	.....	.....
Washington Univer- sity, St. Louis, Mo.	.....	.....	.....	.....
Control and Investigation of Specific Diseases....	8,937,451.32	672,110.20	558,064.41	593,285.61
Hookworm.....	3,256,959.70	143,638.71	94,245.99	77,678.29
Control.....	3,048,500.68	108,725.75	60,806.83	39,498.14
United States †.....	439,111.04	.....	.....	.....
Alabama.....	29,825.82	.....	.....	.....
Arkansas.....	1,520.03	.....	.....	.....
Georgia.....	37,561.08	.....	.....	.....
Kentucky.....	30,536.72	.....	.....	.....
Louisiana.....	6,309.34	.....	.....	.....
Mississippi.....	66,106.48	.....	.....	.....
North Carolina.	37,754.96	.....	.....	.....
South Carolina.	65,072.26	.....	.....	.....
Tennessee.....	54,649.32	.....	.....	.....
Texas.....	53,688.83	.....	.....	.....
Virginia.....	51,289.28	.....	.....	.....
County dispens- ary work in the South....	4,796.92	.....	.....	.....

† In September, 1917, the hookworm work in the Southern States began to be absorbed into the pro-  
states than in others. It was not possible to announce until the end of 1920 that in all of the states the  
for all efforts directed toward the relief and control of hookworm and other soil-borne diseases.

## 1913-1933 Inclusive, Covering All Activities—Continued

1930	1931	1932	1933	Total
\$15,388.56	\$6,531.64	\$621.58	\$.....	\$78,821.67
11,488.50	5,317.36	5,564.72	4,852.51	29,205.60
.....	.....	.....	3,000.00	3,000.00
7,512.01	17,848.64	56,996.91	25,238.59	347,682.11
.....	.....	26,879.20	10,243.89	91,932.87
2,122.56	8,066.01	6,310.56	4,781.12	156,540.80
1,277.85	2,353.08	.....	1,012.84	27,767.27
4,111.60	7,429.55	1,609.50	.....	4,643.77
.....	.....	12,996.92	.....	14,599.01
.....	.....	9,200.73	9,200.74	33,796.92
.....	6,566.57	9,905.75	3,500.00	18,401.47
.....	2,499.91	4,278.94	.....	19,972.32
.....	4,066.66	5,626.81	3,500.00	6,778.85
626,026.55	805,941.73	897,775.46	876,656.82	13,967,312.10
55,396.04	52,452.43	59,480.28	43,274.30	3,783,125.74
11,600.47	9,863.15	11,561.44	4,702.10	3,295,258.56
.....	.....	.....	.....	439,111.04
.....	.....	.....	.....	29,825.82
.....	.....	.....	.....	1,520.03
.....	.....	.....	.....	37,561.08
.....	.....	.....	.....	30,536.72
.....	.....	.....	.....	6,309.34
.....	.....	.....	.....	66,106.48
.....	.....	.....	.....	37,754.96
.....	.....	.....	.....	65,072.26
.....	.....	.....	.....	54,649.32
.....	.....	.....	.....	53,688.83
.....	.....	.....	.....	51,289.28
.....	.....	.....	.....	4,796.92

grams of the rapidly developing departments of health. The period of transition being longer in some county health departments would henceforth assume, as one of their regular functions, responsibility

Table of Expenditures for Public Health Work for the Years

ACTIVITY, COUNTRY, AND STATE	July 1, 1913- Dec. 31, 1926	1927	1928	1929
Control and Investigation of Specific Diseases (Cont.)				
Hookworm (Cont.)				
Control (Cont.)				
Foreign Countries.	\$2,609,389.64	\$108,725.75	\$60,806.83	\$39,498.14
Caribbean Area.	606,861.45	12,252.21	15,090.67	14,206.28
British Guiana	73,957.52	.....	.....	.....
Dutch Guiana	60,073.91	.....	.....	.....
West Indies..	472,830.02	12,252.21	15,090.67	14,206.28
Antigua....	15,870.14	.....	.....	.....
Grenada...	39,307.32	.....	.....	.....
Haiti.....	10,095.96	.....	.....	.....
Jamaica ..	96,924.07	9,648.49	6,436.07	3,403.28
Puerto Rico	93,057.69	2,603.72	8,654.60	10,803.00
St. Lucia..	82,009.02	.....	.....	.....
St. Vincent	22,889.48	.....	.....	.....
Trinidad ..	101,645.23	.....	.....	.....
Administration.....	11,031.11	.....	.....	.....
Central America	619,927.67	9,919.77	6,618.89	2,772.17
Costa Rica...	122,104.32	.....	.....	.....
Guatemala...	124,275.00	3,138.04	1,740.21	.....
Honduras....	11,662.70	.....	.....	.....
Nicaragua....	109,780.90	.....	.....	.....
Panama.....	205,120.49	6,781.73	4,878.68	2,772.17
Salvador....	45,366.89	.....	.....	.....
Administration	1,617.37	.....	.....	.....
Europe.....	6,586.57	1,517.39	3,155.86	2,806.91
Spain.....	6,586.57	1,517.39	3,155.86	2,806.91
Mexico.....	53,683.93	6,855.39	.....	.....
South America..	929,342.91	39,723.68	20,939.45	13,999.15
Brazil.....	781,056.12	.....	.....	.....
Colombia...	100,385.76	24,762.95	14,813.01	13,725.26
Paraguay....	47,901.03	12,436.98	5,544.72	273.89
Venezuela....	.....	2,523.75	581.72	.....
The East.....	392,987.11	38,457.31	15,001.96	5,713.63
Australia....	94,578.73	.....	.....	.....
British North Borneo....	4,782.10	.....	.....	.....
Ceylon....	49,149.94	.....	.....	.....
China.....	8,099.03	.....	.....	.....
Egypt.....	16,769.60	.....	.....	4,692.69
Fiji Islands..	15,595.94	.....	.....	.....
India.....	24,423.79	4,258.40	3,547.80	.....
Java.....	18,395.95	8,471.49	.....	.....
Mauritius....	4,315.60	.....	.....	.....
Sarawak....	.....	584.42	.....	.....

## 1913-1933 Inclusive, Covering All Activities—Continued

1930	1931	1932	1933	Total
\$11,600.47	\$9,863.15	\$11,561.44	\$4,702.10	\$2,856,147.52
.....	.....	.....	.....	648,410.61
.....	.....	.....	.....	73,957.52
.....	.....	.....	.....	60,073.91
.....	.....	.....	.....	514,379.18
.....	.....	.....	.....	15,870.14
.....	.....	.....	.....	39,307.32
.....	.....	.....	.....	10,095.96
.....	.....	.....	.....	116,411.91
.....	.....	.....	.....	115,119.01
.....	.....	.....	.....	82,009.02
.....	.....	.....	.....	22,889.48
.....	.....	.....	.....	101,645.23
.....	.....	.....	.....	11,031.11
.....	.....	.....	.....	639,238.50
.....	.....	.....	.....	122,104.32
.....	.....	.....	.....	129,153.25
.....	.....	.....	.....	11,662.70
.....	.....	.....	.....	109,780.90
.....	.....	.....	.....	219,553.07
.....	.....	.....	.....	45,366.89
.....	.....	.....	.....	1,617.37
2,015.61	213.05	.....	.....	16,295.39
2,015.61	213.05	.....	.....	16,295.39
.....	.....	.....	.....	60,539.32
6,981.08	5,472.45	11,561.44	.....	1,028,020.16
6,981.08	5,472.45	10,803.54	.....	781,056.12
.....	.....	757.90	.....	176,944.05
.....	.....	.....	.....	66,156.62
.....	.....	.....	.....	3,863.37
2,603.78	4,177.65	.....	4,702.10	463,643.54
.....	.....	.....	.....	94,578.73
.....	.....	.....	.....	4,782.10
.....	.....	.....	.....	49,149.94
.....	.....	.....	.....	8,099.03
2,603.78	4,177.65	.....	4,098.23	32,341.95
.....	.....	.....	.....	15,595.94
.....	.....	.....	603.87	32,833.86
.....	.....	.....	.....	26,867.44
.....	.....	.....	.....	4,315.60
.....	.....	.....	.....	584.42

*Table of Expenditures for Public Health Work for the Years*

ACTIVITY, COUNTRY, AND STATE	July 1, 1913- Dec. 31, 1926	1927	1928	1929
Control and Investigation of Specific Diseases (Cont.)				
Hookworm (Cont.)				
Control (Cont.)				
Foreign Countries (Cont.)				
The East (Cont.)				
Seychelles Islands.....	\$18,276.69	\$.....	\$.....	\$.....
Siam.....	95,246.08	12,279.42	5,120.44	1,020.94
South Pacific Islands....	230.04	800.00	.....	.....
Straits Settlements.....	16,612.02	12,063.58	6,333.72	.....
Administration	26,511.60	.....	.....	.....
Investigations.....	133,364.00	34,881.55	33,375.05	38,180.15
Alabama.....	15,687.49	3,839.46	6,226.18	8,021.32
Mississippi.....	.....	.....	.....	.....
Brazil.....	1,227.31	.....	.....	.....
Ceylon.....	460.91	.....	.....	.....
Egypt.....	.....	5,236.79	.....	4,244.06
India.....	.....	.....	.....	.....
Western Samoa (hookworm and yaws).....	.....	.....	.....	.....
Research in life history of hookworm eggs and larvae.....	54,677.84	7,876.34	7,152.85	6,817.13
Research on carbon tetrachloride	20,496.78	17,928.96	19,996.02	19,097.64
Study of methods of diagnosing hookworm disease.....	1,302.52	.....	.....	.....
Study of hookworm in the pig.	515.93	.....	.....	.....
Uncinariasis Commission to Orient	38,995.22	.....	.....	.....
Surveys.....	40,127.82	.....	.....	.....
United States.....	28,309.39	.....	.....	.....
Georgia.....	28,309.39	.....	.....	.....
Foreign Countries.	11,818.43	.....	.....	.....
Central America	2,982.17	.....	.....	.....
British Honduras.....	2,982.17	.....	.....	.....

\* Reports incomplete.

*1913-1933 Inclusive, Covering All Activities—Continued*

1930	1931	1932	1933	Total
\$.....	\$.....	\$.....	\$.....	\$18,276.69
.....	.....	.....	.....	113,666.88
.....	.....	.....	.....	1,030.04
.....	.....	.....	.....	35,009.32
.....	.....	.....	.....	26,511.60
43,795.57	42,589.28	47,918.84	38,572.20	412,676.64
9,734.28	16,160.58	14,638.80	*11,404.95	85,713.06
.....	.....	1,557.70	1,792.30	3,350.00
.....	.....	.....	.....	1,227.31
.....	.....	.....	.....	460.91
4,562.43	5,381.80	4,122.89	4,443.72	27,991.69
.....	.....	102.04	2,551.67	2,653.71
.....	.....	4,117.91	.....	4,117.91
6,268.61	4,661.98	3,526.31	3,142.62	94,123.68
23,230.25	16,384.92	19,853.19	15,236.94	152,224.70
.....	.....	.....	.....	1,302.52
.....	.....	.....	.....	515.93
.....	.....	.....	.....	38,995.22
.....	.....	.....	.....	40,127.82
.....	.....	.....	.....	28,309.39
.....	.....	.....	.....	28,309.39
.....	.....	.....	.....	11,818.43
.....	.....	.....	.....	2,982.17
.....	.....	.....	.....	2,982.17

*Table of Expenditures for Public Health Work for the Years*

ACTIVITY, COUNTRY, AND STATE	July 1, 1913- Dec. 31, 1926	1927	1928	1929
Control and Investigation of Specific Diseases (Cont.)				
Hookworm (Cont.)				
Surveys (Cont.)				
Foreign Countries (Cont.)				
South America..	\$1,984.82	\$.....	\$.....	\$.....
Colombia....	1,984.82	.....	.....	.....
The East.....	841.65	.....	.....	.....
British Solo-mon Islands	841.65	.....	.....	.....
West Indies....	6,009.79	.....	.....	.....
Barbadoes...	515.04	.....	.....	.....
Cayman Islands.....	222.93	.....	.....	.....
Dominica....	930.14	.....	.....	.....
Jamaica.....	1,671.82	.....	.....	.....
Montserrat				
Nevis....	322.42	.....	.....	.....
Puerto Rico..	525.52	.....	.....	.....
Santo Domingo....	388.09	.....	.....	.....
St. Kitts....	1,007.92	.....	.....	.....
Tobago.....	425.91	.....	.....	.....
Miscellaneous.....	34,967.20	31.41	64.11	.....
Conferences of health officers...	7,552.87	.....	.....	.....
Motion picture film on hook-worm disease...	4,545.62	31.41	64.11	.....
Thymol for distribution to field stations.....	15,476.21	.....	.....	.....
Salvador				
Portable house and office....	6,623.04	.....	.....	.....
Loss from earthquake.....	406.46	.....	.....	.....
Dutch Guiana				
Care and storage of motor boat.	363.00	.....	.....	.....
Malaria.....	921,351.18	201,343.68	188,553.09	189,310.29
Control.....	682,085.25	157,255.10	155,587.51	154,109.42
United States....	552,659.28	55,596.92	34,534.83	28,988.30
Alabama....	39,250.07	7,540.95	.....	.....
Arkansas....	33,736.47	.....	.....	.....

## 1913-1933 Inclusive, Covering All Activities—Continued

1930	1931	1932	1933	Total
\$.....	\$.....	\$.....	\$.....	\$1,984.82
.....	.....	.....	.....	1,984.82
.....	.....	.....	.....	841.65
.....	.....	.....	.....	841.65
.....	.....	.....	.....	6,009.79
.....	.....	.....	.....	515.04
.....	.....	.....	.....	222.93
.....	.....	.....	.....	930.14
.....	.....	.....	.....	1,671.82
.....	.....	.....	.....	322.42
.....	.....	.....	.....	525.52
.....	.....	.....	.....	388.09
.....	.....	.....	.....	1,007.92
.....	.....	.....	.....	425.91
.....	.....	.....	.....	35,062.72
.....	.....	.....	.....	7,552.87
.....	.....	.....	.....	4,641.14
.....	.....	.....	.....	15,476.21
.....	.....	.....	.....	6,623.04
.....	.....	.....	.....	406.46
.....	.....	.....	.....	363.00
154,478.13	172,702.11	167,154.69	206,173.11	2,201,066.28
120,805.21	112,062.79	103,801.34	40,922.84	1,526,629.46
15,396.07	12,114.22	6,932.14	9,692.08	715,913.84
.....	.....	.....	.....	46,791.02
.....	.....	.....	.....	33,736.47

*Table of Expenditures for Public Health Work for the Years*

ACTIVITY, COUNTRY, AND STATE	July 1, 1913— Dec. 31, 1926	1927	1928	1929
Control and Investiga- tion of Specific Dis- eases (Cont.)				
Malaria (Cont.)				
Control (Cont.)				
United States (Cont.)				
Florida.....	\$1,125.00	\$.....	\$.....	\$.....
Georgia.....	17,672.23	2,755.04	5,443.28	6,675.00
Illinois.....	5,472.24	.....	.....	.....
Louisiana.....	55,921.15	3,642.04	2,860.36	1,468.40
Mississippi.....	184,140.14	12,749.59	12,232.64	11,748.88
Missouri.....	13,193.00	.....	.....	.....
North Carolina.....	50,092.59	4,555.60	.....	.....
South Carolina.....	67,032.97	10,800.00	5,800.00	4,200.00
Tennessee.....	21,025.04	4,108.34	1,500.00	.....
Texas.....	16,158.25	.....	.....	.....
Virginia.....	47,840.13	9,445.36	6,698.55	4,896.02
Foreign Countries.	129,425.97	101,658.18	121,052.68	125,121.12
Central America	6,931.48	.....	.....	.....
Costa Rica....	.....	.....	.....	.....
Guatemala....	.....	.....	.....	.....
Nicaragua....	6,931.48	.....	.....	.....
Panama.....	.....	.....	.....	.....
Europe.....	46,267.83	73,127.74	98,303.98	108,488.75
Albania.....	.....	.....	7,239.57	.....
Bulgaria.....	.....	.....	84,691.03	8,515.39
Italy.....	46,267.83	73,127.74	94,311.75	.....
Spain.....	.....	.....	6,373.38	5,661.61
South America..	75,750.02	28,041.28	21,766.31	12,222.50
Argentina....	22,540.66	18,978.73	11,040.37	6,933.88
Brazil.....	49,957.84	9,062.55	10,026.58	4,825.81
Colombia....	.....	.....	.....	.....
Ecuador....	3,251.52	.....	.....	.....
Venezuela....	.....	.....	699.36	462.81
The East.....	.....	.....	.....	.....
India.....	.....	.....	.....	.....
West Indies....	476.64	489.16	982.39	4,409.87
Grenada....	.....	.....	.....	.....
Puerto Rico..	476.64	489.16	982.39	4,409.87
Investigations and Surveys.....	222,073.64	44,088.58	32,965.58	35,200.87
United States....	60,917.97	21,958.60	13,925.58	5,764.65
Alabama.....	.....	214.31	378.52	.....
Florida.....	.....	.....	.....	.....
Georgia.....	26,031.55	.....	.....	.....
Louisiana....	205.17	.....	.....	.....

## 1913-1933 Inclusive, Covering All Activities—Continued

1930	1931	1932	1933	Total
\$ 3,500.00	\$ 3,345.63	\$150.00 3,079.88	\$1,500.00 3,062.50	\$2,775.00 45,533.56 5,472.24
1,585.32	1,050.00	600.00	.....	67,127.27
8,310.75	6,718.59	3,102.26	5,129.58	244,132.43
.....	.....	.....	.....	13,193.00
.....	.....	.....	.....	54,648.19
.....	.....	.....	.....	87,832.97
.....	.....	.....	.....	26,633.38
.....	.....	.....	.....	16,158.25
2,000.00	1,000.00	.....	.....	71,880.06
<b>105,409.14</b>	<b>99,948.57</b>	<b>96,869.20</b>	<b>31,230.76</b>	<b>810,115.62</b>
1,500.00	4,093.94	4,934.14	3,115.00	20,574.56
1,500.00	1,500.00	1,500.00	1,200.00	5,700.00
.....	.....	539.20	.....	539.20
.....	.....	583.14	40.00	7,554.62
.....	2,593.94	2,311.80	1,875.00	6,780.74
<b>97,131.46</b>	<b>89,189.13</b>	<b>73,693.70</b>	<b>12,365.97</b>	<b>598,568.56</b>
.....	9,555.75	10,404.33	12,365.97	32,326.05
15,507.50	17,035.42	17,397.04	.....	65,694.92
79,130.20	57,106.43	41,580.01	.....	476,214.99
2,493.76	5,491.53	4,312.32	.....	24,332.60
61.95	.....	.....	5,623.50	143,465.56
.....	.....	.....	.....	59,493.64
.....	.....	.....	.....	73,872.78
.....	.....	.....	3,485.35	3,485.35
.....	.....	.....	.....	3,251.52
61.95	.....	.....	2,138.15	3,362.27
.....	.....	1,338.42	2,361.18	3,699.60
.....	.....	1,338.42	2,361.18	3,699.60
<b>6,715.73</b>	<b>6,665.50</b>	<b>16,902.94</b>	<b>7,765.11</b>	<b>44,407.34</b>
211.00	612.36	1,798.16	.....	2,621.52
6,504.73	6,053.14	15,104.78	7,765.11	41,785.82
<b>33,672.92</b>	<b>60,639.32</b>	<b>63,353.35</b>	<b>165,250.27</b>	<b>657,244.53</b>
2,948.34	16,470.43	19,814.46	17,863.06	159,663.09
.....	13,471.27	16,938.51	11,943.84	592.83
.....	.....	.....	.....	42,353.62
.....	.....	.....	.....	26,031.55
.....	.....	.....	.....	205.17

*Table of Expenditures for Public Health Work for the Years*

ACTIVITY, COUNTRY, AND STATE	July 1, 1913– Dec. 31, 1926	1927	1928	1929
Control and Investigation of Specific Diseases (Cont.)				
Malaria (Cont.)				
Investigations and Surveys (Cont.)				
United States (Cont.)				
Maryland.....	\$2,927.74	\$.....	\$.....	\$.....
Mississippi.....	2,875.44	.....	.....	.....
North Carolina.....	16,145.37	15,185.86	8,626.57	1,891.67
Studies at Johns Hopkins School of Hygiene and Public Health.....	10,234.89	4,061.55	3,670.49	2,623.39
Studies at Rocke- feller Institute	.....	.....	.....	.....
Studies at Uni- versity of Chicago.....	2,497.81	2,496.88	1,250.00	1,249.59
Foreign Countries	161,155.67	22,129.98	19,040.00	29,436.22
Europe.....	43,722.55	16,208.94	12,241.93	12,664.52
Albania.....	.....	.....	.....	.....
Austria.....	4,483.99	.....	.....	.....
Bulgaria.....	.....	.....	.....	.....
France. Cor- sica.....	8,643.90	5,267.94	5,374.70	5,594.28
Greece.....	.....	.....	.....	.....
Italy.....	23,343.64	.....	.....	.....
Italy and Ger- many.....	.....	.....	.....	.....
Netherlands.....	.....	5,092.20	6,867.23	4,912.43
Portugal.....	.....	.....	.....	.....
Spain.....	7,251.02	5,848.80	.....	.....
Yugoslavia.....	.....	.....	.....	2,157.81
Central America				
Panama.....	.....	.....	.....	.....
South America..	38,287.48	2,522.90	.....	2,949.38
Argentina.....	1,965.39	.....	.....	.....
Brazil.....	36,322.09	.....	.....	.....
Colombia.....	.....	.....	.....	.....
Colombia anopheline survey.....	.....	.....	.....	2,949.38
Venezuela.....	.....	2,522.90	.....	.....

\* Reports incomplete.

*1913-1933 Inclusive, Covering All Activities—Continued*

1930	1931	1932	1933	Total
\$.....	\$.....	\$.....	\$.....	\$2,927.74
.....	.....	.....	.....	2,875.44
.....	.....	.....	.....	41,849.47
950.00	.....	.....	.....	21,540.32
.....	.....	.....	3,186.31	3,186.31
1,998.34	2,999.16	2,875.95	2,732.91	18,100.64
30,724.58	44,168.89	43,538.89	147,387.21	497,581.44
21,194.77	30,895.74	30,241.06	127,632.80	294,802.31
.....	1,000.00	4,000.00	4,403.73	9,403.73
.....	.....	.....	.....	4,483.99
.....	.....	.....	29,043.15	29,043.15
3,387.57	401.16	.....	.....	28,669.55
9,933.28	17,590.43	16,634.49	27,262.68	71,420.88
.....	1,832.53	1,933.36	53,741.65	80,851.18
.....	2,346.99	2,996.61	2,805.75	8,149.35
6,036.57	5,920.91	4,676.60	4,705.84	38,211.78
.....	.....	.....	2,395.64	2,395.64
.....	.....	.....	3,274.36	16,374.18
1,837.35	1,803.72	.....	.....	5,798.88
.....	.....	150.00	*599.35	749.35
.....	1,019.18	3,498.32	.....	48,277.26
.....	.....	.....	.....	1,965.39
.....	.....	1,581.43	.....	36,322.09
.....	.....	.....	.....	1,581.43
.....	1,019.18	1,916.89	.....	2,949.38
.....	.....	.....	.....	5,458.97

*Table of Expenditures for Public Health Work for the Years*

ACTIVITY, COUNTRY, AND STATE	July 1, 1913- Dec. 31, 1926	1927	1928	1929
Control and Investigation of Specific Diseases (Cont.)				
Malaria (Cont.)				
Investigations and Surveys (Cont.)				
Foreign Countries (Cont.)				
The East.....	\$24,701.74	\$3,398.14	\$5,052.26	\$9,906.00
India.....	.....	.....	452.38	3,808.26
Palestine....	2,936.89	638.30	400.16	.....
Philippine Is- lands.....	21,764.85	2,759.84	4,199.72	6,097.74
West Indies....	54,443.90	.....	1,745.81	3,916.32
Jamaica.....	.....	.....	1,745.81	837.65
Puerto Rico..	54,443.90	.....	.....	.....
Grenada, an- opheline survey....	.....	.....	.....	3,078.67
Miscellaneous....	17,192.29	.....	.....	.....
Conference of ma- alaria workers...	2,431.33	.....	.....	.....
Motion picture film	10,522.77	.....	.....	.....
Entomological studies in the field.....	4,238.19	.....	.....	.....
Yellow Fever.....	2,369,415.40	326,085.60	266,783.21	314,288.37
Control.....	2,015,239.94	153,397.74	84,692.28	131,752.26
Brazil.....	1,286,112.21	153,397.74	84,692.28	131,752.26
Colombia and Venezuela.....	73,730.37	.....	.....	.....
Countries border- ing on Caribbean littoral and Ama- zon valley.....	14,920.82	.....	.....	.....
Ecuador.....	91,646.65	.....	.....	.....
Mexico and Cen- tral America...	432,482.48	.....	.....	.....
Peru.....	116,347.41	.....	.....	.....
Investigations and Surveys.....	335,926.19	170,361.26	180,085.93	180,595.49
Bolivia.....	.....	.....	.....	.....
Ecuador.....	.....	.....	.....	.....
Paraguay.....	.....	.....	.....	.....
Peru.....	.....	.....	.....	.....
West Africa.....	127,394.26	160,746.72	151,268.55	108,968.04

\* Reports incomplete.

## INTERNATIONAL HEALTH DIVISION

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*1913-1933 Inclusive, Covering All Activities—Continued*

1930	1931	1932	1933	Total
\$8,592.59	\$11,132.99	\$9,135.56	\$6,898.50	\$78,817.78
1,401.50	756.79	452.80	.....	6,871.73
.....	.....	.....	.....	3,975.35
7,191.09	10,376.20	8,682.76	6,898.50	67,970.70
937.22	1,120.98	513.95	12,256.56	74,934.74
937.22	856.22	513.95	748.29	5,639.14
.....	.....	.....	11,508.27	65,952.17
.....	264.76	.....	.....	3,343.43
.....	.....	.....	.....	17,192.29
.....	.....	.....	.....	2,431.33
.....	.....	.....	.....	10,522.77
.....	.....	.....	.....	4,238.19
366,648.42	440,632.39	539,573.11	508,146.95	5,131,573.45
179,904.18	260,684.09	380,453.58	350,000.00	3,556,124.07
179,904.18	260,684.09	380,453.58	350,000.00	2,826,996.34
.....	.....	.....	.....	73,730.37
.....	.....	.....	.....	2
.....	.....	.....	.....	14,920.82
.....	.....	.....	.....	91,646.65
.....	.....	.....	.....	432,482.48
.....	.....	.....	.....	116,347.41
186,431.87	179,248.30	157,919.53	158,046.95	1,548,615.52
.....	.....	4,688.33	6,836.30	11,524.63
.....	.....	.....	*387.16	387.16
.....	.....	3,485.03	*9,148.45	12,633.48
106,319.95	69,725.53	46,768.21	*37.00	37.00
			50,809.19	822,000.45

*Table of Expenditures for Public Health Work for the Years*

ACTIVITY, COUNTRY, AND STATE	July 1, 1913- Dec. 31, 1926	1927	1928	1929
Control and Investigation of Specific Diseases (Cont.)				
Yellow Fever (Cont.)				
Investigations and Surveys (Cont.)				
Yellow fever com- missions.....	\$153,598.20	\$.....	\$.....	\$.....
Vaccine and serum	27,654.00	5,142.89	2,141.08	.....
Research and training.....	27,279.73	4,471.65	14,892.76	24,321.68
Laboratory at Bahia, Brazil...	.....	.....	11,783.54	47,305.77
Pasteur Institute, Paris.....	.....	.....	.....	.....
Surveys.....	18,249.27	2,326.60	2,005.00	1,940.62
Miscellaneous.....	18,249.27	2,326.60	2,005.00	1,940.62
History of Yellow Fever.....	18,249.27	2,326.60	2,005.00	1,940.62
Respiratory Diseases..	.....	1,042.21	2,680.32	4,442.37
Verruga Peruana.....	.....	.....	1,295.82	.....
Tuberculosis.....	2,389,725.04	.....	4,100.97	5,786.58
United States.....	.....	.....	.....	.....
Alabama.....	.....	.....	.....	.....
Tennessee.....	.....	.....	.....	.....
Cornell University	.....	.....	.....	.....
Henry Phipps In- stitute, Univer- sity of Pennsyl- vania.....	.....	.....	.....	.....
Foreign Countries..	2,389,725.04	.....	4,100.97	5,786.58
Europe.....	2,389,725.04	.....	.....	.....
Austria.....	.....	.....	.....	.....
France.....	2,389,725.04	.....	.....	.....
Inauguration of work....	18,671.74	.....	.....	.....
Departmental organization	210,690.31	.....	.....	.....
Public health visiting....	369,320.58	.....	.....	.....
Educational division...	510,308.01	.....	.....	.....
Medical divi- sion.....	786,989.01	.....	.....	.....
Contingent fund.....	12,428.58	.....	.....	.....

*1913-1933 Inclusive, Covering All Activities—Continued*

1930	1931	1932	1933	Total
\$.....	\$.....	\$.....	\$.....	\$153,598.20
.....	.....	.....	.....	34,937.97
32,498.35	61,641.10	64,718.30	59,459.81	289,283.38
47,612.31	47,881.67	38,259.66	28,079.56	220,922.51
.....	.....	.....	3,289.48	3,289.48
1.26	.....	.....	.....	1.26
312.37	700.00	1,200.00	100.00	26,833.86
312.37	700.00	1,200.00	100.00	26,833.86
8,765.36	8,989.07	1,153.26	.....	27,072.59
.....	.....	.....	.....	1,295.82
31,103.27	71,386.12	62,474.98	54,151.50	2,618,728.46
20,000.00	40,000.00	40,886.97	24,878.00	125,764.97
.....	.....	.....	2,593.76	2,593.76
.....	.....	16,867.69	9,685.44	26,553.13
.....	.....	4,019.28	12,598.80	16,618.08
20,000.00	40,000.00	20,000.00	.....	80,000.00
.....	.....	.....	.....	.....
11,103.27	31,386.12	21,588.01	29,273.50	2,492,963.49
.....	.....	.....	3,609.46	2,393,334.50
.....	.....	.....	3,609.46	3,609.46
.....	.....	.....	.....	2,389,725.04
.....	.....	.....	.....	18,671.74
.....	.....	.....	.....	210,690.31
.....	.....	.....	.....	369,320.58
.....	.....	.....	.....	510,308.01
.....	.....	.....	.....	786,989.01
.....	.....	.....	.....	12,428.58

*Table of Expenditures for Public Health Work for the Years*

ACTIVITY, COUNTRY, AND STATE	July 1, 1913- Dec. 31, 1926	1927	1928	1929
Control and Investigation of Specific Diseases (Cont.)				
Tuberculosis (Cont.)				
Foreign Countries (Cont.)				
Europe (Cont.)				
France (Cont.)				
Postgraduate tuberculosis courses....	\$5,044.15	\$.....	\$.....	\$.....
National Com- mittee....	44,635.62	.....	.....	.....
Central ad- ministration	431,637.04	.....	.....	.....
West Indies.				
Jamaica.....	.....	.....	4,100.97	5,786.58
Epidemiological Stud- ies.....	.....	.....	.....	.....
United States.....	.....	.....	.....	.....
Alabama.....	.....	.....	.....	.....
Massachusetts.....	.....	.....	.....	.....
Tennessee.....	.....	.....	.....	.....
Virginia.....	.....	.....	.....	.....
Foreign Countries.....	.....	.....	.....	.....
Europe.....	.....	.....	.....	.....
Austria, Eisenstadt	.....	.....	.....	.....
Mexico.....	.....	.....	.....	.....
West Indies.....	.....	.....	.....	.....
Puerto Rico (Anemia in- vestigations)	.....	.....	.....	.....
Sanitation.....	.....	.....	405.01	1,466.61
Field studies of bored-hole latrines	.....	.....	405.01	1,466.61
Ceylon.....	.....	.....	.....	.....
Cook Islands.....	.....	.....	.....	.....
India.....	.....	.....	405.01	1,466.61
Philippine Islands.....	.....	.....	.....	.....
Yaws Study.....	.....	.....	.....	.....
Jamaica.....	.....	.....	.....	.....
Western Samoa (See Hookworm)	.....	.....	.....	.....
Undulant Fever.....	.....	.....	.....	.....
France.....	.....	.....	.....	.....

1913-1933 Inclusive, Covering All Activities—Continued

1930	1931	1932	1933	Total
\$.....	\$.....	\$.....	\$.....	\$5,044.15
.....	.....	.....	.....	44,635.62
.....	.....	.....	.....	431,637.04
11,103.27	31,386.12	21,588.01	25,664.04	99,628.99
6,739.87	43,198.11	32,328.59	37,911.83	120,178.40
6,739.87	19,273.66	22,584.03	34,777.47	83,375.03
.....	.....	.....	4,265.95	4,265.95
.....	.....	1,632.07	2,883.91	4,515.98
3,823.39	11,603.50	9,215.41	15,124.28	39,766.58
2,916.48	7,670.16	11,736.55	12,503.33	34,826.52
.....	23,924.45	9,744.56	3,134.36	36,803.37
.....	.....	.....	1,267.39	1,267.39
.....	.....	.....	1,267.39	1,267.39
.....	1,274.97	2,174.28	1,866.97	5,316.22
.....	22,649.48	7,570.28	.....	30,219.76
.....	22,649.48	7,570.28	.....	30,219.76
773.24	4,807.23	7,388.95	4,646.97	19,488.01
773.24	4,807.23	7,388.95	4,646.97	19,488.01
.....	1,392.85	3,398.83	.....	4,791.68
.....	.....	893.19	4,108.00	5,001.19
773.24	743.88	327.90	538.97	4,255.61
.....	2,670.50	2,769.03	.....	5,439.53
.....	.....	14,454.29	14,645.16	29,099.45
.....	.....	14,454.29	14,645.16	29,099.45
1,891.86	11,774.27	13,767.31	7,707.00	35,140.44
1,891.86	11,774.27	13,767.31	7,707.00	35,140.44

*Table of Expenditures for Public Health Work for the Years*

ACTIVITY, COUNTRY, AND STATE	July 1, 1913- Dec. 31, 1926	1927	1928	1929
Control and Investigation of Specific Diseases (Cont.)				
Public Health Surveys	\$.....	\$.....	\$.....	\$313.10
India. Travancore.	.....	.....	.....	313.10
Field Service.....	4,630,895.45	628,066.41	712,918.89	705,208.08
Salaries.....	2,921,239.23	409,170.41	438,117.88	441,997.31
Commutation.....	313,125.47	46,028.06	49,113.13	44,782.55
Travel.....	985,556.29	159,993.69	159,004.67	154,593.72
Medical examination..	4,030.20	718.00	400.00	527.00
Insurance and retire- ment.....	330,448.75	42,851.84	48,316.82	49,919.86
Bonding.....	25,554.60	3,541.03	2,873.75	2,763.03
Automobiles.....	9,444.69	1,333.60	Cr. 572.35	.....
Drugs for conserving health of field staff..	514.17	23.18	1.22	54.76
Training of staff mem- bers.....	*1,484.45			
Brazil. Central office.	39,197.90	14,406.60	15,663.77	10,569.85
The East. Office of the director.....	299.70	.....	.....	.....
Miscellaneous.....	202,693.98	16,988.76	19,279.89	12,031.36
Field equipment and supplies.....	71,441.08	13,486.60	14,694.95	6,802.02
Pamphlets and charts.	50,228.51	1,549.04	4,072.07	4,699.43
Express, freight, and exchange.....	Cr. 135,009.25	1,523.22	575.44	455.58
Hookworm and malaria films donated or lent	1,129.94	429.90	Cr. 62.57	74.33
Surveys and exhibits..	129,006.46	.....	.....	.....
Library.....	1,844.12	.....	.....	.....
Investigation of pow- dered milk.....	1,278.60	.....	.....	.....
Paris conference on In- ternational Nomen- clature of Causes of Death.....	615.30	.....	.....	.....
Compilation of mining sanitary code.....	203.18	.....	.....	.....
Smallpox vaccine for Vera Cruz, Mexico..	165.62	.....	.....	.....
Plans for laboratory at Nictheroy, Brazil....	429.98	.....	.....	.....
Adviser in medical edu- cation.....	8,535.46	.....	.....	.....

\* Expenditures in subsequent years charged to Fellowships.

## INTERNATIONAL HEALTH DIVISION

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1913-1933 Inclusive, Covering All Activities—Continued

1930	1931	1932	1933	Total
\$230.36	\$.....	\$.....	\$.....	\$543.46
230.36	.....	.....	.....	543.46
705,511.22	743,053.77	730,717.00	732,418.86	9,638,789.68
454,920.53	501,013.35	501,530.55	496,647.30	6,164,636.56
42,042.98	43,748.03	41,786.14	45,246.84	625,873.20
152,637.39	151,563.62	134,759.93	134,530.91	2,032,640.22
514.25	730.20	1,000.00	926.41	8,846.06
46,524.09	44,080.20	50,196.52	53,758.10	666,096.18
2,955.14	1,918.37	1,143.86	1,309.30	42,059.08
.....	.....	300.00	.....	10,505.94
.....	.....	.....	.....	593.33
.....	.....	.....	.....	1,484.45
5,916.84	.....	.....	.....	85,754.96
.....	.....	.....	.....	299.70
14,503.63	13,147.10	11,992.09	8,802.28	299,439.09
5,389.48	5,926.08	6,920.81	3,819.32	128,480.34
8,250.00	6,820.76	4,699.83	4,885.88	85,205.52
864.15	400.26	371.45	97.08	Cr. 130,722.07
.....	.....	.....	.....	1,571.60
.....	.....	.....	.....	129,006.46
.....	.....	.....	.....	1,844.12
.....	.....	.....	.....	1,278.60
.....	.....	.....	.....	615.30
.....	.....	.....	.....	203.18
.....	.....	.....	.....	165.62
.....	.....	.....	.....	429.98
.....	.....	.....	.....	8,535.46

*Table of Expenditures for Public Health Work for the Years*

ACTIVITY, COUNTRY, AND STATE	July 1, 1913- Dec. 31, 1926	1927	1928	1929
Miscellaneous (Cont.)				
Investigation of sewage disposal in rural homes.....	\$10,311.51	\$.....	\$.....	\$.....
Philippine hospital ship	44,000.00	.....	.....	.....
Medical Commission to Brazil.....	18,513.47	.....	.....	.....
Buildings, Equipment, and Endowment				
Schools and Institutes of Hygiene and Pub- lic Health.....	12,296,637.67	1,414,262.06	734,515.45	1,027,112.61
United States.....	9,446,622.05	137,250.00	49,500.00	990,000.00
Harvard Univer- sity.....	2,350,534.25	137,250.00	49,500.00	990,000.00
Johns Hopkins University.....	7,096,087.80			
Foreign Countries...	2,850,015.62	1,277,012.06	685,015.45	37,112.61
Brazil.....	50,495.40	23,987.00	117,264.88	.....
Bahia.....	3,595.40			
São Paulo.....	46,900.00	23,987.00	117,264.88	.....
Bulgaria. Sofia ..				
Canada. Toronto	425,000.00	12,500.00	250,000.00	.....
Czechoslovakia.				
Prague.....	381,559.33	95,054.50	189,212.08	31,192.90
Denmark. Co- penhagen.....	198,833.61			
England. London	1,154,628.53	969,783.48	.....	.....
Hungary. Bud- apest.....	40,000.00	60,297.54	43,648.49	1,047.71
Italy. Rome.....				
Norway. Oslo...	86,050.00	100,626.54	.....	.....
Poland. Warsaw.	292,500.00	.....	.....	.....
Trinidad. St. Au- gustine.....	9,736.25	4,872.00	4,890.00	4,872.00
Turkey. Angora.				
Yugoslavia.....	211,212.50	9,891.00	80,000.00	.....
Belgrade.....	33,950.00			
Zagreb.....	177,262.50	9,891.00	.....	.....
Schools of Nursing....	30,210.85	99,483.51	.....	.....
D. Anna Nery School of Nursing, Brazil.	30,210.85	99,483.51	.....	.....

## INTERNATIONAL HEALTH DIVISION

159

1913-1933 Inclusive, Covering All Activities—Continued

1930	1931	1932	1933	Total
\$.....	\$.....	\$.....	\$.....	\$10,311.51
.....	.....	.....	.....	44,000.00
.....	.....	.....	.....	18,513.47
<b>354,103.73</b>	<b>848,097.83</b>	<b>5,000.00</b>	.....	<b>16,679,729.35</b>
.....	.....	.....	.....	<b>10,623,372.05</b>
.....	.....	.....	.....	3,527,284.25
<b>354,103.73</b>	<b>848,097.83</b>	<b>5,000.00</b>	.....	<b>7,096,087.80</b>
.....	.....	.....	.....	<b>6,056,357.30</b>
.....	.....	.....	.....	<b>191,747.28</b>
.....	.....	.....	.....	<b>3,595.40</b>
<b>89,710.69</b>	.....	.....	.....	<b>188,151.88</b>
.....	<b>600,000.00</b>	.....	.....	<b>89,710.69</b>
<b>107,024.29</b>	.....	.....	.....	<b>1,287,500.00</b>
.....	.....	.....	.....	<b>804,043.10</b>
.....	.....	.....	.....	<b>198,833.61</b>
.....	.....	.....	.....	<b>2,124,412.01</b>
<b>52,368.75</b>	<b>243,097.83</b>	.....	.....	<b>144,993.74</b>
.....	.....	.....	.....	<b>295,466.58</b>
.....	.....	.....	.....	<b>186,676.54</b>
.....	.....	.....	.....	<b>292,500.00</b>
<b>5,000.00</b>	<b>5,000.00</b>	<b>5,000.00</b>	.....	<b>39,370.25</b>
<b>100,000.00</b>	.....	.....	.....	<b>180,000.00</b>
.....	.....	.....	.....	<b>221,103.50</b>
.....	.....	.....	.....	<b>33,950.00</b>
.....	.....	.....	.....	<b>187,153.50</b>
.....	.....	.....	.....	<b>129,694.36</b>
.....	.....	.....	.....	<b>129,694.36</b>



## **THE MEDICAL SCIENCES**



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## THE MEDICAL SCIENCES

### Brief Analysis of Appropriations

For the advancement of knowledge in the medical sciences The Rockefeller Foundation during 1933 appropriated \$1,173,853.50. A good start was made in furthering a program of specific concentration in certain selected fields within the broad domain of the medical sciences. The two fields chosen for special attention were psychiatry and public health teaching. For the support of research projects in these disciplines there was appropriated the sum of \$308,900.

Most of the funds made available in 1933, however, went to the support of projects undertaken before the program of special concentration in limited fields was embarked upon. A total of \$759,953.50 was appropriated, chiefly for the furtherance of medical education and research in China (\$619,350) and for the completion of work undertaken elsewhere (\$140,603.50).

As in former years development of the general field of the medical sciences was encouraged through the provision of fellowships, administered either directly by The Rockefeller Foundation or indirectly through national agencies. In this connection \$45,000 was appropriated, \$30,000 to the National Research Council in the

United States and \$15,000 to the Medical Research Council of Great Britain. During the year a special research aid fund of \$60,000 was provided for emergency grants to institutions toward the salaries and research expenses of a limited number of eminent displaced European scholars.

**Programs of Specific Concentration  
Psychiatry**

**The Johns Hopkins University School of Medicine  
Research in Psychiatry**

Under its present program for the development of psychiatry the Foundation gives three main types of assistance: (1) scholarships to recruit personnel, (2) grants in aid of competent and established workers, and (3) capital grants for endowment or long-term maintenance of institutions or departments active in the general field of psychiatry or in closely related fields.

To the Johns Hopkins University School of Medicine a grant of \$80,000 was made in 1933 for support over a four-year period of the research program of the Department of Psychiatry. This aid falls within the second of the categories mentioned above. It is a grant in aid of investigative work already under way.

The laboratories of the Department of Psychiatry at the Johns Hopkins University School

of Medicine are under the general direction of Dr. Adolf Meyer, who has associated with him a group of investigators including Dr. Curt P. Richter and Dr. W. Horsley Gantt. Dr. Richter has made special studies of the rhythmic behavior of the stomach and of the sex functions of the rat; of the production of diabetes insipidus; and of the vegetative centers of the thalamus. He has also carried out investigations on sleep and on neuromuscular fatigue. Dr. Gantt, after six years with Professor Ivan Pavlov at Leningrad, began in 1929 the development at Baltimore of a special laboratory for the study of conditioned reflexes. The introduction of a new technique has already yielded some very interesting results. The grant by The Rockefeller Foundation is intended to supplement departmental funds and to assure the continuation of the investigations begun by Dr. Richter and Dr. Gantt.

**University College, London**

**Researches of Dr. A. V. Hill**

Early in 1932 the Foundation granted to University College, in London, the sum of \$16,400, for constructing on the roof of the physiology building additional laboratories for work in biophysics under the direction of Archibald V. Hill, honorary professor of physiology at Uni-

versity College, and Foulerton professor of physiology of the Royal Society. Professor Hill has for a number of years been engaged in research in the field of biophysics. Recently he has been devoting the major part of his efforts to experiments on the physical aspects of nerve conduction.

The additional facilities which the Foundation grant has provided include a special room for physical chemistry and vapor measurements, a laboratory for metabolism experiments and gas analysis, and rooms for workers and for instrument making and testing. This expansion frees the present quarters for continuation of nerve-heat experiments and provides a room in which photographic records can be measured and calculations made. It will also give space for co-operative research on clinical problems from the biophysical angle and facilitate research work in the field of neurophysiology.

#### Washington University. School of Medicine

The School of Medicine of Washington University, in St. Louis, Missouri, received from the Foundation an appropriation of \$58,500 in support, over a five-year period, of investigations in nerve physiology to be carried out by Dr. George H. Bishop, who has been engaged in work in this field at the school for a number of years. In

collaboration with members of other departments of the school, valuable advances have been made in the study of nerve physiology. Owing to the development during the past fifteen years of extremely delicate and accurate instruments for recording differences in electric potential, a large field has been opened for the study of the nature of the nerve impulse. Good facilities are available in equipment, clinical material, and accommodations.

Based on the fundamental investigations already completed, it is now proposed to undertake a study of the nerve function *in vivo*, involving correlation of the techniques of neuro-anatomy, physiology, psychology, surgery, and biochemistry. The program will be carried out in cooperation with scientific workers from various other departments of the school.

#### Harvard Medical School and Massachusetts General Hospital. Psychiatry

Among the most serious handicaps to progress in teaching and research in psychiatry are the heavy burden of the disposition and custodial care of large numbers of patients, the isolation of asylums both geographically and intellectually from the teaching facilities in other preclinical and clinical branches of medicine, the neglect of the study of mental phases of diseases found in large general hospitals, the inadequacy of facili-

ties and auxiliary personnel in clinics devoted to the study of psychiatric patients, and the aversion of patients to being classified or treated as mentally diseased.

The Harvard Medical School and the Massachusetts General Hospital are now undertaking to bring psychiatry into close relation with other branches of medicine. It is proposed that a thirteen-bed psychiatric division be created at the Massachusetts General Hospital, to be staffed by the Harvard Medical School, with Dr. Stanley Cobb, professor of neuropathology, as chief. The staff of the medical school as well as the hospital administration is eager to give greater emphasis to mental phenomena throughout the medical curriculum and to study nervous functions and aberrations in a more intensive and scientific way.

The school offers special advantages for such a joint undertaking. Its departments of Anatomy and Physiology provide exceptional scientific facilities for the training of psychiatrists and neurologists. The association with the Massachusetts General Hospital of a psychiatric hospital under the same board of trustees will make available an excellent reservoir of cases for study. There is, moreover, an active psychiatric outpatient clinic at the Massachusetts General Hospital. Toward the support in 1934 of the joint

program of research and teaching in psychiatry the Foundation made an appropriation of \$80,000.

### Public Health Teaching

#### Dalhousie University. Development of Teaching of Public Health and Preventive Medicine

The support given by The Rockefeller Foundation in past years to Dalhousie University, in Halifax, Nova Scotia, has included \$200,000 for the building and equipment of a dispensary and public health center. This public health center has been of exceptional value to the Faculty of Medicine in providing facilities for the study of disease in early stages and for prompt preventive measures. Use of the center has increased from 6,883 visits in 1924-25 to over 30,000 visits in 1932-33. Partial support for the activities of the center has been secured from the city of Halifax and from the province of Nova Scotia.

In 1933 the Foundation appropriated \$44,000 to Dalhousie University for the development of teaching in public health and preventive medicine over a five-year period beginning September 1, 1933, the funds to be available under certain conditions, which include raising locally a similar amount for the same purpose. The object of the grant is to strengthen teaching in public health through epidemiological field work and

through increased utilization of bacteriological and clinical facilities already possessed by the medical faculty. The immediate purpose is to give every student a clear idea of active preventive measures and familiarity with public health procedures.

#### Research Aid Grants

##### **Psychiatry and Public Health Teaching**

In 1933 the sum of \$30,000 was appropriated by the Foundation to be used for grants in aid of research in its specific fields of concentration in the medical sciences—psychiatry and public health teaching.

#### Former Programs

##### **Medical Education in China**

In China The Rockefeller Foundation has constructed and equipped a modern school for medical education, the Peiping Union Medical College. To meet past pledges to this school and also in aid of other projects in medical education in China the Foundation appropriated during 1933 a total of \$619,350.

In 1928 there were pledged to the China Medical Board, Inc., certain sums for maintenance, to be paid annually. The amount due in 1933 was \$149,500, and an appropriation covering this amount was made. Furthermore, there was appropriated to the China Medical Board,



Photograph Excised Here

Dalhousie Health Clinic, toward the building and equipping of which the Foundation contributed.

Inc., for maintenance of the Peiping Union Medical College during the year July 1, 1934, to June 30, 1935, the sum of \$398,000.

The Foundation has been cooperating with the Medical School of Shantung Christian University, Tsinan, China, since 1916. Two appropriations were made to this school during 1933, one of \$17,000 toward its maintenance during the year 1933-34, and one of \$8,600 toward maintenance during 1934-35. These appropriations complete the Foundation's program of aid to this institution.

A grant of \$7,500 was made for research aid in the medical sciences in China. This fund is expended at the discretion of The Rockefeller Foundation's representative in China and is used chiefly to provide investigators in Chinese hospitals with instruments and other laboratory supplies.

For fellowships and grants in aid in China, an appropriation of \$29,000 was made to the Peiping Union Medical College. Of this sum \$20,000 was allocated for the use of members of the staff for study abroad, and \$9,000 to provide fellowships and grants in aid for young Chinese physicians wishing to pursue graduate studies at Peiping Union Medical College.

An appropriation of \$9,750 was made to the Chinese Medical Association toward its expenses



Photograph Excised Here

New pathology laboratory Chulalongkorn University Medical School Bangkok Thailand constructed with the aid of The  
Rockefeller Foundation

over a period of three and one-half years beginning October 15, 1933.

#### Research Projects

During 1933 appropriations totaling \$26,803.50 were made to the University of Rochester, New York, for research in dental pathology, and an appropriation of \$25,000 was made to Yale University for research in the same field. These grants represent the fulfilment of engagements entered into in 1928 in connection with a five-year program for the study of dental pathology at Rochester and Yale Universities.

Reference has been made in previous Foundation reports to important research on the common cold carried out at Columbia University under the direction of Dr. A. R. Dochez. This research has brought out new facts which indicate the desirability of enlarging the study to include parallel investigations on the causative agent of influenza. An appropriation of \$6,000, available over a two-year period, was made for this purpose in 1933.

At the Central Institute for the Deaf, St. Louis, Missouri, which is affiliated with Washington University, a program of research in teacher training has for some years received aid from the General Education Board. Under this support one member of the staff, Dr. R. Lorente

de No, has made very promising investigations in the anatomy and physiology of the auditory nerve. The Rockefeller Foundation appropriated \$2,600 toward these investigations over a period ending June 30, 1935.

#### Other Projects

In 1928 The Rockefeller Foundation pledged a contribution of \$100,000 over a five-year period for the organization of extension work in medicine at the Albany Medical College. The program includes (1) postgraduate courses for physicians, designed especially for practitioners isolated in rural districts; (2) surveys of the need for physicians in particular sections; and (3) study of the most economical methods for meeting such need. Sums totaling \$80,000 have already been appropriated for this work. In 1933 an appropriation of \$20,000 was made for the fifth year of cooperation.

In continuance of assistance in the improvement of laboratory teaching in the Faculty of Medicine of the University of Montreal, which was begun in 1920, a pledge was made to the school in 1930 for an appropriation of \$25,000 a year over a period of five years. In 1933 the fourth payment on this pledge was made.

During the year \$15,200 was given to match an equivalent sum raised from French sources

for endowment of research work in the Faculty of Medicine and Pharmacy of the University of Lyon, France, with which the Foundation has been cooperating for a number of years.

In the difficult period following the World War the Foundation helped medical institutions in a number of European countries to obtain current and back files of medical publications, which they had been unable to purchase because of their reduced budgets. The program has been discontinued in all countries except Russia, where foreign literature still constitutes a pressing need. The sum of \$15,000 has been appropriated for the purpose of supplying medical literature to that country during 1934, through the medium of the central library of the Nar-komsdrav, the Department of Public Health and Medical Education, in Moscow.

#### General Program

##### Fellowships

*Appropriations.*—The sum of \$30,000 was appropriated to the National Research Council of the United States for fellowships in the medical sciences for the period from July 1, 1934, to June 30, 1935. The Foundation has made grants to the National Research Council for medical fellowships since 1922. Similarly, \$15,000 was appropriated to the Medical Research

Council of Great Britain for fellowships in medicine for the period July 1, 1934, to June 30, 1935. Since 1923 the Foundation has given funds totaling over \$185,000 to this organization for support of its fellowship program in the medical sciences. In all, seventy-three awards have been made, of which sixty-six had terminated by the end of 1933 and seven were still active.

*Number and Distribution of Fellowships.*—During 1933 the Foundation provided 295 fellowships in the medical sciences. The fellowships supported and administered directly by the Foundation totaled 101. Of the holders of these grants, ten were from Siam; ten from the United States; seven from Australia; six each from Argentina, China, and India; five from Japan; four each from Finland and France; three each from England, Germany, Poland, Russia, Spain, Sweden, and Syria; two each from Brazil, Canada, Czechoslovakia, Denmark, Italy, and Portugal; and one each from Egypt, Estonia, Greece, Iceland, Irish Free State, the Netherlands, Northern Ireland, the Philippines, Puerto Rico, and Switzerland.

Fifteen of these fellows studied physiology; twelve, biochemistry; eight, pathology and related subjects (teratology, pathological histology, and pathological anatomy); seven each, internal medicine and surgery, neurosurgery, and genito-

urinary surgery; six each, bacteriology, anatomy and related subjects (cytology, embryology, tissue culture, and microdissection), and neuropathology; five, psychiatry; four, neurology; three, chemistry; two each, neurophysiology, public health, tropical medicine, immunology, obstetrics, parasitology, obstetrics and gynecology, physics, serology, psychology, and pharmacology; one each, biology, biophysics, experimental zoology, genetics, industrial hygiene and public health, malariology, mental and nervous diseases, microbiology, mycology, nutrition and dietetics, poliomyelitis, protozoology, roentgenology, and virus diseases. Among these, twenty-one fellows studied more than one subject. The studies were carried on in Austria, Belgium, Canada, China, Denmark, England, France, Germany, India, Scotland, Spain, Sweden, Switzerland, and the United States.

The number of fellowships administered in 1933 by agencies other than The Rockefeller Foundation from funds supplied by the Foundation was 194. Thirteen persons held fellowships under the Medical Research Council, Great Britain, for work in Austria, Czechoslovakia, Canada, and the United States. One each studied bacteriology and epidemiology of undulant fever, physiology, child psychiatry, cardiology, surgery, neurosurgery, genito-urinary surgery

and gynecology, internal medicine, pathology, chemistry, nutrition, neurology, and neurophysiology.

Under the Notgemeinschaft der Deutschen Wissenschaft, nine persons held fellowships for study in Denmark, England, France, and the United States. Three of these studied physiology, and one each studied endocrinology, physical chemistry, pathological anatomy of the nervous system, surgery, tissue culture methods, and urology.

Under the Hungarian Scholarship Council, four fellowships were held for study in Germany, Scotland, and the United States. One fellowship each was held for neurology and psychiatry, pharmacology, legal medicine, and pediatrics.

Funds were granted to the Peiping Union Medical College to provide nineteen fellowships for study outside of China and 111 fellowships for short periods of study at the college.

From funds supplied to the National Research Council in the United States for fellowships in medicine awarded to applicants of American or Canadian citizenship, thirty-eight fellowships were supported during the year.

#### Research Aid Grants

During the year the Foundation, by means of research aid grants in sums varying from \$55 to

\$3,000, enabled sixty-one scientists or groups of scientists to carry on research work. These grants were distributed among the following countries: one to Argentina, one to Brazil; three to Czechoslovakia; three to Denmark; four to England; one to Estonia; one to Finland; eight to France; sixteen to Germany; one to Iceland; five to Italy; three to the Netherlands; one to Norway; six to Russia; one to Scotland; two to Sweden; two to Switzerland; one to Syria; and one to the United States. Special grants were also made to nine former members of German universities for research work abroad.

The following grants are typical: \$2,500 to Professor F. Neufeld, of the Robert Koch Institute, Berlin, Germany, for technical assistance and supplies for research on pneumococcus infection; \$2,500 to Professor Hermann Rein, director of the Institute of Physiology, University of Göttingen, Germany, for research apparatus, supplies, and technical assistance, and for improved facilities for the care of animals in connection with studies on the physiology of the circulation; \$3,000 to the American University of Beirut, Syria, for investigations on immunity to echinococcus infestation; \$2,500 to promote research on the nervous system, at the Institute of Physiology, Medical Faculty of the University of Edinburgh, through the purchase

of scientific apparatus; \$1,500 for apparatus needed by Dr. Herbert H. Jasper, of the Department of Psychology, Brown University, for studies in nerve physiology; \$1,700 for scientific apparatus and consumable research supplies for the investigative work of Sir Charles Sherrington, director of the Institute of Physiology, University of Oxford, on the physiology of the nervous system; \$1,450 for the salary of a special assistant and for scientific apparatus and expendable supplies for research on experimental catatonia and the organic basis of mental disease, by Dr. Herman de Jong, at the Neurological Clinic and Polyclinic, University of Amsterdam, Netherlands; \$2,500 to Professor S. Thannhauser, director of the Medical Clinic of the University of Freiburg, Germany, for supplies required for studies on the formation of biliary pigments and lipoids in the organism and intermediary metabolism of amino-acids; \$1,250 for equipment needed in investigations on the physiology of the senses and cerebral localization, being carried on by Professor M. Kroll at the Neurological Clinic, Medical Faculty of the Second State University, Moscow; \$1,250 to Professor Oswald Bumke, director of the Neuro-Psychiatric Clinic of the University of Munich, Germany, for special technical assistance for investigations on psychophysical con-

stitutions, being carried on in the clinic in collaboration with Professors Friedrich von Muller and Ernst von Romberg; \$1,500 to Professor Ludwig Aschoff, director of the Institute of Pathological Anatomy, University of Freiburg, Germany, for supplies and technical assistance for research on problems related especially to diseases of the kidney and the vascular system; \$1,750 to provide scientific apparatus and additional technical assistance for studies in cellular physiology directed by Professor David Keilin at Molteno Institute, University of Cambridge; \$1,800 to Mr. Charles Donald, of London Hospital, to permit completion of investigations on hydrocephalus; \$1,700 for the development of research at the Institute of Histology and Embryology of the University of Utrecht, the Netherlands, through the purchase of scientific instruments for Professor Jan Boeke's investigations on the central and peripheral nervous systems; \$1,200 to promote physical research on the nervous system, through assistance to the Department of Electro-Physiology of La Salpêtrière Home, Paris, under the direction of Professor Georges Bourguignon; \$1,470 to promote comparative research on dementia praecox in apes, and to further chemical studies on virus diseases and bacteria at the Pasteur Institute of Paris, by enabling the institute to secure the

services of a chemist and an additional bacteriologist.

#### **Emergency Research Aid**

Because of disturbed conditions in certain parts of Europe, which have interrupted the productive careers of many eminent scholars, there was appropriated by The Rockefeller Foundation during 1933 a special research aid fund for the temporary establishment in other countries of a limited number of these scholars. The sum of \$60,000 was allocated for use in the medical sciences.

#### **Summary of Appropriations for 1933**

##### **PROGRAMS OF SPECIFIC CONCENTRATION**

###### **Psychiatry**

The Johns Hopkins University School of Medicine. Research in psychia- try.....	\$80,000.00
University College, London. Re- searches of Professor A. V. Hill...	16,400.00
Washington University, St. Louis School of Medicine.....	58,500.00
Harvard Medical School and Massa- chusetts General Hospital. Psy- chiatry.....	80,000.00
	<hr/>
	\$234,900.00

###### **Public Health Teaching**

Dalhousie University. Development of teaching of public health and preventive medicine.....	\$44,000.00
Grants in Aid of Research in Psychiatry and Public Health Teaching.....	30,000.00

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\$308,900.00

**FORMER PROGRAMS****Medical Education in China**

China Medical Board, Inc.....	\$149,500.00
Shantung Christian University.....	25,600.00
Research aid fund, China.....	7,500.00
Peiping Union Medical College.....	398,000.00
Peiping Union Medical College. Fellowships.....	29,000.00
Chinese Medical Association.....	9,750.00

\$619,350.00

**Research Projects**

University of Rochester. Dental pathology.....	\$26,803.50
Yale University. Dental pathology.....	25,000.00
Columbia University. The common cold.....	6,000.00
Central Institute for the Deaf, St. Louis.....	2,600.00
Harvard Infantile Paralysis Commission.....	5,000.00

\$65,403.50

**Other Projects**

Albany Medical College. Extension courses in medicine.....	\$20,000.00
University of Montreal. Development of laboratories.....	25,000.00
University of Lyon. Maintenance of facilities for teaching in Faculty of Medicine and Pharmacy.....	15,200.00
Russia. Medical literature.....	15,000.00

\$75,200.00

\$759,953.50

**GENERAL PROGRAM****Fellowships**

National Research Council, United States.....	\$30,000.00
Medical Research Council, Great Britain.....	15,000.00

\$45,000.00

**Emergency Grants**

Special research aid fund, Europe...	\$60,000.00
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\$105,000.00

Total ..... \$1,173,853.50

### Payments on Former Appropriations

PROJECT	1933 PAYMENT
Albany Medical College, New York. Organization of extension teaching in medicine.....	\$5,000.00
American University of Beirut, Syria. Improvement of teaching facilities in the medical sciences, nursing, and premedical subjects.....	50,000.08
Brussels, Belgium. Department of Public Welfare. Maintenance of St. Pierre Hospital.....	10,000.00
Canadian National Committee for Mental Hygiene, Toronto. Development of training centers for advanced students .....	10,200.00
China Medical Board, Inc., New York City. Salary and expenses of director.....	9,076.95
Chinese Medical Association, Shanghai. General budget.	1,431.15
Chulalongkorn University, Bangkok, Siam. Equipment and supplies for medical, premedical, and nursing schools.....	2,132.82
Chulalongkorn University. Addition to pathology building and building for School of Nursing.....	55,293.89
Chulalongkorn University. Visiting professors and nurse leaders.....	20,653.52
Columbia University, New York City. Studies of the common cold.....	13,500.00
Columbia University. Studies at the School of Tropical Medicine, Puerto Rico, on nutrition in Puerto Rico....	8,000.00
Columbia University. Research on virus diseases.....	4,060.15
Columbia University. Research in medical mycology....	4,601.88
Cornell University Medical College, New York City. Studies on the rôle of the glands of internal secretion in relation to growth and inheritance.....	24,581.82
Europe. Developmental aid. Constructive program of aid to medical education without capital expenditure...	17.20
Fellowships administered by The Rockefeller Foundation	125,842.63
Fellowships in psychiatry.....	22,312.02
Grants in aid in psychiatry and public health.....	1,301.99
Harvard University, Cambridge, Massachusetts. Research in physiology and physical chemistry.....	25,080.86
Hospitals in China	
Board of Foreign Missions of the Presbyterian Church in the United States, Changteh. Maintenance.....	1,000.00
Board of Foreign Missions of the Presbyterian Church in the United States, Chefoo. Maintenance.....	1,000.00
Church of Scotland Foreign Mission Committee. Ichang. Maintenance.....	250.00

Hungarian Scholarship Council, Budapest. Foreign scholarships in medicine.....	\$4,743.48
Institute for Psychiatric Research, Munich, Germany. Research in neurohistology, serology, and biochemistry.....	12,082.82
Johns Hopkins University, Baltimore, Maryland. Research in psychiatry.....	10,000.00
Johns Hopkins University. Study of deafness.....	12,168.09
Johns Hopkins University. Study of obstetrical records.....	4,477.32
Kaiser Wilhelm Institute of Anthropology, Human Heredity, and Genetics, Berlin-Dahlem, Germany. Research on twins and the effect of poisons on germ plasms.....	3,000.00
Kaiser Wilhelm Institute for Brain Research, Berlin-Buch, Germany. Special apparatus and maintenance.....	11,098.00
Leland Stanford, Jr., University, California. General research fund in the medical sciences.....	10,000.00
Library of the Society of Physicians, Vienna, Austria. Medical literature.....	120.05
McGill University, Montreal, Canada. Construction and equipment of a laboratory in the Royal Victoria Hospital.....	103,586.35
McGill University. Research in surgery.....	15,000.00
McGill University. Teaching and research in neurology, neurosurgery, and the physiology and pathology of the nervous system.....	15,256.48
Massachusetts Society for Mental Hygiene, Boston. Work in the field of mental disorders.....	5,693.30
Medical literature for Russia.....	14,920.22
Medical Research Council, London, England. Fellowships.....	20,136.25
Medical Research Council. Research on puerperal fever..	6,620.94
Medical Research Council. Research on virus diseases...	3,308.93
National Central University, Nanking, China. Medical School, Shanghai. Maintenance.....	9,059.12
National Research Council, Washington, D. C. Fellowships in the medical sciences.....	38,880.89
National Research Council. Work of the Committee on Drug Addiction.....	35,301.83
Notgemeinschaft der Deutschen Wissenschaft, Berlin, Germany. Fellowships in the medical sciences.....	12,100.22
Peiping Union Medical College, China. Foreign fellowships and grants in aid .....	25,086.07
Peiping Union Medical College. Fellowships and grants in aid for graduate students.....	8,010.24
Peiping Union Medical College. Commutation and travel of visiting professors.....	12,544.72
Queen's University, Belfast, Northern Ireland. Development of the medical sciences.....	1,320.25

Research aid funds, Europe. Medical sciences.....	\$67,749.64
Research and developmental aid in the medical sciences, China.....	7,218.63
St. Bartholomew's Hospital Medical College, London, England. Development of pediatrics.....	2,210.70
Shantung Christian University School of Medicine, Tsing- nan, China. Maintenance.....	7,075.00
Trinity College, Dublin, Irish Free State. Development of medical sciences.....	4,473.84
Trudeau Foundation, Trudeau, New York. Research in tuberculosis.....	10,000.00
University of Breslau, Germany. Building of neurologi- cal laboratory.....	50,000.00
University College, Dublin, Irish Free State. Develop- ment of medical sciences.....	3,459.91
University of California, Berkeley. Study of chemical aspects of vitamins and hormones.....	5,000.00
University of Lyon, France. Faculty of Medicine and Pharmacy. Interest on endowment.....	14,196.69
University of Montreal, Canada. Faculty of Medicine. Development of laboratories.....	25,000.00
University of Oregon Medical School, Eugene. General research fund.....	6,500.00
University of Padua, Italy. Institute of Histology and Embryology. Research work.....	1,457.28
University of Paris, France. Department of Parasitol- ogy. Support.....	5,471.30
University of Paris. Support of scientific personnel, Radium Institute, Division of Physics.....	11,417.97
University of Pennsylvania, Philadelphia. Study of liv- ing tissues.....	13,829.08
University of Rochester, New York. School of Medicine and Dentistry. Development of a habit-training clinic in the Department of Psychiatry.....	26,000.06 ,
University of Rochester. School of Medicine and Den- tistry. General research fund.....	20,000.00
University of Rochester. Special research in dental pathology.....	2,210.61
University of Rochester. Diathermy studies.....	7,260.51
University of Sydney, Australia. Medical School. Build- ing of clinical laboratory.....	220,280.50
University of Szeged, Hungary. Departments of Science and Medicine. Maintenance.....	4,846.84
University of Szeged, Hungary. Departments of Science and Medicine. Scientific equipment.....	18,562.82
University of Toronto, Canada. Department of Pedi- atrics. Research.....	7,889.31
University of Turin, Italy. Institute of Anatomy. Re- search in problems of growth.....	814.95

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Vanderbilt University, Nashville, Tennessee. School of Medicine. General research fund in the medical sciences.....	\$50,000.00
Washington University, St. Louis, Missouri. Research on virus diseases.....	2,500.00
Washington University. General research fund.....	20,000.00
Washington University. Research in neurophysiology...	5,850.00
Western Reserve University, Cleveland, Ohio. Research on whooping cough.....	3,500.00
Yale University, New Haven, Connecticut. Institute of Human Relations. Development of psychiatry and care of individuals under observation.....	100,000.02
Yale University. Special research in dental pathology...	12,500.00
Yale University. School of Medicine. General research fund.....	<u>21,250.00</u>
Total.....	\$1,548,378.20

## **THE MEDICAL SCIENCES STAFF DURING 1933**

**DIRECTOR**

**Alan Gregg, M.D.**

**ASSOCIATE DIRECTOR**

**William S. Carter, M.D.**

**ASSOCIATE DIRECTOR IN EUROPE**

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## **THE NATURAL SCIENCES**

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## THE NATURAL SCIENCES

During the years immediately following 1929, when The Rockefeller Foundation's program in the natural sciences was first organized, there was recognized, in selecting projects for aid, some preferential emphasis upon certain fields of interest; but the primary emphasis was not upon field but rather upon the outstanding leadership of the chosen men or institutions. In recent years, however, interest in certain definite fields has played the dominant rôle in the selective process. The opportunities open to the Foundation in the field of the natural sciences are, in fact, not likely to be met by supporting undertakings merely because they are sound scientific projects, or even because they are outstandingly good scientific projects. A highly selective procedure is necessary if the available funds are not to lose significance through scattering. Within the fields of interest decided upon, selection naturally continues to be made of the leading men and institutions.

The choice of fields of interest is influenced by several considerations. The field must contribute in a basic and important way to the welfare of mankind. It must be sufficiently developed to merit support, but still so imperfectly devel-

oped as to need it. It should be a field in which the contributions of the Foundation can play a significant rôle in producing and stimulating development that otherwise would not take place within a reasonable time.

It is obvious that the welfare of mankind depends in a vital way upon man's understanding of himself and of his physical environment. The problems of physical and mental growth and development and of reproduction of kind are of central importance to all individuals. Not only the well-being of present society, but even to a greater extent the well-being of the society of the future, depends upon a deeper understanding of the nature of these problems. Science has made magnificent progress in the analysis and control of inanimate forces, but it has not made equal advances in the more delicate, difficult, and important problem of the analysis and control of animate forces. This indicates the desirability of increasing emphasis on what may be called the vital sciences, or sciences dealing with the processes of life. These include the biological sciences, psychology, and those special developments in mathematics, physics, and chemistry which are fundamental to biology and psychology.

Biology is today in a position in some ways analogous to that occupied by physics and chemistry many years ago. It has advanced out of

the stage of qualitative observation and classification into the stage of detailed quantitative analysis. The time is ripe to help stimulate significant advances by bringing to bear on the basic problems of biology the powerful quantitative techniques of mathematics, physics, and chemistry. Among the promising fields for study are endocrinology, genetics, psychobiology, embryology, nutrition, general physiology, and the biology of reproduction.

Important questions are: Can we obtain enough knowledge of the physiology and psychobiology of sex so that man can bring this aspect of his life under rational control? Can we unravel the tangled problem of the endocrine glands and develop a therapy for the whole hideous range of mental and physical disorders which result from glandular disturbance? Can we develop so sound and extensive a genetics that we can hope to breed in the future superior men? Can we solve the mysteries of the various vitamines, so that we can nurture a race sufficiently healthy and resistant? Can psychology be shaped into a tool effective for man's every-day use? In short, can we rationalize human behavior and create a new science of man?

The past fifty or one hundred years have seen a marvelous development of physics and chemistry, but hope for the future of mankind depends in a

basic way on the development in the next fifty years of a new biology and a new psychology. In selecting projects for Foundation aid in the natural sciences the major emphasis at present is upon certain fields of modern analytical biology.

An inclusive study of vital phenomena must take into account the physical conditions surrounding and effecting life. For example, few concepts in the whole history of thought have been so important in their implications as the concept of organic evolution, and man has perhaps no higher responsibility than that of understanding and consciously controlling the evolutionary processes. In the attack on the unsolved problems of evolution two types of knowledge are required, knowledge of the development of the individual and knowledge of the physical background which to so large an extent conditions that development.

It has not been judged feasible for The Rockefeller Foundation to support an extensive program in the varied disciplines which study all aspects of the physical stage on which the drama of life is played. The field of the earth sciences (covering, for example, meteorology, atmospheric electricity and magnetism, earth currents, geophysics, etc.) has, however, been chosen to form a modest complement to the principal program in vital processes. Certain aspects of re-

search in this field, particularly meteorology, have practical applications of high importance. Work in this field has the whole world as its laboratory, and for certain programs, necessarily organized on an international scale, aid is naturally sought from such organizations as The Rockefeller Foundation.

Research in the earth sciences has received little attention, being somewhat pushed off the stage by the more spectacular researches in atomic physics and astrophysics. It has been popular to work on the atom and on the cosmos, but there has been, relatively speaking, very little study of the less spectacular but important problems that refer directly to the earth. The situation is in some respects like that which prevailed in astronomy before there was emphasis on the desirability of the study of the sun as the nearest star.

During 1933 the Foundation's allocation for earth sciences was sharply reduced because of the even greater urgency of the biological program. On a diminished scale also, the Foundation continued to give such basic and general support to the natural sciences as is furnished by fellowships and by grants in aid of research. In addition, it continued to support certain projects connected with its former and less restricted program. Under this heading come research proj-

ects, support to publications, and aid to certain scientific institutions.

**Programs of Specific Concentration**

**Vital Processes**

**California Institute of Technology**

**Research in Biology**

In 1933 the Foundation appropriated to the California Institute of Technology the sum of \$50,000, to be used for research in biology under the direction of Professor T. H. Morgan, recent Nobel laureate, and former president of the National Academy of Sciences and of the American Association for the Advancement of Science. Dr. Morgan is one of the outstanding scientific figures of this generation. Under his direction there has been developed at the California Institute of Technology a program in quantitative biology with an able staff engaged in studies in the fields of biophysics, biochemistry, and genetics.

At Corona del Mar, the institute has a marine biological station, where members of the Division of Biology are engaged in studies of the physics and chemistry of embryonic development. This involves physical measurements of changes in shape and size of the developing embryo, and studies of the changes taking place during development. Respiration and anaerobic metabolism are also being studied.

The special need of the department at the present time is for additional personnel to undertake studies of the biological stages that are found between the genes in the fertilized egg and the finished characters of the organism. Between the initial stage, which is the province of cytology, and the final stage, which is the subject matter of genetics, lies a significant and unexplored region. The Foundation's grant will make possible investigations in this field. Of the sum appropriated, \$30,000 will be used for research in biology during 1934, and \$20,000 will be reserved for support of personnel during the years 1935 and 1936.

**University of Chicago**

**Research in Biology**

In continuation of a five-year grant made in 1929, the Foundation appropriated to the University of Chicago the sum of \$50,000, to be used for researches in biology during the academic year 1934-35.

The Division of the Biological Sciences at the University of Chicago embraces the entire range of preclinical and clinical subjects. Under the leadership of Professor F. R. Lillie, there has been developed in this department one of the world's foremost centers of biological research,

especially in the fields of physiology, biochemistry, and the genetics of sex. Other prominent investigators connected with this work are Professor Sewall Wright, who within the field of zoology has made researches in the following subjects: genetics, inheritance of coat characters, abnormalities, fertility, growth and resistance to tuberculosis in guinea-pigs, inbreeding and cross breeding, biometry, and the statistical consequences of Mendelian heredity; and Professor K. S. Lashley, whose work in the fields of zoology and psychology has included studies of heredity, color vision, instincts of birds and primates, and the learning processes, cerebral localization, and sex behavior of animals.

The studies in the genetics of sex form part of an extensive program heretofore financed in part by the National Research Council Committee for Research in Problems of Sex, but which will now be supported by the Foundation's appropriation. Since 1930 the programs of sex research at Chicago have been under the direction of Professor F. R. Lillie. Researches which have been carried out in this field include the following: studies of the occurrence of the male hormone in the urine of men, women, and the cow, by Professor F. C. Koch, who has made advances in the methods of effecting purification of the hormone from these sources; im-

munological studies of infections with animal parasites, under Professor W. H. Taliaferro; studies of the mechanism and effects of crowding in various lower animals, under Professor W. C. Allee; various physico-chemical studies of seeds and seedlings, by Professor C. A. Shull; serological studies on fungi, by Professor G. K. K. Link; physiological studies on the thyroid and pancreas, by Professor A. J. Carlson and his associates; studies on bacterial dissociations in the *Salmonella* group of organisms, by Professor E. O. Jordan; experimental analysis of the embryology of the chick, by Professor B. H. Willier; studies in general physiology, under Professor R. S. Lillie; studies in nerve physiology, by Professor A. B. Luckhardt; studies of the oxidation of nerve tissue, by Professor R. W. Gerard; studies of the oestrus-inhibiting hormone of the anterior lobe of the pituitary body, begun under Professor H. B. van Dyke and continued under Professor F. C. Koch; studies of the effects of growth-promoting extracts of the anterior pituitary on the hypophyses of castrated rats, by A. M. Targow; investigations into the physiology of menstruation and allied subjects, by Professor G. W. Bartelmez; studies of connective tissue cells in tissue culture, by Professor W. H. Bloom; and studies in comparative neurology, by Professor C. J. Herrick.

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

In continuation of a previous grant, The Rockefeller Foundation appropriated to the National Research Council's Committee for Research in Problems of Sex, the sum of \$65,000 for the support of its general program for one year, beginning July 1, 1934. The Foundation has, for the past three years, contributed \$75,000 yearly to the work of this committee.

In the twelve years of its activity the Committee for Research in Problems of Sex has aided in the organization and conduct of sex research in more than sixty laboratories, five of which, at least, have developed into important centers for work on some aspect of the biology of sex. More than 500 scientific papers have appeared which can be accredited to the activity of this committee, and a two-volume work entitled *Sex and Internal Secretions*, edited by Professor Edgar Allen, has been published. This compilation represents reports on research wholly or partly financed by the committee.

Under the direction, stimulation, and support of the committee, much work has been done in the formulation and solution of basic problems in the general biology and physiology of sex in organisms other than man. It was essential that

this fundamental work on infra-man pave the way for that on man. Illustrative of this fundamental research has been the work of Dr. H. M. Evans at the University of California, on the relation of nutrition to fertility and on endocrine relationships; of Professor F. R. Lillie at the University of Chicago, on the nature and mode of action of the sex hormones; of Professor F. C. Koch also at the University of Chicago, on the biochemistry of sex hormones; of Professor F. L. Hisaw at the University of Wisconsin, on the physiology of the corpus luteum and its inter-glandular relationships; of Professors P. E. Smith and E. T. Engle at Columbia University, on the anatomy of sex; of Professor G. W. Corner at the University of Rochester, on the anatomy of monkeys; of Professor Edgar Allen at the University of Missouri, on the physiology of reproduction of the higher primates and on the nature and mode of action of the ovarian follicular hormone in monkeys; and of Professor R. M. Yerkes of Yale University, who has furnished leadership to the committee and who is specifically interested in a study of the social life and reproductive cycle of the howler monkey.

During the year ending June 30, 1933, the Committee for Research in Problems of Sex cooperated with twenty-two individuals or institutional groups in investigations of sex problems.

As in several previous years, physiological problems preponderated; however, a few investigators were occupied primarily with morphological problems, and a few with problems of sexual and related forms of behavior in man and other animals. In at least half the investigations sponsored by the committee during the year, endocrine activities and relationships were conspicuously of interest.

Future programs of the committee's activities stress the biology and physiology of sex in man, with special attention to the following phenomena of sex: the neural relations of sexual and associated phenomena (neuro-physiology); sexual behavior and experience (psychobiology); the activities and relations of the individual, with respect to sexual phenomena and situations (psychosociology); and atypical and pathological forms and relations of sexual behavior and experience (psychopathology).

**Roscoe B. Jackson Memorial Laboratory**

**Studies in Genetics**

A grant of \$11,000 was made by the Foundation to the Roscoe B. Jackson Memorial Laboratory, in Bar Harbor, Maine, for research in mammalian genetics during the year 1934. The laboratory, which is under the direction of Dr. C. C. Little, is a three-story brick building, ad-

mirably designed for its purpose and one of the most complete plants in America for the study of mammalian genetics. There are provisions for the housing of 60,000 to 80,000 mice. The colony housed there at the present time numbers 18,000 to 20,000 mice. Some of the strains included in this colony have been inbred since 1908, others since 1919. The scientific staff, which consists of six research workers in addition to Dr. Little, has published numerous papers on mammalian genetics and on normal and abnormal growth.

Support for the laboratory, which has come largely from the Jackson family in Michigan, has been interrupted because of banking difficulties in Michigan. The Foundation's grant is viewed as an emergency measure.

**California Institute of Technology  
Research in Chemistry**

An appropriation of \$10,000 was made to the California Institute of Technology toward the support of research in chemistry under the direction of Professor Linus Pauling, during the year beginning July 1, 1934. This research falls in the border area where mathematics, chemistry, and physics meet. It extends the technique of wave mechanics to the study of complex inorganic and organic molecules. The plan of work

includes an experimental and theoretical attack on important problems of structural chemistry, making use of recent developments in physics. X-ray diffraction by crystals and electron diffraction by gas molecules have been the experimental methods principally used. The theoretical work involves the application of quantum mechanics to complex molecules. The work has now advanced to a point where it becomes possible to study the structure of chlorophyl, hemoglobin, and other substances of basic biological importance. Only when the structure is known is it possible to understand the energy changes which result when structure is modified through chemical interactions. Such work is basic to an understanding of biological problems.

National Research Council

Committee on Effects of Radiation  
on Living Organisms

The National Research Council received from the Foundation an appropriation of \$10,000 for use by the Committee on Effects of Radiation on Living Organisms, of its Division of Biology and Agriculture, in connection with a survey of the field of mitogenetic radiation to be made during 1934.

Mitogenetic rays were first detected by Professor Alexander Gurwitsch of Leningrad. They

are radiations of extremely low intensity given off by living cells. So feeble is the alleged radiation that some investigators, attempting to repeat Professor Gurwitsch's experiments, have failed to detect the rays and have declared them non-existent. Theoretically such rays are presumably to be expected. Just as ordinary radiations are caused by changes in atomic and molecular configurations, so chemical reactions which accompany and are characteristic of certain vital processes are supposed to give rise to radiations. If living cells emit radiations, a study of these radiations would shed light on significant biochemical reactions and on certain biological processes.

The Committee on the Effects of Radiation on Living Organisms has conducted a survey of work that has been done in this field in European countries, notably in Russia, Germany, Italy, the Netherlands, and France, and has planned a restricted program of research in the United States.

The committee has been in existence for five years, and Professor W. C. Curtis, of the University of Missouri, has been its chairman since its formation. During this period thirty-five grants have been made to investigators and a large number of contributions have been published. Professor B. M. Duggar of the University of

Wisconsin, a member of the committee, is editing a volume surveying the entire field of the effects of various types of radiation on living organisms. The committee has received previous grants from the General Education Board and from the Commonwealth Fund.

**Earth Sciences**

**Massachusetts Institute of Technology**

**Aerological Research**

In The Rockefeller Foundation's Annual Report of last year there was given an account of a grant to the Massachusetts Institute of Technology toward support of aerological research for one year. An appropriation (\$8,300) was made in 1933 toward the support of this program for an additional year. This aerological research provides meteorological data, first, for the so-called "air mass analysis" which leads directly to new and improved methods of weather forecasting and, secondly, for the analysis of storm fronts, which is of particular importance to the safety of air travel. The work plays a significant rôle in demonstrating the practicability and importance, for forecasting, of upper air data, and will have a determining effect on the development of a modern and scientific weather service.



Photograph Excised Here

Scientific Station at Jungfraujoch, Switzerland, which has received a grant from The Rockefeller Foundation for construction and equipment necessary to insure the safety of the property from the sliding of rocks and the infiltration of water.

### Grants in Aid of Research in Vital Processes and the Earth Sciences

During 1933 there was appropriated the sum of \$30,000 to be held available for grants in aid of research in the fields of vital processes and the earth sciences. Awards to be made from this sum will be especially useful in exploring new fields of study and in accelerating opportunities for work which has slowed down because of the present economic situation.

#### Studies of the Disposition of Minerals in the Living Cell

One grant made in 1933 from the research aid fund mentioned above consisted of \$4,425 to the University of California for an investigation of the disposition of minerals in the living cell, as shown by the microincineration method. This research is under the direction of Professor T. H. Goodspeed of the Department of Botany.

In mammalian sex cells the mineral constituents are largely confined to the cell nucleus. The absorption of x-ray quanta by living tissue is in proportion to the amount of mineral substances present. Thus, if the nuclei containing the heritable material are peculiarly rich in minerals, they would be expected to be differentially affected by x-radiation. Therefore, it appears important to confirm and extend available in-



Photograph Excised Here

Institute of Physical Chemistry, University of Uppsala, Sweden, which is receiving Foundation support for its research work

formation as to the distribution of minerals by determining the mineral topography of the sex cells in plants. Such investigations involve the use of microincineration, a new technique in which tissue is subjected to temperatures at the melting point of glass. The work ties up closely with the work of the Committee on the Effects of Radiation on Living Organisms.

The technique of microincineration appears applicable to the solution of a variety of biological problems. It should throw light on many problems concerned with the utilization and disposition in living tissues of the mineral elements necessary for life. But results obtained up to the present time indicate the necessity for a thorough testing of this new technique before entire confidence can be placed in the information so far accumulated here and elsewhere.

#### Aerological Investigations

A research aid grant of \$2,800 was made toward the support of an aerological investigation of vertical structure of warm fronts and squall lines, by Professor Jakob Bjerknes of the Geophysical Institute, Bergen, Norway, and Professor C. G. Rossby of the Massachusetts Institute of Technology. Since weather conditions make airplane ascents in this study rather hazardous, it is proposed to supplement the airplane inves-

tigation by sounding balloons. A new recording instrument for this type of work has been designed. The technique of sounding balloon investigation has been perfected by Professor Bjerknes, who recently used the method on a few European fronts. North America is a particularly interesting field for this work, in view of the fact that the mutual proximity of the sources of fresh polar and tropical air produces fronts of an intensity practically unknown in Europe. The funds provided by the Foundation will cover Professor Bjerknes' traveling expenses from Bergen to Boston, his expenses in the United States, and the cost of recording instruments, balloons, etc. The Massachusetts Institute of Technology will furnish microscopes, calibration equipment, and standard instruments for surface observation, as well as graduate student assistants.

#### **Former Program**

##### **Resident Fellowships in China**

The program of resident fellowships in the natural sciences in China has been successful and useful in locating and observing men who can eventually become candidates for foreign fellowships. It has also been used to strengthen the quality of teaching in the natural sciences in a number of Chinese universities. This type of

aid was first given in 1929-30, with grants amounting to \$1,500; it was continued in the two following years, with annual grants of \$2,000, and in 1932-33 with a grant of \$5,000. For the maintenance of this program during the period July 1, 1933, to June 30, 1934, the Foundation appropriated the sum of \$5,000. During the year 1933 twenty-one Chinese students held resident fellowships in the natural sciences.

#### **Research and Developmental Aid Funds, China**

From 1918 to 1929 emergency funds were made available for the advancement of medicine in China. In 1929 a similar small emergency fund was appropriated for the development of the natural sciences in that country. In 1932 a grant of \$15,000 was made for research aid and developmental aid in the medical and natural sciences. The support was continued during 1933 by an additional grant of \$15,000.

#### **Marine Biological Association of China**

##### **Institute at Amoy**

The Foundation made a grant of \$2,250 to the Marine Biological Association of China toward the support over a period of three years of the Marine Biological Institute at Amoy. This institute is attended by teachers of biology and young graduates, who are given an opportunity

for the study of marine biology and the investigation of coastal fauna and flora. A more comprehensive survey of marine flora and fauna of Amoy is now under way and will be extended to other localities of the China coast.

#### **Emergency Grants in the Natural Sciences, China**

Appropriations for the advancement of the premedical sciences in China have been made since 1916. They total over \$1,800,000, of which more than \$1,500,000 has been given for the development and support of science teaching in thirteen colleges and universities. The original purpose of these grants was to provide for improved preparation for future students at the Peiping Union Medical College. Aid is still being given to a group of five institutions which are representative of the best type of premedical science education in China. These institutions are the University of Nanking, Soochow University, Lingnan University in Canton, Shantung Christian University in Tsinan, and Ginling College in Nanking. In 1933 an appropriation of \$25,000 was made for equipment and current maintenance for these institutions during the period ending June 30, 1934. An additional grant of \$10,000 was made in behalf of Lingnan University as further emergency aid for salaries in its department of science for the academic

year 1933-34. The aim of this grant is to maintain the present teaching efficiency of the university.

#### Biological Abstracts

The Foundation appropriated \$75,000 to the National Research Council for the use of the Union of American Biological Societies in the publication of *Biological Abstracts* during the year 1933.

#### American Mathematical Society

An appropriation of \$9,000 was made to the American Mathematical Society toward the publication of the results of scientific research for a period of two years beginning July 1, 1934. This grant is to be used in part for publications supported by the American Mathematical Association and in part for two journals sponsored by the society, but published under the auspices of the Johns Hopkins University and Princeton University, respectively.

#### Institute of Comparative Physiology, University of Utrecht

Aid to the Institute of Comparative Physiology at the University of Utrecht, Netherlands, in the form of small research grants, was begun by the International Education Board and continued by The Rockefeller Foundation. The

Ministry of Education of the Netherlands now proposes to utilize for the institute a suitable site on the edge of the central part of the city. The Foundation has made two appropriations, one for \$75,000 and another for \$26,000, to provide a new building. The government is furnishing the land and is providing funds for the yearly operating budget and for the maintenance of the building. Comparative physiology is a young science. The study of digestion, respiration, blood, gaseous exchanges, and the physiology of the muscles and the nervous system are fields which offer interesting and important problems. The research work now under way at the Institute of Comparative Physiology at Utrecht includes investigations, in vertebrates and invertebrates, on enzymes, on the working rhythm of digestive glands, on respiratory exchanges, and on the central nervous system.

#### Jungfraujoch Scientific Station, Switzerland

An appropriation was made in 1928 by the International Education Board to a committee of the Swiss Society of Natural Sciences and the Kaiser Wilhelm Society for the construction and equipment of a high altitude institute, where individual workers in astronomy, botany, geology, meteorology, glaciology, hydrology, physics, physiology, and biology might have facilities for

pursuing investigations at a site made available by the completion of the Jungfrau Railway. The station was built and is now in operation, under the control of an international committee composed of two members each from countries which contributed at least 50,000 Swiss francs. These countries are Switzerland, Austria, France, Belgium, Germany, and England. In 1933 The Rockefeller Foundation made an appropriation of \$35,700 to the station, chiefly for construction and equipment necessary to secure the safety of the property from the sliding of rocks and the infiltration of water.

#### Apia Observatory, Western Samoa

Details of a grant made to the Department of Scientific and Industrial Research of the Dominion of New Zealand for the work of the Apia Observatory, in Western Samoa, during the two-year period beginning in 1931, were given in the Annual Report of The Rockefeller Foundation for the year 1931. This observatory is supported by the Government of New Zealand and has received grants also from the Carnegie Institution and from the British Admiralty. The Foundation in 1933 made an additional grant of \$2,500 to the Department of Scientific and Industrial Research of the Dominion of New Zealand for sustaining the magnetic and seismological

work of the observatory during the period from July 1, 1933, to March 31, 1934.

#### **Special Research Aid Fund for European Scholars**

Owing to disturbed conditions in Europe, productive careers of eminent scholars have been interrupted. Some of the most prominent scholars in Europe have been dismissed from their posts. During 1933 two appropriations were made by the Foundation to provide a special research aid fund for such persons. Out of these funds \$100,000 was allocated for support of scholars in the natural sciences.

#### **General Program**

##### **Fellowships and Research Aid Grants**

As in former years, The Rockefeller Foundation during 1933 supported an extensive program of fellowships in the natural sciences. Some of these fellowships were administered directly by the Foundation and others were administered by the National Research Council from funds supplied by the Foundation. During the year \$150,000 was appropriated to the National Research Council for fellowships in the natural sciences and an additional \$50,000 for grants in aid of research. For the year ending December 31, 1933, the National Research Council appointed forty-four new fellows in the

physical sciences, of whom sixteen studied physics, seventeen chemistry, and eleven mathematics. In the biological sciences, the council appointed forty students.

The total number of fellowships in the natural sciences administered directly by The Rockefeller Foundation direct during 1933 was eighty-nine. Sixty-four of the persons holding these fellowships pursued studies in the physical sciences and twenty-five carried on studies in the biological sciences. Appended tables give information concerning the country of origin, the country of study, and the field of study of these fellows.

FELLOWSHIPS IN THE NATURAL SCIENCES ADMINISTERED BY  
THE ROCKEFELLER FOUNDATION DURING 1933,  
ACCORDING TO FIELD OF STUDY

Country of Origin	Physical Sciences	Biological Sciences	Totals
Argentina.....	1	..	1
Bulgaria.....	1	..	1
China.....	12	10	22
Denmark.....	3	..	3
England.....	14	3	17
France.....	1	4	5
Germany.....	16	4	20
Hungary.....	..	1	1
Italy.....	1	..	1
Netherlands.....	1	2	3
Northern Ireland.....	1	..	1
Norway.....	1	..	1
Poland.....	4	..	4
Scotland.....	2	..	2
Sweden.....	..	1	1
Switzerland.....	6	..	6
Totals.....	64	25	89

FELLOWSHIPS IN THE NATURAL SCIENCES ADMINISTERED BY THE ROCKEFELLER FOUNDATION DURING 1933,  
ACCORDING TO COUNTRY OF ORIGIN AND CHIEF PLACE OF STUDY

Country of Origin	Denmark	England	France	Germany	Italy	Netherlands	Sweden	Switzerland	Pearl	States	Totals
Argentina.....	1	1	1	1	1	1	1	1	1	1	22
Bulgaria.....	1	1	1	1	1	1	1	1	1	1	12
China.....	1	1	1	1	1	1	1	1	1	1	3
Denmark.....	2	1	1	1	1	1	1	1	1	1	11
England.....	2	3	1	2	1	1	1	1	1	1	14
France.....	1	1	1	1	1	1	1	1	1	1	1
Germany.....	1	1	1	1	1	1	1	1	1	1	1
Hungary.....	1	1	1	1	1	1	1	1	1	1	1
Italy.....	1	1	1	1	1	1	1	1	1	1	1
Netherlands.....	1	1	1	1	1	1	1	1	1	1	1
Northern Ireland.....	1	1	1	1	1	1	1	1	1	1	1
Norway.....	1	1	1	1	1	1	1	1	1	1	1
Poland.....	1	1	1	1	1	1	1	1	1	1	1
Scotland.....	1	1	1	1	1	1	1	1	1	1	1
Sweden.....	1	1	1	1	1	1	1	1	1	1	1
Switzerland.....	1	1	1	1	1	1	1	1	1	1	1
Totals.....	5	7	7	7	2	3	4	1	1	1	89

### Summary of Appropriations for 1933

#### PROGRAMS OF SPECIFIC CONCENTRATION

##### Vital Processes

California Institute of Technology, Pasadena.	\$50,000
Research in biology.....	
University of Chicago, Illinois. Research in biology.....	50,000
National Research Council, Washington, D. C.	
Committee for Research in Problems of Sex..	65,000
Roscoe B. Jackson Memorial Laboratory, Bar Harbor, Maine. Studies in genetics.....	11,000
California Institute of Technology. Research in chemistry.....	10,000
National Research Council. Committee on Effects of Radiation on Living Organisms...	10,000
Grants in aid of research in vital processes...	15,000
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Earth Sciences	\$211,000
Massachusetts Institute of Technology, Cambridge. Aerological research.....	\$8,300
Grants in aid of research in earth sciences....	15,000
	<hr/>
	\$23,300

#### FORMER PROGRAM

Resident fellowships in China.....	\$5,000
Research and developmental aid funds, China...	7,500
Marine Biological Association of China. Institute at Amoy.....	2,250
Emergency grants, natural sciences, China.....	25,000
Lingnan University, Canton, China.....	10,000
<i>Biological Abstracts</i> , 1933.....	75,000
American Mathematical Society, New York City	9,000
Institute of Comparative Physiology, University of Utrecht, Netherlands.....	101,000
Jungfraujoch Scientific Station, Switzerland.....	35,700
Apia Observatory, Western Samoa.....	2,500
Special research aid fund for European scholars..	100,000
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	\$372,950

#### GENERAL PROGRAM

##### Fellowships and Grants in Aid of Research

National Research Council. Fellowships.....	\$150,000
National Research Council. Grants in aid...	50,000
	<hr/>
Total.....	\$200,000
	<hr/>
Total.....	\$807,250

### Payments on Former Appropriations

PROJECTS	1933 PAYMENTS
Alaska Agricultural College and School of Mines, Fairbanks. Study of the aurora.....	\$3,351.68
American Institute of Physics, New York City. Scientific publications.....	3,568.68
American Mathematical Society, New York City. Scientific publications.....	3,375.00
American Mathematical Society. Support of <i>Annals of Mathematics</i> .....	1,125.00
Bermuda Biological Station for Research, Inc. Support of work.....	6,000.00
California Institute of Technology, Pasadena. Research in physics and chemistry.....	20,000.00
Fellowships administered by The Rockefeller Foundation	130,275.92
Fukien Christian University, Foochow, China. Maintenance of science departments.....	7,500.00
Genetics, research in, Philippine Islands.....	4,586.64
Hanover Polytechnic School, Germany. Scientific equipment for research in inorganic chemistry.....	4,750.19
Harvard University, Cambridge, Massachusetts. Chemical research to determine the heats of organic reactions	10,000.00
Harvard University. Geophysical Institute. Research	10,000.00
Hungarian Biological Research Institute, Tibany. Maintenance.....	2,366.00
International Commission for the Polar Year 1932-33, Copenhagen, Denmark. Equipment and expenses...	13,489.00
Iowa State College of Agriculture and Mechanic Arts, Ames. General research fund in the natural sciences	8,750.00
Johns Hopkins University, Baltimore, Maryland. Biological research.....	45,000.00
Johns Hopkins University. Research and graduate work in the Department of Chemistry.....	10,000.00
Kaiser Wilhelm Institute of Physical Chemistry and Electrical Chemistry, Berlin-Dahlem, Germany. Scientific equipment.....	10,758.31
Keio Gijuku University, Tokyo, Japan. Salary and expenses of visiting professors in biological sciences....	10,744.55
Long Island Biological Association, Cold Spring Harbor, New York. Work of the biological laboratory.....	20,000.00
Marine Biological Association of the United Kingdom, Plymouth, England. Addition to laboratory buildings and apparatus.....	7,162.06
Massachusetts Institute of Technology, Cambridge. Aerological research.....	6,000.00

Massachusetts Institute of Technology. General research fund for physics, chemistry, geology, and biology.....	\$45,000.00
National Academy of Sciences, Washington, D. C. Committee in Aid of Research. Publications.....	10,500.00
National Central University, Nanking, China. Maintenance of science departments.....	. 261.56
National Research Council, Washington, D. C. Conferences.....	10,000.00
National Research Council. Fellowships in the biological sciences.....	138,467.35
National Research Council. Fellowships in the physical sciences.....	136,912.26
National Research Council. Research aid fund.....	50,000.00
National Research Council. <i>Annual Tables of Constants and Numerical Data</i> .....	12,000.00
National Research Council. <i>Biological Abstracts</i> .....	21,827.31
National Research Council. Research in problems of sex	69,954.33
New Zealand Department of Scientific and Industrial Research. Work of Apia Observatory in Western Samoa	2,500.00
Ohio Wesleyan University, Delaware, Ohio. Support of the Perkins Observatory.....	10,513.00
Peiping Union Medical College, Peiping, China. Human paleontological research in Asia.....	11,152.42
Research aid funds, Europe.....	26,812.30
Research and developmental aid in the natural sciences in China.....	8,030.54
Royal Institution of Great Britain, London. Davy Faraday Research Laboratory. Endowment and maintenance.....	72,803.57
Royal Joseph Technical University, Budapest, Hungary. Support of investigations of problems in the chemistry of carbohydrates.....	1,000.00
Tohoku Imperial University, Sendai, Japan. Salary and expenses of visiting professors in the biological sciences	10,766.28
University of Chicago, Illinois. Research in the biological sciences.....	30,000.00
University of Freiburg im Breisgau, Germany. Equipment for research in physical chemistry.....	1,210.28
University of Geneva, Switzerland. Station of Experimental Zoology. Construction and equipment.....	24,409.12
University of Göttingen, Germany. Institute of Inorganic Chemistry. Construction and equipment...	39,164.64
University of Leiden, Netherlands. Observatory at Johannesburg, Union of South Africa. Purchase and endowment of a photographic telescope .....	1,171.90

University of Leipzig, Germany. Institute of Physiological Chemistry. Research assistants, fellows, and research aid .....	\$10,819.74
University of Minnesota, Minneapolis. Establishment of laboratory for rock analysis.....	2,770.62
✓ University of Munich, Germany. Institute of Physics. Study of electron movements and related problems...	1,300.00
University of North Carolina, Chapel Hill. Research in the natural sciences.....	5,000.00
University of Oslo, Norway. Institute of Theoretical Astrophysics. Construction and equipment.....	56,873.55
University of Oslo. Institute of Theoretical Astrophysics. Equipment.....	117.19
University of Stockholm, Sweden. Increased facilities for investigations in zoophysiology.....	4,667.25
University of Szeged, Hungary. Department of science. Maintenance.....	4,846.84
University of Szeged. Scientific equipment.....	18,562.82
University of Uppsala, Sweden. Institute of Physical Chemistry. Additional research assistants.....	4,186.76
University of Warsaw, Poland. Institute of Physics. Research apparatus.....	6,703.90
University of Washington, Seattle. Chartering and maintenance of boat for oceanographic work.....	4,715.70
Washington University, St. Louis, Missouri. General research fund.....	20,000.00
Woods Hole Oceanographic Institution, Massachusetts. Current expenses.....	90,000.00
Yenching University, Peiping, China. Endowment of science departments.....	75,416.75
Yenching University. Maintenance of science departments.....	12,500.00
Zoological Station of Naples, Italy. Current expenses..	7,000.00
<hr/> Total.....	\$1,398,741.01 ~

**THE NATURAL SCIENCES  
STAFF DURING 1933**

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**ASSOCIATE DIRECTOR IN EUROPE**  
**Lauder W. Jones**

**ASSISTANT DIRECTORS**  
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**W. E. Tisdale**

**FELLOWSHIP ADMINISTRATOR IN EUROPE**  
**Harry M. Miller, Jr.**

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\*Appointed September 1, 1933.

## THE SOCIAL SCIENCES



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## THE SOCIAL SCIENCES

During 1933, as in the years immediately preceding, The Rockefeller Foundation supported a coordinated program in the field of the social sciences, covering a variety of activities directed towards the promotion of human welfare. In accordance with policies outlined in former reports, the Foundation engaged in (1) a general program in support of the social sciences as a whole, and (2) a program of concentration within certain fields of special interest.

The general program is concerned with assistance to institutional centers especially equipped for research in the social sciences, with the provision of fellowships and grants in aid for individual scholars, and with the support of certain inclusive advisory and planning bodies. The program of concentration in specific fields of interest is limited to support of research in economic stabilization, in international relations, and in community organization and planning. Certain undertakings in social technology, cultural anthropology, and public administration, which represent less specific interests of the Foundation, also received financial assistance in 1933. The total amount appropriated for

projects in the social sciences during the year was \$1,636,000.

### A. General Program

#### 1. Institutional Centers of Research and Advanced Training

The Foundation's interest in the social sciences is expressed most fundamentally in the support of research and advanced training in institutional centers. As indicated in earlier reports, this aid is not confined to the United States, but recognizes both national and regional lines. Most of the centers are at outstanding universities. Ordinarily the funds which are granted to a university are handled by a special committee, set up to plan research and to stimulate cooperative studies. During 1933 the following institutions were receiving support:

#### SUPPORT OF INSTITUTIONAL CENTERS, 1933

Name of Institution	Amount Available	
	Outright	Conditional
<b>United States</b>		
Brookings Institution, Washington, D. C...	\$75,000	.....
Columbia University, New York City.....	50,000*	\$25,000*
Harvard University, Cambridge, Massachusetts.....	50,000*	25,000*
Leland Stanford, Jr., University, Stanford University, California.....	20,000*	25,000*
University of Chicago, Illinois.....	50,000*	25,000*
University of Chicago.....	500,000†	.....
University of North Carolina, Chapel Hill..	30,000*	.....
University of Texas, Austin.....	.....	25,000*
University of Virginia, Charlottesville.....	15,000*	.....

## Canada

McGill University, Montreal.....	\$25,000*	.....
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## Europe

Heidelberg University, Germany.....	12,000	.....
Institute of Economics and History, Copenhagen, Denmark.....	6,000	.....
International Institute of Public Law, Paris, France.....	5,000	.....
London School of Economics and Political Science, England.....	20,000*	\$10,000*
Rumanian Institute of Social Science, Bucharest.....	5,000	2,500
University of Stockholm, Sweden.....	9,000*	.....
University of Stockholm.....	5,000	.....
University of Stockholm.....	100,000†	.....
University of Oslo, Norway.....	5,000	5,000

## The Near East

American University of Beirut, Syria.....	10,000*	.....
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## The East

Nankai University, Tientsin, China.....	15,000*	.....
Yenching University, Peiping, China.....	15,000*	.....

\* Academic or fiscal year 1933-34.

† Grant for endowment available as needed.

‡ Outright grant for building.

The programs undertaken at these various centers differ widely in detail. The particular interests and qualifications of the persons carrying on research are an important factor; the facilities offered by the institution itself and those present in the immediate locality also determine the program. The general regional setting, the pressure of economic, political, and social problems of concrete nature within the experience of the investigators affect the choice of projects and the manner of approach.

The Foundation made initial appropriations in 1933 for general research programs in the social sciences at the University of California and

at the Institute of Economic and Social Research, Paris.

The Institute of Social Sciences of the University of California was established in 1929 and had a well-organized program of research at the time the Foundation's grant was made. Among the fields of special interest included in the program are the following:

(1) Ibero-American Culture. The Departments of History, Anthropology, Geography, and Economics plan coordinated studies of the distinctive civilizations of Latin America.

(2) Northeastern Asia. Several volumes of a *Documentary History of Russian Expansion Eastward to the Pacific* are already in preparation, and others are proposed.

(3) Anthropology and Related Fields. Since 1901 the Anthropological Department has carried on systematic field investigations emphasizing the ethnology, archeology, and linguistics of the native Californian. The ethnological border-line problems, involving psychology, statistics, economics, and geography, are now to be emphasized.

(4) Culture Atlas of California. Several departments will cooperate to show the evolution of the human scene in California according to the natural and cultural divisions of the state.

(5) Major Periods of Intellectual Achievement. The dramatic outbursts of intellectual activity in the past will be studied, with the idea of developing understanding of the conditions under which exceptional community achievement occurs and of comparing these periods to determine whether they have any common factors.

The appropriation to the Institute of Economic and Social Research, Paris, provided for the institute's establishment and support over a seven-year period. In 1931, after negotiations extending over several years, the Board of Trustees of the Foundation had authorized such an appropriation. Professor Charles Rist, of the University of Paris, agreed in 1933 to assume

the personal direction of the institute for at least two years, and a comprehensive plan of work was outlined. There will be four divisions or sections of the institute:

- (1) A Business Cycle Research Section, which will undertake quantitative studies of price movements, cyclical fluctuations of production, etc.
- (2) A Social and Economic Investigations Section, which will undertake research in industrial organization, on the social and economic structure of France, on agricultural developments, markets, etc.
- (3) An Information and Archives Section, which will provide for a complete collection of documentation on current economic and social problems, including copies of the periodical publications and reports of associations, business enterprises, banks, syndicates, etc. This section will be prepared to provide both students and commercial interests with valuable services of information.
- (4) Publication Section.

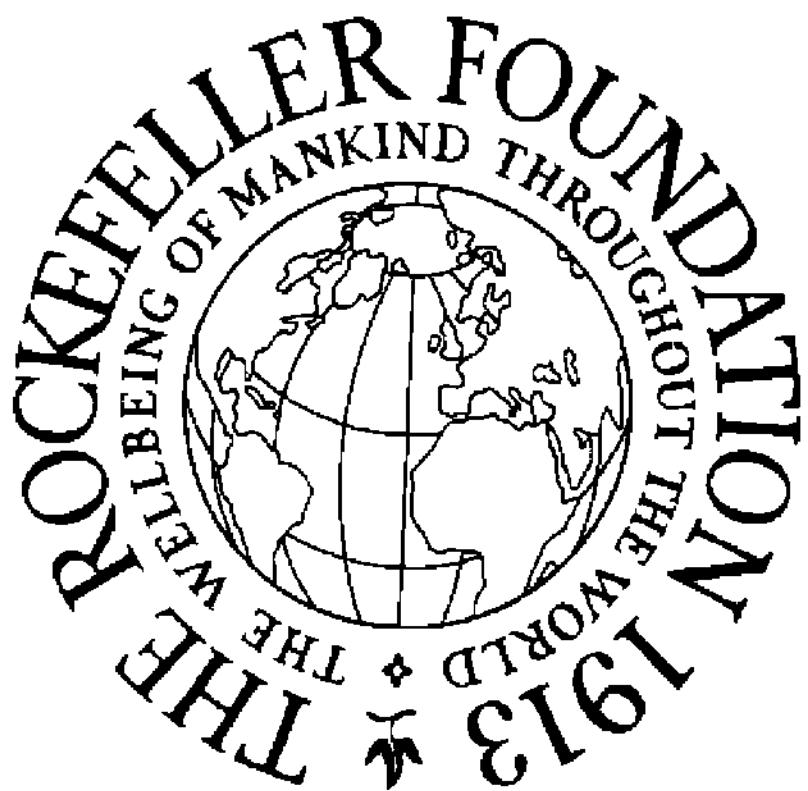
Each of the above mentioned sections will be directed by a competent specialist of professorial rank and will have selected expert, statistical, and secretarial staffs. The institute will promote research in fields that have to date been little cultivated in France and will provide for the better training of future teachers and research workers in the field of economics. It is an independent corporation with a board representing several university faculties. Its quarters are in the neighborhood of the University of Paris.

An appropriation in 1933 to the London School of Economics and Political Science provided for the continuance of support which had been given since 1924 by the former Laura Spelman Rockefeller Memorial and by the Foundation. Research assistants, clerical assistance, research

equipment, and the publication of studies have been financed. A significant group of projects have been completed and reported upon. Recently two studies in human genetics, a land utilization survey of Great Britain, and the preparation of a *New Survey of London Life and Labour* and an *Economic and Social History of London* have been under way.

An appropriation in 1933 to the Institute of Economics and History at Copenhagen continued the support which had been given since 1928 by the former Laura Spelman Rockefeller Memorial and by the Foundation. Since its establishment in 1927 the institute has promoted cooperative and inductive research into contemporary social and economic problems. The studies now in progress deal chiefly with labor, trade, and market conditions in Denmark. An investigation of the state control of agricultural prices and production in several countries will be undertaken, and a comparison will be made of the national and international effects of different experiments. Basic materials have been acquired by the institute and an effective laboratory for research has been built up. Publication of a number of studies is now taking place.

Two appropriations were made in 1933 to the Institute of Social Sciences of the University of Stockholm. The larger of the appropriations



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Social science research building, University of Chicago.

was for use over a five-year period in the development of a satisfactory social science library. The university was given a grant of \$100,000 by the Foundation in 1931 toward the construction of a social science research building, but no provision was made for equipping an adequate library in the social sciences. The larger part of the 1933 appropriation will be used to acquire a permanent nucleus of standard works.

The second appropriation was made towards the general research program in the social sciences at the University of Stockholm. It was a supplementary grant to provide for the development of research in the field of criminology and to establish a central criminological archive.

#### SUMMARY OF APPROPRIATIONS MADE TO INSTITUTIONAL CENTERS IN 1933

University of California, Berkeley. Institute of Social Sciences.....	\$ 30,000
Institute of Economic and Social Research, Paris, France....	350,000
London School of Economics and Political Science.....	34,000
Institute of Economics and History, Copenhagen.....	18,000
University of Stockholm. Institute of Social Sciences.....	30,000
<hr/>	
Total.....	\$462,000

#### 2. Fellowships

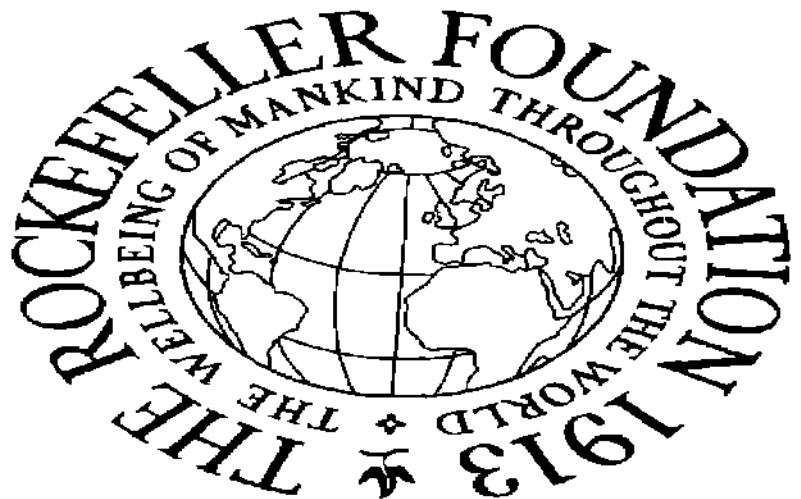
During 1933 The Rockefeller Foundation provided funds with which 208 active fellowships were maintained in the social sciences. As in former years the Social Science Research Council administered the program providing fellow-



Photograph Excised Here

London School of Economics and Political Science, to which the Foundation is contributing funds for research.

University of Hawaii, Honolulu, where the Foundation is cooperating in sociological and racial studies.



Photograph Excised Here

Members of one of the California barter groups at work. The Foundation is contributing toward a study of these cooperative self-help groups in California, where they are numerous and widespread.

ships for Americans doing advanced work in the social sciences, the necessary funds being supplied by the Foundation. The distribution, by country and field of study, of the fellowships administered by the council is as follows:

FELLOWSHIPS IN THE SOCIAL SCIENCES ADMINISTERED BY THE SOCIAL SCIENCE RESEARCH COUNCIL IN 1933, WITH FUNDS PROVIDED BY THE ROCKEFELLER FOUNDATION

Countries of Study	Number of Fellows	Fields of Study	Number of Fellows
Austria.....	1	Anthropology.....	4
England.....	14	Economics.....	14
France.....	4	Geography.....	1
Germany.....	6	History.....	9
Ireland.....	1	Law.....	1
Italy.....	1	Political science.....	5
Mexico.....	1	Psychology.....	4
Scandinavia.....	2	Sociology.....	6
South America.....	1	Social statistics and meth- odology.....	1
United States.....	14		
Total.....	45	Total.....	45

A special fellowship program in agricultural economics and rural sociology, for which the Laura Spelman Rockefeller Memorial provided funds over a five-year period, came to an end June 30, 1933. The amount made available in each of the five years was \$30,000. The Social Science Research Council administered the program. During the five-year period the total number of fellows supported was 106. In the final year there were twenty-two men holding fellowships.

The Foundation had direct responsibility during 1933 for the appointment and supervision of

163 foreign fellows working in the field of the social sciences. The table below gives data upon this group of fellowships.

FELLOWSHIPS IN THE SOCIAL SCIENCES ADMINISTERED  
BY THE FOUNDATION, 1933

Country of Origin	Number of Fellows	Field of Study	Number of Fellows
Algeria.....	1	Economics.....	43
Australia.....	11	Sociology.....	24
Austria.....	9	Political science .....	16
Belgium.....	2	History.....	13
Bulgaria.....	4	Anthropology.....	10
Canada.....	2	Psychology.....	8
China.....	4	Agricultural economics...	7
Czechoslovakia.....	3	Jurisprudence.....	6
Denmark.....	3	Human geography.....	4
England.....	16	International law.....	4
Estonia.....	3	Statistics.....	4
Finland.....	5	Criminology.....	3
France.....	17	Social anthropology.....	3
Germany.....	21	Cultural anthropology...	2
Greece.....	1	Geography.....	2
Hungary.....	6	International relations...	2
India.....	1	Social psychology.....	2
Irish Free State.....	1	Social work.....	2
Italy.....	5	Criminology and sociology	1
Japan.....	1	Cultural and social anthro-	
Latvia.....	4	pology.....	1
Lithuania.....	1	Education.....	1
Netherlands.....	4	Business administration..	1
New Zealand.....	2	Political science (philoso-	
Norway.....	2	phy).....	1
Poland.....	16	Sociology and economics.	1
Rumania.....	4	Sociology and social work	1
Scotland.....	2	Historical geography....	1
Sweden.....	2		
Switzerland.....	1		
Syria.....	1		
Turkey.....	2		
Wales.....	2		
Yugoslavia.....	2		
League of Nations.....	2		
Total.....	163	Total.....	163

## SUMMARY OF APPROPRIATIONS IN 1933 FOR FELLOWSHIPS

Social Science Research Council. Research fellowships \$90,000.00

## Appropriations for Fellowships Current in 1933

Institution	1933 Payment
Australian National Research Council, Sydney. Fellowships in anthropology.....	\$1,283.23
Fellowships administered by The Rockefeller Foundation.....	292,530.91
Social Science Research Council, New York City. Research fellowships.....	112,391.80
Social Science Research Council. Graduate fellowships in agricultural economics and rural sociology.....	25,950.60
<hr/>	
Total.....	\$432,156.54

## 3. Grants in Aid and Small Projects

Through grants in aid the Foundation provides, to a limited extent, for assistance to the individual scholar. In the United States the administration of a small fund for this purpose is in the hands of the Social Science Research Council, and awards are made by a council committee. The Paris office of The Rockefeller Foundation administers a somewhat larger fund in Europe at the discretion of the officers. The purpose of the European grants is to provide relatively small amounts to individuals, particularly former Foundation fellows, and to small institutional groups. In general, the grants are made for research in fields of specific interest to the Foundation. The present financial difficulties of governments and universities have considerably increased justifiable requests for this type of aid.

A few typical grants in aid made in 1933 are listed below:

The sum of \$3,000 was given to the Research Section of the Department of Economics and Commerce of the University of Manchester, England, to provide stipends for the research of two advanced workers in the field of economic planning and control; \$2,500 to the Institute for Research in Public Administration and Government, of the University of Budapest, Hungary, to continue the program of research in public administration under the direction of Professor Zoltan Magyary; \$3,000 for research and publication in the field of economic planning and control at the Institute of Social and Economic Sciences of the University of Bonn, Germany; \$3,000 to the Center of Social Documentation, of the Upper Normal School, Paris, for a program of inductive research in sociology; \$3,000 to the Institute of Comparative Law, University of Paris, to develop a program of research; \$3,000 to the Institute of Ethnology, University of Paris, to continue a training and research program in cultural anthropology; \$3,000 for the development of a research program in the field of cultural anthropology at the Institute of Ethnology of the University of Vienna; \$2,500 to the International Institute of Intellectual Cooperation, Paris, to secure the services of a rapporteur general and a small secretariat; \$3,700 to Max

Weinreich, a former Rockefeller Foundation fellow from Poland and research director of the Yiddish Scientific Institute of Wilno, for collection and analysis of sociological and statistical data in connection with his project for the study of Jewish youth.

SUMMARY OF APPROPRIATIONS IN 1933 FOR GRANTS IN AID

Research aid fund in Europe.....	\$50,000.00
Special research aid fund for European scholars.....	100,000.00
	<hr/>
Total .....	
Total .....	\$150,000.00
Grants in Aid Appropriations Current in 1933	
	1933 Payment
Research aid fund in Europe.....	\$38,902.60
Social Science Research Council.....	21,100.00
	<hr/>
Total.....	\$60,002.60

4. Advisory and Planning Bodies

The assistance given by The Rockefeller Foundation to voluntary organizations of scholars seeking to promote research in several fields of knowledge has been analyzed in former statements dealing with Foundation activities. In the Annual Report of the Foundation for 1932 the relationship existing between the Foundation and the Social Science Research Council was explained in some detail. The council was shown to have as its chief function the stimulation and supervision of research through a number of advisory committees. Some fields have been recognized as areas of intensive council effort: for example, international relations and so-

cial and economic research in agriculture, in industry, and in trade. Other fields are being studied by exploratory committees with the idea of developing definite programs. The council continues to depend largely upon the voluntary assistance of specialists in the social sciences who make up the various committees, and the annual conference at which programs are determined.

FOUNDATION CONTRIBUTIONS TO THE SOCIAL SCIENCE  
RESEARCH COUNCIL, 1933

Administrative budget.....	\$50,000
General research.....	50,000
Conferences and planning.....	50,000
Program in international relations.....	12,500*

\*Appropriation terminated June 30, 1933.

There will be frequent references at other points in the description of Foundation activities to the rôle played by the Social Science Research Council in administering funds and in supervising particular programs in the social sciences.

##### 5. Social Science Publications

The Foundation continued in 1933 its assistance to two publications of significance to the social sciences as a whole, the *Encyclopaedia of the Social Sciences* and *Social Science Abstracts*. The *Encyclopaedia of the Social Sciences* is now nearing completion. The Foundation has aided this venture throughout. *Social Science Abstracts*, which for four years was published under

the auspices of the Social Science Research Council, was discontinued in 1933 on account of the prohibitive costs involved. The amounts paid in 1933 by the Foundation toward these two enterprises were as follows:

<i>Encyclopaedia of the Social Sciences</i> .....	\$102,410.13
<i>Social Science Abstracts</i> .....	52,467.83

### B. Specific Research Programs

The Foundation's program for supporting research in the general field of the social sciences is supplemented by the more direct promotion of research along certain specific lines. The areas of concentration are at present limited to three: economic planning and control, international relations, and community organization and planning.

#### 1. Economic Planning and Control

During recent years the importance of scientific work upon the problem of economic instability has been evident the world over. No other problem at the moment makes a more pressing demand for the attention of scientific personnel. That any early solution of present difficulties can be found is altogether unlikely, but the necessity of using the available resources of scientific method to deal constructively and expeditiously with the problem is manifest.

Particular concern with this fundamental ailment of contemporary society leads the Foundation to its chief program of concentration. Two lines of interest are recognized: (1) The promotion of basic research bearing upon the causes of economic instability; and (2) the encouragement of studies designed to develop and perfect appropriate practical measures for minimizing the effects of such instability as is, for the time being, inescapable. In the year 1933 several appropriations were made in this field.

**To the National Bureau of Economic Research**  
The Rockefeller Foundation made an appropriation of \$225,000 towards its general support for the three-year period beginning January 1, 1934. The bureau has received Foundation aid annually since 1929, and before that the former Laura Spelman Rockefeller Memorial contributed to its support from 1925 through 1932.

The bureau carries on research in the general field of the social sciences and, more specifically, in the field of economic stabilization. In the thirteen years of its existence it has become an organization of primary importance in this field, its studies distinguished for broad representation of scientific interests and for objectivity. Twenty-two volumes resulting from research have been published, and, in addition, bulletins have been issued to subscribers. In 1933 five bulletins deal-

ing with various economic factors of the depression, namely, profits, production, employment, wages, prices, and income, were issued.

In the future the bureau plans to emphasize studies of such dynamic processes of modern economic life as the following: estimates of the national income, its total amount and distribution; studies of economic changes, including secular trends, seasonal variations, and cyclical fluctuations; prices and relations between changes in the prices of different commodities; the labor market; and an analysis of national savings and the investment of capital.

The Secretariat of the League of Nations has received from The Rockefeller Foundation a grant of \$125,000 for use over a five-year period, in the promotion of the analytical research work of its Financial Section and Economic Intelligence Service. The character of the work being carried on by the League through these sections may be illustrated by the titles of recent publications: the *Monthly Bulletin of Statistics*, the *Annual Review of World Trade*, a *Memorandum on World Production*, a *Memorandum on Balances of Payments*, a *Memorandum on Commercial Banks*, a *Memorandum on Public Finance*, the *International Statistical Yearbook*, the *Annual World Economic Survey*, and a report by Professor B. G. Ohlin entitled *The Course and Phases of the*

*World Economic Depression.* All these publications have had wide circulation, and several have stimulated similar and more intensive national investigations.

Professor Ohlin's report on *The Course and Phases of the World Economic Depression*, published in 1931, had, by the early part of 1933, gone through several editions. Beginning with this study, the Assembly of the League has requested the Economic Intelligence Service to undertake a survey of the causes of the recurrence of economic depression, especially of business cycles. The work at Geneva will undoubtedly heighten the effectiveness of regional and national studies of similar character which are in progress elsewhere.

As an extension of a five-year grant made in 1929, The Rockefeller Foundation in 1933 appropriated \$75,000 to the Economic Foundation for the completion of an international study of the history of prices and wages. The earlier grant provided \$250,000 for use over the five-year period beginning January 1, 1930, for a study of the history of prices and wages, to be carried on simultaneously in the leading European countries and in the United States. The study was planned by Sir William Beveridge of the London School of Economics and Professor E. F. Gay of Harvard University, who, from long experience

in economic investigation, saw the high potential value of a history of prices made on a comparative basis by men in different countries maintaining close contact with each other. Such a study, they felt, would provide a framework for subsequent surveys of economic and social development, giving statistical data of a dependable sort for measuring numerous phases of fundamental change.

A committee to supervise and coordinate the study was appointed, with one representative from each country in which an investigation is being made, that is, from Austria, Germany, the Netherlands, France, Spain, England, and the United States. The committee meets approximately every six months to discuss the problems arising out of the work in the individual countries.

The investigation is essentially historical in character. It is concerned with collecting and tabulating material in each country from the earliest times for which such material can be found down to the date when modern price indices become available. This final date is, in most cases, about the beginning of the nineteenth century. The study is comparative throughout, and the aim is to obtain series of prices for the same article at the same place, so that the movement of the prices from one year

to the next may be studied. The committee emphasizes uniformity of method and presentation, in the belief that the value to be drawn from a study of prices is greatly enhanced if it is possible to compare not simply the movement of prices of different articles in the same country, but prices and movements of prices of the same article in different countries, so that the effect of different government policies or local conditions may be determined.

Both in the discovery of material and in the coordination of work and methods the committee has had an unexpected measure of success. For most countries there is copious material from the sixteenth century onward, and there is some information for the fifteenth century or earlier. In England alone, through its unique system of manorial records, there is information for three centuries before 1500 as voluminous as that for the later period.

The most important task remaining to be done in connection with this study is the securing of adequate uniform publication of data in all countries. When the study was first begun it seemed possible for each country to make its own arrangements for publishing its individual report. It was later found that there would be great advantage in publishing the results on a uniform plan. Part of the Foundation's present grant

will be used for this purpose; the remainder will permit completion of the work itself.

The Institute of Economics of the University of Louvain, Belgium, received from The Rockefeller Foundation an appropriation of \$5,000 toward the development of its organization for business cycle research, over a seven-year period beginning January 1, 1933.

The institute was founded in 1927 as a center of instruction and research in economics. It is under the direction of a committee of which Monseigneur Ladeuze, the rector of the university, is president, and has among its members some of the leading economists of Belgium. It has made important contributions to studies of fluctuations in trade, industrial production, price levels, and general business conditions. It publishes a bulletin devoted largely to studies of the business cycle.

The institute is supported by the university, by private contributions, and by the proceeds from the sale of its publications. The Foundation's contribution will provide the staff with a statistician specially trained in economics.

Since 1931 The Rockefeller Foundation has aided the Industrial Relations Counselors, Inc., in carrying out various studies relating to unemployment. The unemployment insurance plans in operation in Great Britain, Belgium,

Germany, and Switzerland, and the industrial pension plans in the United States were studied by this organization, and the results were published. Following this, a survey was undertaken of the administrative procedure of employment exchanges in Sweden, Great Britain, Germany, France, Switzerland, and Canada. In the course of the study of employment exchanges it was recognized that there was need for a study of the administrative procedure of employment insurance which the earlier studies did not emphasize, the purpose of such a study being the establishment of a basis of discussion as to what constitutes desirable procedure in the United States. The Foundation contributed \$2,500 toward the expenses of a study of such procedures in foreign countries during 1933.

SUMMARY OF APPROPRIATIONS IN 1933 FOR RESEARCH IN  
ECONOMIC PLANNING AND CONTROL

National Bureau of Economic Research, New York City.....	\$225,000
League of Nations. Financial Section and Economic Intelligence Service, Geneva, Switzerland.....	125,000
Economic Foundation, New York City. Study of the history of prices.....	75,000
University of Louvain, Belgium. Institute of Economics...	5,000
Industrial Relations Counselors, Inc., New York City.....	2,500
Total.....	<hr/> \$432,500

The larger part of the Foundation's support of research in the field of economic stabilization is represented by the list of organizations receiving

current support. The following list is, therefore, given to indicate the extent of program:

SUPPORT OF RESEARCH IN THE FIELD OF ECONOMIC STABILIZATION

Name of Institution	Amount Available in 1933	
	Outright	Conditional
Austrian Institute for Trade Cycle Research, Vienna.....	\$4,000	.....
Brown University, Providence, Rhode Island. Study of gold standard.....	20,000*†	.....
Dutch Economic Institute, Rotterdam, Nether- lands.....	5,000*	.....
Economic Foundation. Study of history of prices.....	75,000‡	.....
Harvard University, Cambridge, Massachu- setts. Research in industrial hazards.....	125,000*	.....
Industrial Relations Counselors, Inc. Adminis- trative procedure of employment exchanges and unemployment insurance.....	14,000	.....
Institute of International Economics and Mari- time Trade, Kiel, Germany.....	26,000*	.....
National Bureau of Economic Research, Gen- eral budget.....	50,000	\$25,000
University of Minnesota, Minneapolis. Un- employment study.....	75,000‡	.....
University of Pennsylvania, Philadelphia. Wharton School of Finance and Commerce. Industrial Research Department.....	25,000*	.....

\* Academic or fiscal year 1933-34.

† Available until Oct. 1, 1934.

‡ Available as needed.

## 2. International Relations

A second field of concentration for the Foundation's program in the social sciences is the study of international relations. Two immediate objectives are recognized: the promotion of better understanding among people of different nationalities in situations involving issues of a controversial nature; and the establishment and

development of the rôle of the expert in the amicable settlement of international disputes. The Foundation's program is a long-range undertaking relying chiefly upon the promotion of research of disinterested character.

An initial grant to the **Foreign Policy Association** for the work of its Research Department was made by the Foundation in 1933. The association was established in 1921 for the purpose of studying all sides of every important international question affecting the United States, and of communicating the results of such study to as large a number of the American people as possible, that there may be public understanding of foreign problems. The association's membership of more than 12,000 is dispersed over forty-eight states and twenty-eight foreign countries. Branches in nineteen cities have organized institutes, discussion meetings, and study groups. At public meetings held from time to time the members of the association participate and speakers of all nationalities present the various aspects of questions involving America's foreign relations. At the New York headquarters the functions of research, publication, and radio broadcasting are centered. A staff of eleven, each member of which is responsible for a specific field of interest, constitutes the Research Department. "Foreign Policy Reports," a fort-

nightly devoted to the continuous and systematic analysis of current international problems, and presenting a single subject in each issue, is the chief publication of the department. A two-page weekly on current events and occasional pamphlets are supplied to all members of the association. A bureau in Washington furnishes information to members of Congress, to the State Department, and to foreign legations and embassies.

The association has no endowment; it is supported by the dues of members and by contributions. The Foundation's grant is intended as an emergency measure, to enable the association's research department to continue to function normally during the years 1933 and 1934.

The Foundation appropriated \$50,000 in 1933 to the **Fiscal Committee of the League of Nations** toward the expenses of continuing its study of international taxation problems for a further three-year period. An earlier appropriation made in 1930 provided \$90,000 for use over a three-year period. The Fiscal Committee of the League of Nations was organized in 1929 to engage in research which would facilitate the adoption of international agreements to prevent double taxation and other forms of taxation causing friction between nations and between citizens of different countries. The committee

consists of thirteen members representing as many countries, and there are, in addition, corresponding members representing thirty-four other countries.

The following accomplishments of the committee may be mentioned:

- 1) Completion of a survey of law and practice in thirty-five states with regard to taxation of foreign and national enterprises, and publication of *Taxation of Foreign and National Enterprises in France, Germany, Spain, the United Kingdom, and the United States*. Similar studies of the tax systems of thirty other countries are in course of publication.
- 2) Acceleration of the movement to conclude bilateral treaties, negotiated in several instances by the experts attending the Fiscal Committee meetings.
- 3) Drafting of model plurilateral conventions suitable for adoption by a large number of states.
- 4) Drafting of an accepted definition distinguishing between a bona fide commission agent or broker, through whom business may be done without incurring tax liability, and a permanent establishment liable to taxation.
- 5) Prescription of uniform rules for the taxation of patent and copyright royalties.
- 6) Cooperation in the drafting of conventions relating to the treatment of foreigners and to various taxation questions.

Within a short time the committee expects to be able to prepare a multilateral treaty for the prevention of double taxation upon all forms of income except dividends and interest. This treaty has a good chance of being adopted by a considerable number of the leading commercial nations, especially since the committee's work has perceptibly reduced international suspicion and hostility toward the discussion of taxation problems.

An appropriation of \$24,000 was made by the

Foundation to the Geneva Research Center, to be applied to its general budget over a three-year period beginning September 1, 1933.

As the seat of the League of Nations, Geneva has become a clearing house for information on international problems; but, because of the non-membership of the United States in the League, and because of the great distance between Europe and the United States, Americans interested in international affairs have found it difficult to obtain information regarding much of the activity that centers in the League. To overcome this difficulty, a small group of Americans living in Geneva have for some years attempted to present reliable accounts of this activity. In the beginning the accounts consisted of circular letters, sent at regular intervals to interested persons; later, reviews were furnished for such agencies as the Council on Foreign Relations and the American Academy of Political and Social Sciences. In 1930 the Geneva Research Center was organized to take over the program. Mr. Malcolm W. Davis, editor of the Yale Press, was made director of the center, and Mr. C. C. McIvor became secretary. The center now issues two monthly publications: *Geneva, A Monthly Review of International Affairs*, and *Geneva Special Studies*. The former gives a clear, concise account of international develop-

ments of the previous month, so far as the League is concerned; the latter is devoted to subjects of particular interest, such as the following: the first conference for the codification of international law; the League and Manchuria; the League and China; the movement to unify laws regarding bills of exchange and checks; the Palestine Mandate; American cooperation with the League; the League and aviation; and the League and economic reconstruction.

Appropriations totaling \$45,000 were made during 1933 toward the general budget of the **American Council of the Institute of Pacific Relations** for use during the years 1933 and 1934.

The Institute of Pacific Relations seeks to advance international understanding, particularly in the Pacific area. Its work is carried out through the Pacific Council and through the national councils in the nine countries contributing to its general budget, namely, the United States, Australia, Canada, China, Great Britain, Japan, the Netherlands, New Zealand, and the Philippine Islands.

The Pacific Council administers the general headquarters of the institute in Honolulu, prepares for the biennial conferences, and publishes a quarterly journal, *Pacific Affairs*. The national councils carry on a continuous program of education and study on problems of the Pacific

in their respective countries, stimulating interest and research in universities and among other groups. The American Council assumes the major responsibility for financing the administrative expenses of the Pacific Council and is a large contributor to conference expenses. In addition to its contributions to the American Council, the Foundation is providing \$50,000 a year over a five-year period ending December 31, 1935, for the support of the research program of the institute.

A grant of \$30,000 was made to the German School of Politics (March 17, 1933) in support of a program of research and advanced training in the field of political science and international relations during the period April 1, 1933, to March 31, 1934. This was in continuance of similar aid given the preceding year.

On April 27, 1933, the German Government announced the dissolution of this school and the establishment in its place of two new and entirely separate organizations, the German School of Politics, a state-supervised teaching institute under the direct control of the Reich minister for popular enlightenment and propaganda, and a privately financed research institute to be known as the Institute for Research in World Politics. The president of the original school was appointed as liquidator, and under

his direction plans were made for the termination of the research program in which the Foundation was interested. The Foundation made \$10,000 of its grant available to cover the expenses incurred in, or incidental to, the liquidation of this research program.

An emergency grant of \$25,000 was made by the Foundation to the American Geographical Society, toward the completion and publication of a millionth map of Hispanic America.

The preparation of this map is part of a project, begun in 1909 by international agreement, to provide a map of the world of uniform style and on a scale of 1:1,000,000. The Hispanic-American section of the map was undertaken by the American Geographical Society. It represents an area of 8,000,000 square miles, covering all of the land areas and contiguous waters of the Western Hemisphere south of the Mexico-United States boundary, and including the West Indies. When finished, it will consist of 102 sheets. The society began work on the map in 1920. The task is scheduled for completion in 1935.

The need for a new map of Hispanic America came to the attention of the American Geographical Society in 1919, when Secretary of State Lansing requested the society to suggest a form of settlement of the Guatemala-Honduras boundary dispute. The society suggested an

economic survey of the disputed territory and was asked to draw up plans for such a survey. Because of the inadequacy of existing maps, the society was obliged to concentrate its efforts upon cartography. Detailed maps based on field work were produced and the disputants were for the first time given a suitable picture of the topography of the territory in question. Largely as a result of the society's report, a peaceful settlement was effected in 1933.

The society's work on the Guatemala-Honduras dispute has since developed into a broad program of Hispanic-American research, having for its chief object the preparation of a millionth map of that area. The governments of all the Hispanic-American countries are cooperating with the society in this work, as are a number of scientific institutions and individuals. The staff employed by the society for the purpose consists of a director, four compilers, and five draftsmen. Forty-two sheets have already been published and are now being widely used.

Conditions resulting from the economic depression have made inaccessible the funds set aside by the society for the completion of the map. The Foundation's grant was intended as an emergency measure, to permit continuation of the work in progress until the society's funds become available.

**SUMMARY OF APPROPRIATIONS IN 1933 FOR STUDIES  
OF INTERNATIONAL RELATIONS**

Foreign Policy Association, New York City. Research Department.....	\$50,000
League of Nations, Geneva, Switzerland. Fiscal Committee	50,000
Geneva Research Center, Switzerland.....	24,000
Institute of Pacific Relations. American Council, New York City.....	45,000
German School of Politics, Berlin.....	30,000
American Geographical Society, New York City. Millionth map of Hispanic America.....	25,000
	<hr/>
	\$224,000

During the year 1933 support was given to a number of organizations, under former appropriations in the field of international relations.

**APPROPRIATIONS IN THE FIELD OF INTERNATIONAL RELATIONS  
CURRENT IN 1933**

	Amount Available	
	Outright	Conditional
American Geographical Society. Millionth map of Hispanic America.....	\$25,000†	.....
American Institute of Mining and Metallurgical Engineers, New York City. Mineral inquiry.....	5,000†	.....
Council on Foreign Relations, New York City. Research program.....	25,000	.....
Foreign Policy Association. Research Department.....	25,000	.....
Geneva Research Center.....	8,000*	.....
German School of Politics.....	10,000	.....
Harvard University and Radcliffe College. Research in international relations.....	50,000*	.....
Institute of Pacific Relations, Honolulu, Hawaii. Social science research.....	25,000	\$25,000
Institute of Pacific Relations. American Council, New York City.....	10,000	.....
Institute of Pacific Relations. Banff conference	20,000	.....
League of Nations. Fiscal Committee. Study of international taxation problems.....	50,000†	.....
League of Nations. Publication of monetary and banking laws.....	40,000†	.....

Notgemeinschaft der Deutschen Wissenschaft, Berlin, Germany. Research in international relations.....	\$25,000†	.....
Postgraduate Institute of International Studies, Geneva, Switzerland. General budget.....	85,000	.....
Royal Institute of International Affairs, London, England. Research program.....	30,000*	.....

\* Academic or fiscal year 1933-34.

† Total amount of appropriation; available as needed.

### 3. Community Organization and Planning

New appropriations in 1933 within the third area of concentration—community organization and planning—were made largely for projects designed to improve certain services of the Federal Government. Recognition of opportunities for a limited program in the field of public administration seemed appropriate in view of the greatly expanding activities of the government and the closely related undertakings of the Spelman Fund.

A grant of \$100,000 to the Social Science Research Council enabled that organization, acting with the American Statistical Association, to set up a **Committee on Government Statistics and Information Services**, which has rendered invaluable aid in the reorganization and improvement of reporting services which are essential to the government's several emergency programs. This work will be of special importance throughout the present transitional period at Wash-

ton. As a non-governmental body, the committee can work closely with individuals within the various federal bureaus, divisions, offices, and other organizations engaged in statistical and informational work, and can be instrumental in establishing informal and friendly relationships with the representatives of outside agencies and organized industrial, agricultural, and social groups upon which the National Recovery Act has placed increased responsibility for the collection of statistical data.

An appropriation of \$50,000 was made by the Foundation to the Science Advisory Board in support of its budget for one year, beginning November 1, 1933. The Science Advisory Board was created by executive order of President Roosevelt on July 31, 1933, to work on specific problems of the various departments of the Federal Government through the National Academy of Sciences and the National Research Council. Special committees were appointed and a number of conferences were held for the determination of the following program: a study of the Weather Bureau; recommendations for combining the Geological Survey and the Bureau of Mines in order to better the handling of mineral economics and statistics; a survey of the extent to which railroads avail themselves of the resources and opportunities of scientific research;

naval research; a study of the Bureau of Standards; the formulation of plans for land classification in connection with the programs of the Tennessee Valley Authority and the Departments of the Interior and Agriculture; archeological studies in the Tennessee Valley; participation by the government in the maintenance of the International Scientific Unions; a study of the scientific and biological ratings of Civilian Conservation Corps men; studies in genetics; general coordination of new government activities; studies of the social and economic aspects of technical problems; and formulation of a permanent government policy with regard to scientific research.

In general, the program of the Science Advisory Board has an objective which is quite similar to that of the Committee on Government Statistics and Information Services, since in both instances work is directed toward the utilization of scientific knowledge and its integration into social, economic, and governmental activities.

A grant was made to the Community Council of Philadelphia for the continuance of its research program during the year beginning Oct. 1, 1933. The council has a membership of 215 Philadelphia organizations, representing every type of welfare, health, educational, and civic agency under public and private auspices. Its research

program is carried on by a joint committee of the council and the Pennsylvania School of Social Work. Every project undertaken is planned to bear results in the practical administration of the social welfare agencies. The studies carried on during 1933 dealt specifically with the outstanding welfare problem of the past two years—unemployment. There is conclusive evidence that these studies helped to determine welfare policies not only in Philadelphia but in other cities of the United States.

**SUMMARY OF APPROPRIATIONS MADE IN 1933 FOR RESEARCH ON  
COMMUNITY ORGANIZATION AND PLANNING**

Social Science Research Council. Committee on Government Statistics and Information Services, Washington, D. C. ....	\$100,000
Science Advisory Board, Washington, D. C. ....	50,000
Community Council of Philadelphia, Pennsylvania. Joint Committee on Research.....	7,500
Total.....	<u>\$157,500</u>

**APPROPRIATIONS FOR COMMUNITY ORGANIZATION AND PLANNING  
CURRENT IN 1933**

	Amount Available	
	Outright	Conditional
Community Council of Philadelphia. Joint Committee on Research.....	\$7,500*	.....
Harvard University. School of City Planning Research Committee on Social Trends, Washington, D. C. ....	30,000*	\$5,000*
Science Advisory Board. General budget....	33,104†	.....
Social Science Research Council. Committee on Government Statistics and Information Services .....	50,000*	.....
Syracuse University, New York. School of Citizenship and Public Affairs. Research and training in public administration.....	100,000*	.....
	10,000*	.....

University of California. Bureau of Public Administration.....	.....	\$20,000*
University of Chicago. Local community research.....	\$30,000*	20,000*
University of Chicago. Research and training in public administration.....	25,000*	.....
University of Cincinnati, Ohio. Training in public administration.....	20,000*	.....
Welfare Council of New York City. Research Bureau.....	65,000*	.....

\* Academic or fiscal year 1933-34.

† Actual payment. Appropriation expired June 30, 1933.

### C. Former Programs

#### 1. Schools of Social Work

For a number of years the former Laura Spelman Rockefeller Memorial and subsequently The Rockefeller Foundation gave limited support to schools of social work. The Foundation has made grants to five schools, providing funds on a tapering basis over a period of years, and is thus drawing to a close its program in this field. During 1933, however, an additional appropriation was made to Western Reserve University, as emergency aid in a difficult situation which was facing the School of Applied Social Sciences. The 1933 appropriation was supplementary to the amount available to the school under the Foundation's earlier grant (1932), which provided \$82,000 for use over an eight-year period.

#### SUMMARY OF APPROPRIATIONS IN 1933 FOR SCHOOLS OF SOCIAL WORK

Western Reserve University, Cleveland, Ohio. School of Applied Social Sciences.....	\$10,000
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## APPROPRIATIONS FOR SCHOOLS OF SOCIAL WORK CURRENT IN 1933

	Amount Available
	Outright      Conditional
National Catholic School of Social Service, Washington, D. C. ....	\$10,000*
New York School of Social Work, New York City. ....	30,000*
Tulane University of Louisiana, New Orleans. School of Social Work. ....	12,000*
University of Chicago. School of Social Service Administration. ....	25,000*      \$25,000*
Western Reserve University. School of Ap- plied Social Sciences. ....	25,000*

\* Academic or fiscal year 1933-34.

## 2. Cultural Anthropology

Cultural anthropology has had some support from the Foundation in recent years, but at present the program in this field is inactive. The only grant made in 1933 was for the continuation of work at Columbia University which had been supported for several years. For the year beginning July 1, 1933, \$5,000 was provided for anthropological research and training; in 1932, \$7,500 was given for the same purpose, permitting eight students to have field experience under the direction of Professor Franz Boas.

## SUMMARY OF APPROPRIATIONS IN 1933 FOR CULTURAL ANTHROPOLOGY

Columbia University. Research in anthropology..... \$5,000

## APPROPRIATIONS IN CULTURAL ANTHROPOLOGY CURRENT IN 1933

	Amount Available
	Outright      Conditional
Australian National Research Council, Sydney. Ethnological research .....	\$6,500†
Australian National Research Council. An- thropological research.....	20,000*

Bernice P. Bishop Museum, Honolulu, Hawaii.			
Research in Polynesian anthropology.....	.....	\$6,500	
Columbia University. Research and training in anthropology.....	.....	\$5,000*	
Harvard University. Anthropological research		15,000*	.....
Institute for Comparative Research in Human Culture, Oslo, Norway.....	.....	5,000	
International Institute of African Languages and Cultures, London, England. General budget.....	.....	25,000*	25,000*
Laboratory of Anthropology, Santa Fe, New Mexico. Field training course.....	.....	10,000	
Notgemeinschaft der Deutschen Wissenschaft, Berlin. Anthropological study of German population.....	.....	25,000	
Royal Anthropological Institute of Great Brit- ain and Ireland, London. General budget.		2,000*	.....
Tulane University of Louisiana. Department of Middle American Research.....	.....	15,000*	
University of Chicago. Anthropological re- search.....	.....	15,000*	

\* Academic or fiscal year 1933-34.

† Available as needed.

#### D. Unclassified Grants

Certain appropriations were made, and support under former appropriation was continued, for undertakings which cannot be classified under any of the specific heads mentioned above. Two appropriations made in 1933 represent an interest—not yet sufficiently defined to be regarded as an area of concentration for the Foundation's program in the social sciences—in the promotion of research in the field of personality and behavior.

In continuation of a five-year grant of \$150,000 made by the former Laura Spelman Rockefeller

Memorial in 1928, the Foundation appropriated to the Canadian National Committee for Mental Hygiene the sum of \$60,000, for use over a four-and-one-half year period in support of its program of cooperative research in the social sciences and mental hygiene. This program of research has involved cooperative studies in seven Canadian universities: McGill University and the Universities of Toronto, Montreal, Manitoba, Saskatchewan, Alberta, and British Columbia. During the five years of its existence the program has been under the general direction of the Mental Hygiene and Social Science Research Council, composed of representatives from the universities, selected jointly by the National Committee for Mental Hygiene and the universities, and has dealt with mental hygiene problems from a broad point of view. Although the problems treated have been approached from a social-scientific rather than a medical angle, there has nevertheless been provision for the fullest possible utilization of the contributions of clinical psychiatry, physiology, and biochemistry. The achievements of the past five years may be summarized as follows: (1) The public school is discovered to be an entirely practicable setting for longitudinal studies of child development. (2) In the department of preventive medicine at McGill University, the integration of the social

and mental outlook in dealing with specific problems is being effected. (3) At the University of Toronto a strong department of psychology is being developed and is exerting marked influence throughout the country. (4) Cooperative endeavors in public health and public welfare are being successfully promoted between governments and universities. (5) University centers are being introduced to research problems that have the double effect of stimulating and strengthening the social sciences and promoting public welfare. More than twenty persons are now giving their entire time to research under this program and a number of others are participating. The Foundation's appropriation will be used toward the continuation of the work begun in the seven Canadian universities.

The University of Hawaii received from the Foundation an appropriation of \$45,000 for use over a three-year period beginning July 1, 1933, in support of sociological and racial studies. The former Laura Spelman Rockefeller Memorial and the Foundation have given financial support to these studies since 1926, recognizing the fact that Hawaii offers exceptional opportunities for a study of racial problems. It has a native stock having a history in Hawaii of more than a thousand years, to which have been added within the past century Caucasians from the United

States and Europe, Chinese, Portuguese, Puerto Ricans, Japanese, and Filipinos. A number of researches in physical anthropology and in the psychological and sociological aspects of these interracial relationships have been completed and published. Psychological research has centered upon non-language tests of mental ability adapted for racial comparisons, and the improvement of mental diagnosis by various tests with a view to collecting and analyzing data on racial differences.

Two large projects in the field of physical anthropology have been outlined for future consideration: a study of the Hawaiian-Chinese cross in comparison with the pure Hawaiian and the pure Chinese, and a study of the Japanese in Hawaii in comparison with the same stocks in Japan, to determine what changes are taking place as a result of the new environment and mode of living. Future research will include studies of interracial marriage, the rôle of the plantation in Hawaii, the decline of the native population, and the Japanese family in Hawaii.

SUMMARY OF UNCLASSIFIED APPROPRIATIONS IN 1933

Canadian National Committee for Mental Hygiene, To-	
ronto .....	\$60,000.00
University of Hawaii, Honolulu. Research in racial	
problems.....	45,000.00
	<hr/>
	\$105,000.00

In the list of unclassified undertakings which are receiving current Foundation support several past and present interests are represented. In Group 1 are listed organizations carrying on research in the field of personality and behavior. Group 2 is composed chiefly of enterprises, formerly supported by the Laura Spelman Rockefeller Memorial, to which financial aid is being given for the completion of a project or until other support can be found for a continuing program.

#### UNCLASSIFIED APPROPRIATIONS CURRENT IN 1933

	Amount Available
	Outright      Conditional
<b>Group 1</b>	
Behavior Research Fund, Chicago, Illinois.	
General budget.....	\$25,000*
Canadian National Committee for Mental Hygiene. Research.....	10,000
Massachusetts Department of Mental Dis- eases, Boston. Statistical study of the insane.....	\$25,000†
University of Hawaii. Research in racial problems.....	25,000*
University of Vienna, Austria. Psychologi- cal Institute.....	4,000*
Yale University, New Haven, Connecticut. Institute of Human Relations. Psycho- logical research .....	150,000*
<b>Group 2</b>	
American Historical Association, Wash- ton, D. C. International Committee of Historical Sciences.....	6,000
Association for the Study of Negro Life and History, Washington, D. C.....	7,500*‡
Jean Jacques Rousseau Institute, Geneva, Switzerland. General budget.....	7,000*
Joint Vocational Service, Inc., New York City. General budget.....	3,600

National Institute of Industrial Psychology, London, England. Research program....	£2,000	.....
University of Denver, Colorado. Bureau of Business and Social Research.....	\$2,500*	.....
Yale University. Investigations in the School of Law.....	11,000*	.....

\* Academic or fiscal year 1933-34.

† Total amount of appropriation; available as needed.

‡ Available 1932-33; expired June 30, 1933.

**THE SOCIAL SCIENCES  
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## **EMERGENCY GRANTS**



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## **EMERGENCY GRANTS**

### **Special Committee for Emergency Projects**

In April 1933 the Board of Trustees of The Rockefeller Foundation appointed three of its members as a special trustee committee to investigate opportunities for assistance to the study of pressing social problems and to recommend for aid projects having urgency in connection with the existing national and world situation. Two main types of project were envisaged: studies providing for concurrent appraisal and improved planning of important sections of the Federal Government's recovery, relief, and reconstruction programs; and undertakings involving collaboration of private agencies in the prosecution of emergency programs of federal, state, and local governments. Aid to certain emergency projects, as enumerated in the section below, was given as a supplement to the activities of the regular program of the Foundation. The trustees made \$1,500,000 available for this program; and during 1933 appropriations totaled \$589,000.

#### **Brookings Institution**

#### **Concurrent Economic Studies**

The Brookings Institution received from the Foundation during the year three appropriations

for concurrent economic studies: \$115,000 for a study of the administration of the National Recovery Act during the two-year period beginning July 1, 1933; \$100,000 for a study, during the period from June 15, 1933, to December 31, 1934, of the Agricultural Adjustment Act and its effect upon agriculture and general economic life; and \$35,000 for a study, during the year beginning July 1, 1933, of the government's financial policies.

The two-year study of the administration of the National Recovery Act will proceed along the following lines: systematic collection of the industrial codes and their preservation in a form convenient for the use of students of the social sciences; attendance at hearings by one of the participants in the study, for the purpose of recording and interpreting the major issues arising in the making of the codes; study of the effects of the act upon other aspects of the government program and upon general economic and social conditions; case studies of the effects of the act in particular industries representing different phases of economic life and different geographic location. Various university departments of economics and several bureaus of business research are collaborating in the case studies of industries.

The study of the Agricultural Adjustment Act

will involve an investigation of the steps taken from the beginning by the administration in interpreting the act and in making provision for its enforcement. For planning, correlating, and interpreting the study as a whole, the Brookings Institution has set up a headquarters staff in Washington. This staff is under the general supervision of the permanent research personnel of the institution. Local observers, drawn from faculty members, experiment station workers, and graduate students connected with agricultural colleges in various representative states, supplement the Washington unit. The headquarters group has access to the data essential to the study and also to the persons directing the government experiment. The observers are placed strategically throughout the country to carry out investigations and researches. In order to have the critical judgment of a group not made up entirely of agricultural economists, the institution has appointed as advisers for the study several persons whose interests lie in fields other than agricultural economics.

The study of the government's financial policies will emphasize the following points: the problem of investigation and interpretation of the inflation program, as viewed from several angles; a summary analysis of the numerous financial measures; an analysis of the

relation of gold currency to prices; examination and interpretation of the experiences of England, Finland, Sweden, and Japan in the management of currencies during the past few years, and of the United States, Germany, Czechoslovakia, and Austria in maintaining gold parities by restrictions on exchange dealings; and an analysis of the new Banking Act.

**The Social Science Research Council in Cooperation with  
the Federal Emergency Relief Administration  
in Studies of Relief Cases**

The Foundation appropriated \$50,000 to the Social Science Research Council to enable it to provide the Federal Emergency Relief Administration with a special research staff to engage in statistical studies of relief cases. The Federal Emergency Relief Administration, through its Division of Research and Statistics, recently made a complete census of families and resident non-family persons receiving relief from public funds. This census makes available for the first time basic information upon the color, sex, and occupation of the great body of relief cases. The Foundation's grant is being used to provide statistical analysis and field investigation of a number of problems involving these data, which the Relief Administrator believed to be highly important but which could not be handled by the

available staff of the Division of Research and Statistics of the Federal Emergency Relief Administration. The problems which are being studied include: the employability of persons now on the relief rolls; the adequacy of the relief given; the effects of unemployment upon transiency; the analysis of closed relief cases with particular reference to the reasons for leaving the relief rolls; the success of persons receiving relief, as compared with other unemployed persons, in securing employment; and the employment opportunities, in various industries and areas, for persons on relief rolls.

**American Municipal Association  
Advisory Service on Public Works**

Two appropriations, totaling \$130,000, were made during 1933 to the American Municipal Association for the support of an advisory service for municipalities of the United States, particularly in connection with the presentation of applications to the Public Works and the Civil Works Administrations. A municipality seeking assistance is required to present a comprehensive plan of the work proposed, in order to establish the eligibility of the project for consideration and its feasibility from engineering, financial, and legal standpoints. The larger cities usually have in their employ experts upon

whom they may call to prepare the comprehensive data required. The function of the American Municipal Association is to provide advice and assistance in the preparation of projects for smaller cities not having such experts on their staffs.

The association is composed of twenty-five state leagues of municipalities with an aggregate membership of about 5,000 cities and towns. Some municipalities in states where leagues do not exist are also members. The leagues are equipped to furnish advisory service to municipalities in their states. In areas where the leagues are not active, the association chooses and supervises agents.

**Social Science Research Council  
Commission of Inquiry on National Policy in  
International Economic Relations**

A grant of \$60,000 was made to the Social Science Research Council toward the support of its Commission of Inquiry on National Policy in International Economic Relations. The purpose of the commission is to study and report on what the policy of the United States should be toward such problems as international monetary standards, foreign loans and other capital movements, tariffs and trade barriers, in the light of changing national and world conditions. Its investigations will be carried on through the me-

dium of public hearings in several large cities, including New York, Chicago, Des Moines, Denver, San Francisco, Houston, New Orleans, and Washington. Experts and representatives of all groups interested in the problems under consideration will be asked to state their views.

The commission, of which Robert Hutchins, president of the University of Chicago, is chairman, will study the possible effects of various policies, ranging all the way from complete withdrawal from foreign dealings to full cooperation. It will give consideration to the social and material welfare of the American people and to conditions affecting world peace. A report with recommendations is planned for issue about October 1, 1934. Though President Roosevelt has given his approval to the project, the commission will function as an independent body, responsible neither to the government nor to the Social Science Research Council, making its report directly to the people of the United States.

**Social Science Research Council  
Study of Unemployment Reserves and Relief**

Since there is increasing recognition of the need for developing correlated programs for dealing with unemployment and providing general relief, it was felt that aid for a general survey of

practices and policies fell appropriately within the scope of the emergency fund. The task is one of such magnitude, however, involving analysis and appraisal of the relative merits of private relief and the several categories of public relief, in the varied forms that have been attempted or suggested, that it seemed best to provide for a preliminary study to work out a practicable procedure for the larger endeavor.

An appropriation of \$5,000 was made to the Social Science Research Council to enable it to appoint and support an exploratory committee to canvass the field, draft a general plan of procedure, suggest a working personnel, and recommend the agency best qualified to conduct a comprehensive study in this important field.

**Social Science Research Council  
Tennessee Valley Study**

The Foundation appropriated to the Social Science Research Council the sum of \$10,000 to be used during the nine-month period beginning July 1, 1933, for research centering upon developments in the Tennessee River Valley. The study, which is being conducted under the supervision of the Southern Regional Committee of the council, and is directed by Professor Howard W. Odum, of the University of North Carolina, is an extension of an earlier project—a general so-

cial and economic study of the South, under the direction of Professor Odum, to which the General Education Board contributed \$45,000. Work in 1933 centered upon an intensive survey of the Tennessee Valley, where the Federal Government is undertaking extensive engineering projects involving agricultural, industrial, and social adjustments of great significance. The director of the Tennessee Valley Authority is giving social scientists an opportunity to participate in this program by providing information and basic data.

The program of the Southern Regional Committee is being carried out by two units: a research unit, with headquarters at the University of North Carolina, where the material of the committee is assembled; and a cooperating unit located at the University of Tennessee near the actual center of the field work.

#### **Slum Clearance Committee of New York**

A grant of \$5,000 was made by the Foundation for the preliminary work of the Slum Clearance Committee of New York. The committee was created at the request of Mr. Robert Kohn, director of housing of the Federal Emergency Administration of Public Works, to lay the foundation for the establishment and future operation of a local housing authority. It has

already made excellent progress in the directing of the drafting of the Municipal Housing Authorities Law.<sup>1</sup> It has collected much important information and is preparing maps, charts, and statistical data defining the areas in the boroughs of Manhattan and Brooklyn in which there is the greatest need for slum clearance and rehabilitation.

**Columbia University  
Study of the Effects of Sales Taxes**

Columbia University received from the Foundation an appropriation of \$28,000 for a study of the effects of sales taxes in the United States. The investigation, made during a six-month period ending December 31, 1933, under the direction of Professor Robert M. Haig, embraced twenty-seven states, including eighteen in which the sales tax is in effect and others in which it has been under consideration. An analysis was made of the economic interests which supported and opposed the measures, the statutes adopted, the plans followed by the administrators to meet the problems they encountered, the fiscal results achieved, and the legal questions raised by this new form of taxation.

The study consisted of statistical and non-statistical surveys. For the statistical survey large numbers of taxpayers and others were in-

<sup>1</sup>Passed by the New York State Legislature and signed by the Governor in February 1934.

terviewed personally in an attempt to discover how they had felt the effects of the sales tax and what opinion they held as to its usefulness. Tabulations were made of the answers received. The non-statistical survey involved analysis of interviews with state officials, representatives of business organizations, and others in key positions, who were asked to explain how and why the sales tax came into existence.<sup>1</sup>

**University of California**

**Field Studies of California Barter Groups**

The University of California received from the Foundation a grant of \$3,000 for a study, under the direction of Professor Paul S. Taylor, of self-help cooperative groups in California. An intensive study of the more important barter groups was made by Professor Taylor during the summer of 1933 with the aid of a grant from the Social Science Research Council. Subsequently, the Federal Emergency Relief Administration decided to grant subsidies to certain cooperatives for the purpose of experiment. During the first half of 1934 Professor Taylor and an assistant will make observations in all sections of the state of California for the period of the experiment.

The growth of self-help or barter cooperative groups among the unemployed has been an interesting development of the past two years and

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\*The results of the inquiry were published in book form in May 1934.

particularly widespread on the Pacific Coast. In California it has developed the proportions and temper of a movement, with local, county, and state-wide organizations. Probably more than half of all persons in the United States affiliated with self-help cooperatives reside in the southern part of California; and the greatest concentration is found in Los Angeles County.

The purpose of these cooperatives is to satisfy the basic requirements of food, clothing, and shelter without resort to charity. The characteristic method of operation, especially in Southern California, is to require of members from one to three days' labor a week, in return for a weekly supply of food and other necessities, as available, issued upon the basis of the number of dependents in the family. These groups have many potentialities: they may supplement or even supplant the customary charitable assistance to the able-bodied unemployed; they may rise above the relief level and play a rôle in reconstructing the economic basis of life in certain places and among certain groups; or they may degenerate into organized groups with destructive tactics and purposes. Since the co-operative organizations of the unemployed in California have more members than all those found in the rest of the country, California is the logical testing ground for a federal experiment of this sort.

**Committee on the Use of Leisure Time**

An appropriation of \$3,000 was made to the Committee on the Use of Leisure Time of the New York City Division of the National Recovery Administration for a series of public hearings and the preparation of a report on the results of these hearings. The committee consists of twenty-five members representing museums, welfare associations, settlement houses, libraries, and labor groups. To its public hearings have been invited representatives of important social groups, both local and national. The committee does not propose to undertake any administrative work but will compile information and draw attention to the importance of the problem of leisure time in an industrial community.

**New York Adult Education Council**

The New York Adult Education Council received from the Foundation the sum of \$10,000 toward its general budget for the year 1934. The council was organized in February 1933 to provide for the centralization of information on the facilities for adult education to be found in New York City and to stimulate and direct an adequate program. In the short period of its existence the council has made an inventory of what is actually available to the adult in a wide variety

of formal and informal educational activities in the New York area, has established an information service for adults seeking educational opportunities, and has published a notebook of news about educational activities on the adult level. The council also maintains consultation services for organizations and individuals engaged in programs of adult education. In the coming year the council plans to extend its information service to individual organizations, to enlarge its consulting service, to increase the number of its publications, and to augment its research activities, chiefly in the field of gathering and interpreting information.

#### Visits by Foreign Authorities

In the administration by both private and public agencies of numerous measures for improvement of the prevailing economic and social situation, it was considered that the comment and advice of experienced foreign authorities might prove highly valuable. For honoraria and expenses of foreign authorities invited to the United States, the Foundation appropriated the sum of \$10,000.

#### Salaries and Expenses of Temporary Staff

For the salaries and expenses of the temporary staff employed by the special trustee commit-

tee, on definite projects, \$25,000 was made available.

### Summary of Appropriations for 1933

The Brookings Institution, Washington, D. C. Study of the administration of the National Recovery Act.....	\$115,000.00
The Brookings Institution. Study of the administration of the Agricultural Adjustment Act.....	100,000.00
The Brookings Institution. Study of the government financial policies.....	35,000.00
Social Science Research Council and Federal Emergency Relief Administration, Washington, D. C. Studies of relief cases.....	50,000.00
American Municipal Association, Chicago, Illinois. Advisory service .....	130,000.00
Social Science Research Council, New York City. Commission of Inquiry on National Policy in International Economic Relations .....	60,000.00
Social Science Research Council. Study of unemployment reserves and relief.....	5,000.00
Social Science Research Council. Tennessee Valley study	10,000.00
Slum Clearance Committee of New York.....	5,000.00
Columbia University, New York City. Study of effects of sales taxes.....	28,000.00
University of California, Berkeley. Field studies of California barter groups.....	3,000.00
Committee on the Use of Leisure Time, New York City...	3,000.00
New York Adult Education Council.....	10,000.00
Honoraria and expenses of visiting foreign authorities....	10,000.00
Salaries and expenses of temporary staff.....	25,000.00
<hr/> Total.....	\$589,000.00

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# **THE HUMANITIES**



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## THE HUMANITIES

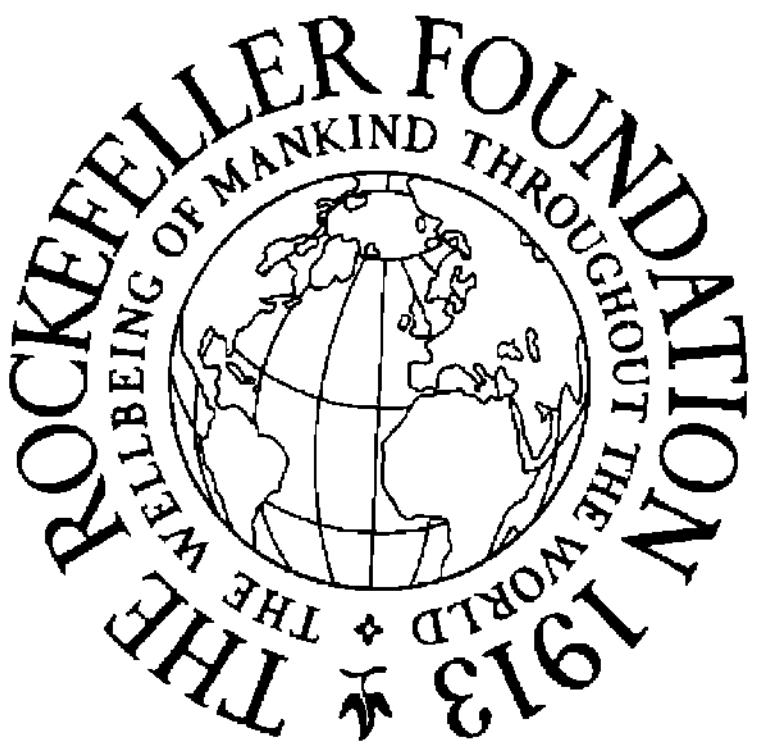
In the humanities, as in the other phases of the program of The Rockefeller Foundation, activities fall under two broad headings. Under the general program for establishing the place of humanistic research, limited support is extended to institutions from which substantial contributions to the planning and development of the field as a whole may be anticipated. The second heading comprises what may be called programs of specific concentration, by which encouragement is given to work in certain definite areas in which an opportunity offers to increase the usefulness of humanistic studies in contemporary life.

In 1933, appropriations under the general program were reduced in amount, but the range of Foundation interest widened to include aid to planning agencies not hitherto assisted. An appropriation was made to the American Council of Learned Societies for the maintenance of its comprehensive program of aid to humanistic scholarship in the United States through its various planning committees and its advisory board. Grants to the International Committee of Historical Sciences for the general support of its activities, and to the American Library Asso-

ciation for an international conference of librarians, recognized the part these organizations play in promoting international understanding on a cultural level. Three American universities which have for some years administered funds provided by the Foundation to advance the work of members of their faculties engaged in humanistic studies, received further grants for the same purpose. The general program was also advanced by additional appropriations for fellowships and grants in aid of research. Funds appropriated for this purpose in the United States were administered, for the most part, by the American Council of Learned Societies. A limited number of smaller grants for European enterprises were made directly by the Foundation.

During the year two areas of specific concentration were recognized: first, the improvement of international understanding through cultural interchange; and second, the preservation and interpretation of American cultural traditions with a view to their continuing growth.

In the international field, the two grants made in 1933 were directed toward improved relations with the Far East. In the establishment of a center in the Library of Congress, where advanced students of Japanese and Chinese may have competent guidance in the use of the large collection of source material there available, the



Photograph Excised Here

*Courtesy of Architecture Illustrated*

Recently completed addition to the Radcliffe Science Library, Oxford University. The enlargement of this building is one stage in the extension of library facilities at Oxford University that is being carried out with the aid of The Rockefeller Foundation.

American Council of Learned Societies was most helpful. Its committees dealing with the Far East have for some time been active in bringing that area more clearly within the vision of American scholars. Similar means are being used in the exploration of other fields for special development. As a result of efforts of this kind in the West the salient features of Oriental culture are better understood; and the hope is that improved teaching of English in China and Japan will be a means of promoting a fuller understanding of Western civilization in the Far East. A grant to the Orthological Institute to provide for a study of the usefulness of Basic English in China and Japan has this end in view.

In advancing the special program for the preservation and interpretation of American cultural traditions, the aim is to promote a larger appreciation of the elements in American life which constitute our national heritage. Three of the grants made under this heading in 1933 are directed toward rendering more readily accessible materials on which scholars frequently must draw. Among the other opportunities in this area, one chosen for immediate development is the interpretative expression of American traditions, particularly through the medium of the drama. A grant made to the University of North Carolina for its work in drama is in accordance



Photograph Excised Here

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Entrance to the new museum at Mytilene on the Island of Lesbos, which was erected by the American School of Classical Studies at Athens for the preservation of the antiquities of the island. Funds for the construction of the building were provided by The Rockefeller Foundation.

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with the view that effective teaching is as essential to this purpose as research.

### General Program

#### Support of Planning Agencies

##### American Council of Learned Societies

The Foundation continued its assistance to the American Council of Learned Societies with a grant of \$100,000 for a comprehensive program of planning and supporting projects in the field of humanistic studies for a period of one year beginning July 1, 1934.

The work of the council touches all fields of humanistic studies. Through its committees, assistance is available for scholars in all colleges and universities of the United States in the form of fellowships, grants to individuals, and participation in cooperative projects. Among the large projects in which it is taking part are the preparation of the *Dictionary of American Biography*, and the studies of American speech now in progress at several institutions and centered at Brown University. It is also sharing in the work of the International Union of Academies, in which are represented the learned societies of most European and Asiatic countries. The council has recently given special attention to the development of Far Eastern studies at the

Library of Congress and in leading universities of the United States and Canada.

#### International Committee of Historical Sciences

A grant of \$14,000 was made to the International Committee of Historical Sciences in support of its general budget and to defray part of the expense of issuing four volumes of its *International Bibliography of Historical Sciences*, during the year 1934.

The committee was created in 1926 through the initiative of representatives of the American Historical Association. It has for its primary purpose the development of the historical sciences by means of international cooperation. It is composed of delegates from the forty-two countries admitted to representation in the International Congress of Historical Sciences. At this congress, which is held every five years, delegates are assigned to the various committees that are constantly engaged in cooperative research. From 1926 to 1933 the committee received support for its activities from a grant made by the Laura Spelman Rockefeller Memorial.

The committee has in progress a number of enterprises in which historians from different countries are collaborating. Among these projects is the annual *International Bibliography of Historical Sciences*. This is prepared through the coopera-

tion of national editors and brings to the attention of historians current writings of their colleagues in other countries. Another way in which the committee has made its influence internationally felt is through the work of a subcommittee which is attempting to eliminate through international collaboration the conflicts of nationalism implicit in present methods of teaching history.

**American Library Association  
International Conference**

The Foundation contributed through the American Library Association toward the expenses of conducting an international conference on research resources of European and American libraries.

This conference was held at the time of the annual meeting of the American Library Association in October 1933, for the purpose of formulating plans for the improvement of research facilities for visiting scholars in the greater libraries of the Western world, promoting the distribution of printed materials across territorial lines, and making European libraries more serviceable in stimulating international understanding. A number of the leading librarians of Europe attended the conference. The foreign countries represented were Belgium, China,

England, France, Germany, India, Italy, Japan, Mexico, New Zealand, Norway, Poland, Spain, Sweden, and Switzerland.

### University Research Funds

#### Columbia University

An appropriation of \$50,000 was made by the Foundation to Columbia University to serve as a fund for the development of advanced research work in the humanities over a two-year period beginning January 1, 1934. This grant followed an appropriation of \$112,500 made by the General Education Board in 1928 for research over a period of three years, and one of \$75,000 by the Foundation in 1931 for a two-year period.

The funds for humanistic research are administered at Columbia University by a research council of twelve members. Allotments have been made during the past five years to a large number of projects in the fields of philosophy, language and literature, art and archeology, and social and cultural history. During 1932-33 the council approved giving support to ten new projects, at the same time that it maintained its interest in forty-seven projects approved in earlier years. Some of the long-term projects receiving aid from the fund are a study of the history of religion and culture in Mexico, under the direction of a committee composed of Professors

H. W. Schneider, R. F. Benedict, Franz Boas, J. J. Coss, Federico de Onís, and W. R. Shepherd; a continuation of Olcott's *Dictionary of Latin Inscriptions*, under C. W. Keyes; a compilation of a library of American speech records, by W. C. Greet and H. M. Ayres; and a corpus of Anglo-Saxon poetry, by G. P. Krapp. The projects approved for future research include studies of romanticism in provincial France, by Cargill Spietsma; the background of seventeenth century science in the Italian thought of the fifteenth and sixteenth centuries, by J. H. Randall, Jr.; and Navajo sand paintings, by Gladys Reichard.

#### Harvard University

An appropriation of \$50,000 for the same term was made to Harvard University, in continuation of a grant of \$250,000 made by the General Education Board in 1928 for the advancement of humanistic studies over a five-year period.

During the past five years, the committee of Harvard University which is responsible for the allocation of funds for humanistic research aided more than sixty individual workers in carrying out a wide range of projects in ancient and modern languages. A number of books have been published as a result of these studies, among them a series of bibliographies of belles-lettres of

the Hispano-American countries and historical and critical studies relating to them; a history of Spanish painting; a study of the philosophy of Spinoza; and a series of studies in classical philology.

#### University of Chicago

An appropriation of \$25,000 was made by the Foundation to the University of Chicago, in support of its program of advanced humanistic research for one year beginning July 1, 1934.

Humanistic research at the University of Chicago has received support from the General Education Board and from the Foundation since 1927. In the intervening period a large number of projects have been carried out at the University under the supervision of a special faculty committee, and a number of others are still in progress. During the academic year 1932-33 twenty-five professors were aided, through funds provided by the Foundation, in research projects, within the fields of language, literature, and history. Two major projects, which have been in progress for seven years, are now near completion. These are Sir William Craigie's supplement to the *Oxford English Dictionary*, recording the history of American words; and a textual work based on all the Chaucer manuscripts in existence, being prepared by Professors John M.

Manly and Edith Rickert. The latter work, when finished, will consist of a scholar's edition and a library edition of *The Canterbury Tales* and a compilation of the life records of Chaucer.

Among the other projects that have been undertaken at the University of Chicago are the following: studies in the works of Pope and of Goldsmith; trends of thought in the sixteenth century; studies of the Arthurian legend; a study of the *Gran Conquista de Ultramar*; researches in phonetics; a study of the syntax of Castilian prose; researches in the folklore of the Finns; a dictionary of Indo-European synonyms; studies of classical culture in the Middle Ages and during the Renaissance; a New Testament iconography; and a Phoenician corpus and dictionary.

#### Fellowships and Grants in Aid

In addition to the grant of \$100,000 for its general program, the American Council of Learned Societies received from the Foundation \$80,000 for the maintenance over a two-year period from July 1, 1934, of its postdoctoral fellowships for students in the humanities.

The number of fellowships active under council auspices in 1933 was thirty-one. Sixteen of the fellows were appointed in 1933. The fields of study of these sixteen fellows were as follows: three each in English and French; two each in

archeology and history of science; and one each in architecture, art, history, linguistics, paleography, and sinology. These studies were pursued in one or another of the following countries: Canada, China, France, Great Britain, Greece, Ireland, Persia, Switzerland, the United States. Fifteen other fellowships, held by earlier appointees, were still active in 1933. The distribution of these fellowships by field of study was: two each in English, linguistics, and sinology; and one each in American history, Arabic, art, Assyriology, French, Indology, medieval history, paleography, and philosophy. These fellows studied in the following countries: China, France, Germany, Great Britain, India, Iraq, Italy, Japan, Lithuania, Netherlands, Palestine, Switzerland, Turkey, and the United States.

In 1933 the council also awarded, from funds previously appropriated by the Foundation, forty-one grants in aid of research projects. Nine of these were larger grants ranging in amount from \$600 to \$1,000, and aggregating \$8,325; thirty-two were smaller grants ranging from \$100 to \$500, and aggregating \$10,565.

From funds supplied by The Rockefeller Foundation, the American School of Classical Studies at Athens during the year sustained six active fellowships in archeology.

A few grants in aid of European enterprises

were made directly by the Foundation: \$2,600 to enable Professor Robert von Heine-Geldern, of the University of Vienna, to complete research on the cultural interrelations between the mainland of Asia, Indonesia, and Polynesia; \$1,000 to the University of Cracow, Poland, to enable the Jagellonian Library to restore and preserve its manuscript materials; \$2,250 to enable N. Gordon Munro to continue work on the disappearing Ainu populations of Japan; and \$3,000 to the American School of Classical Studies at Athens, to enable Dr. K. Kourouniotis, chief of the Archeological Bureau of the Greek Ministry of Education, to complete his excavations of the Eleusis site.

Under the program in the humanities as it is now developing, a certain number of fellowships and grants in aid will be administered by the Foundation in support of its programs of specific concentration. Two grants in aid made in 1933 fell under this heading: \$1,000 to increase the effectiveness of *Books Abroad*, as a means of promoting international cultural contacts; \$1,200 to enable Professor E. E. Dale of the University of Oklahoma to study materials of significance for the history of Oklahoma and the adjacent regions of the Southwest. During 1933 a first appointment was made to a fellowship to give advanced training in library administration to younger



Photograph Excised Here

The Rockefeller Foundation has made a grant to the University of Cracow, Poland, to enable the Jagellonian Library to restore and preserve its old manuscripts. An unrestored manuscript is shown above.



Photograph Excised Here

One of the old Jagellonian Library manuscripts after restoration.

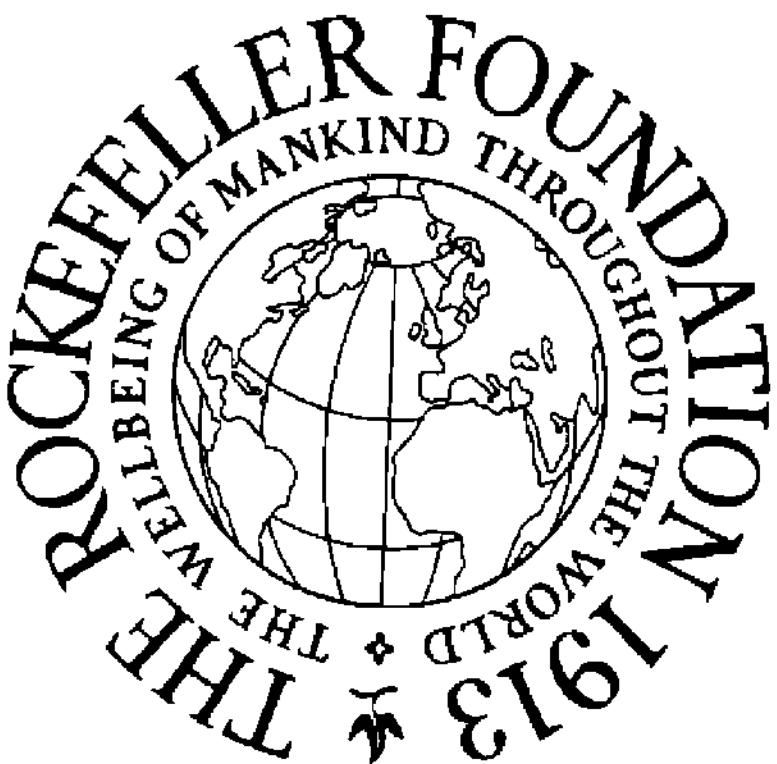
librarians from the staffs of important research libraries in foreign countries.

**Programs of Specific Concentration  
International Cultural Relations**

**American Council of Learned Societies  
Far Eastern Studies**

The American Council of Learned Societies received from The Rockefeller Foundation an appropriation of \$14,000 toward the development of a training center for Far Eastern studies at the Library of Congress in Washington.

As part of a larger plan for developing cultural relations with the Far East by fostering Far Eastern studies in American colleges and universities, the American Council of Learned Societies has recognized the advantages of using the training facilities for such studies in the Library of Congress. This library possesses the largest and most varied collection of Chinese works outside of China. Its Division of *Orientalia*, begun in 1869 with a gift of books from the Emperor of China, has grown through purchases and donations until it now has about 200,000 volumes. It is particularly rich in works on geography, agriculture, law, and public administration, and in Japanese and Chinese classics. Biography, history, art, and archeology are also well represented. The most distinctive feature



Photograph Excised Here

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Courtesy of The Oriental Institute of the University of Chicago

Assyrian tablet recently discovered at Khorsabad by the Iraq expedition of the Oriental Institute of the University of Chicago. The tablet lists the names of ninety-four Assyrian kings, with the length of each reign, the name of each king's father, and additional historical information. This chronological list, covering a period from about 2200 B. C. to 746 B. C., carries Assyrian history back 1000 years further than previous records.

of the collection, however, is the great amount of material in modern Chinese dealing with contemporary problems. The Division of Orientalia therefore provides an excellent training base for students who have had general training in Far Eastern languages and are now ready to undertake special studies requiring source materials.

The council plans to bring a Chinese and a Japanese assistant to work with selected American students during their final period of training in the United States. This seminar group will have the expert guidance of Arthur W. Hummel, the curator of the division, who has spent many years as an investigator and teacher in the Orient. The council will provide funds for the appointment of American scholars engaged in a project sponsored by its committees. Other scholars will pursue individual plans for study under fellowships from the Foundation and from universities. The Foundation grant will be used to defray the expenses of engaging the Chinese and Japanese assistants, and to meet the charges for cataloguing and stenographic service.

**Orthological Institute  
Basic English in the Orient**

An appropriation of \$35,000, available over the three-year period 1933-35, was made by the

Foundation to the Orthological Institute in London for various activities directed toward determining the usefulness of Basic English in the Far East.

The following statement sets forth the general aims of Basic English within the limits of its own vocabulary:

Basic English is an attempt to give to everyone a second, or international, language, which will take as little of the learner's time as possible.

It is a system in which everything may be said for all the purposes of everyday existence: the common interests of men and women, general talk, news, trade, and science.

To the eye and ear it will not seem in any way different from normal English, which is now the natural language, or the language of the governments, of more than 500,000,000 persons.

There are only 850 words in the complete list, which may be clearly printed on one side of a bit of note-paper. But simple rules are given for making other words with the help of those in the list.

In addition to the Basic words themselves, the learner has, at the start, about fifty words which are now so common in all languages that they may be freely used for any purpose. Examples are *radio, hotel, telephone, bar, club*.

For the needs of any science, a short special list gets the expert to a stage where international words are ready to hand.

Basic English was completed as a system for international use in 1932, after more than ten years of research and experimentation on the part of its inventor, C. K. Ogden, the director of the institute. The vocabulary itself was submitted to Mr. Ogden's collaborators in 1928, the analysis of language on which it is partly based having been worked out from 1918 to 1922 in collaboration with I. A. Richards of Magdalene College, Cambridge. The system is fully explained

in a series of handbooks: *Basic English*, a general account, with word-list and rules; *The Basic Words*, a full account of the 850 words, with all special uses; *The ABC of Basic English*, a simple account, step by step, for learners and teachers; *The Basic Dictionary*, which puts into Basic English the 7,500 words most used in normal English; and *The Basic Vocabulary*, a history and discussion of the project, with details of the number of words used for different purposes. A number of reading texts are also available.

The appropriation made by the Foundation provides for the preparation of Basic English versions of several English books adapted to the needs of students in the Far East, including Hearn's *Japanese Stories*, Faraday's *Chemical History of a Candle*, and Tumura's *That Night (Sono Yo)*, issued with the Japanese text opposite. In Japan, the preparation of a Japanese Basic dictionary is being undertaken with the collaboration of Japanese scholars. Other studies have dealt with the theoretical basis for effective work in Chinese lexicography, and with means of simplifying communication with the Far East.

In 1933 a special provision of the appropriation enabled representatives of the Orthological Institute to attend a conference held during the summer under the auspices of the Institute of

Pacific Relations, at which representatives of the various countries with interests in the Pacific area participated in a discussion of the value of Basic English in relation to the language problems of the Far East.

**Preservation and Interpretation  
of American Cultural Traditions**

**Library of Congress. Accumulation of Source Materials  
for American History**

The Library of Congress received from the Foundation a grant of \$20,000 toward support for one year beginning July 1, 1933, of a project for accumulating from European archives and libraries photostatic copies of source materials for American history. The library has been engaged in this undertaking for more than five years. Research assistants stationed in ten important countries have succeeded in photostating thousands of scattered documents. As a result of these efforts, there are now in the Library of Congress 1,600,000 prints from Europe, constituting a store of raw material relating to American history, particularly with regard to American foreign relations. It is no longer necessary for investigators in this field to study exclusively in Europe. There is now available for them, at home, the nearest approach to the actual documents that has yet been devised.

Work on this project is still going on in London, Paris, and Seville, and it is estimated that two years will be required for its completion. The Foundation's contribution is being added to sums secured from other sources to carry on work during 1933-34.

#### Virginia Historical Index

The Foundation contributed \$15,000 toward the completion during 1933 and 1934 of the *Virginia Historical Index*. In 1927 a fund was contributed by seventeen members of the Virginia Historical Society for the purpose of compiling an analytical index of 121 source volumes relating to the history of the state of Virginia, among them the six volumes of *The Virginia Historical Register*, published eighty years ago; the eleven volumes of the *Calendar of Virginia State Papers*, which represent the state's miscellaneous archives in printed form; and Hening's *Statutes of Virginia* (1619-1792), published 120 years ago. The work of analysis has been in progress for four years.

Up to the present time, 900,000 entries have been recorded. These represent a great variety of subjects touching on every phase of life throughout the history of the state. These exact references will be particularly helpful to social, political, and literary historians in their studies of

American life and culture. The indexing is under the direction of Mr. E. G. Swem, librarian of the College of William and Mary. It is expected that the work will be completed by the end of 1934.

**Bibliographical Society of America**

**Index of American Newspaper Files**

The Foundation appropriated to the Bibliographical Society of America the sum of \$25,000 to be used over a three-year period beginning January 1, 1934, toward the completion of a listing of newspaper files in American libraries.

The Bibliographical Society of America is an organization of research librarians that concerns itself with projects to improve facilities for research in the principal libraries of the United States. Its completed projects have a national significance in those fields of scholarship requiring access to large bodies of material. The society wishes to provide a means whereby scholars can learn the titles and the locations of all newspaper files held in American depositories. A list now in print brings the record up to the year 1820; but for the period from 1820 to the present no such list exists. Furthermore, there is no list to show the files of foreign newspapers held in the United States.

A few lists exist in the Library of Congress, the

New York Public Library, Yale University Library, the Wisconsin State Historical Library, Duke University Library, and in Alabama and Illinois; but they record only a fraction of the newspapers available. Through the creation of a single index to newspapers much duplication will be avoided and unique collections will be brought to the attention of scholars.

Headquarters for the collection of data from the various states, the coordination of material, and the preparation of copy for publication have been established in the Library of Congress.

#### University of North Carolina

##### Work in Drama

An appropriation of \$7,500 was made by the Rockefeller Foundation to the University of North Carolina toward the development of work in drama during the year beginning January 1, 1934. Fifteen years ago Professor F. H. Koch organized at the University of North Carolina a course in dramatic writing and production. As four published volumes show, the plays written in this course have been concerned primarily with folk material; they deal chiefly with people and situations of which the students have direct knowledge, either through their own experience or from living tradition. This relation of the author to his material gives the plays value as

authentic records of American life. Most of the plays are simple presentations of incidents significant for the portrayal of character, serving to interpret the people of a region rather than to accentuate regional peculiarities.

During the year 1932-33 there were 141 students in Professor Koch's courses in playwriting, acting, directing, and technical practice; fifty-nine plays were produced, fifty-two of which were written by the students themselves. On the occasion of the Tenth Dramatic Festival, held in Chapel Hill by the Carolina Dramatic Association, 140 actors from all parts of the state competed in the presentation of thirty-eight plays, of which ten were original. Companies of players also go out from the university to remote regions of the state, where they present plays embodying local customs or traditions.

#### **Former Programs**

##### **Archeology**

##### **University of Chicago, Oriental Institute**

An appropriation of \$350,000 was made by the Foundation to the University of Chicago in support of the research and field work of its Oriental Institute, for the year beginning July 1, 1933.

The Oriental Institute of the University of Chicago was organized in 1919, with James H. Breasted, then head of the Department of Orien-

tal Languages, as its director. Beginning with a program of coordinated research in Near Eastern archeology, the work of the institute has gradually expanded until today it covers researches in the composite problems of art, archeology, language, and epigraphy, requiring experts in many fields of scholarship. In addition to its headquarters in Chicago, where the institute has a research laboratory, a museum, work-rooms, a library, and quarters for research and teaching, buildings have been erected in two centers in the Near East to care for historical records and other objects salvaged from temples and tombs. These centers are in Luxor, Egypt, and in Tell Asmar in Babylonia (Iraq). A number of publications have resulted from the work undertaken in all three centers. The institute now has thirteen archeological expeditions at work in Anatolia, Syria, Palestine, Assyria, Babylonia, Persia, Egypt, and Northeastern Africa.

During 1933 the prehistoric survey of the lower Nile Valley was completed, as was similar work in parts of Northeastern Africa. Important results from this project are entirely new data on the geological history that have direct bearing on the periods of early human residence. The reports are now in process of publication. The survey is to be extended to Western Asia. Among isolated finds of the various expeditions,

special interest attaches to an Assyrian tablet discovered at Khorsabad. Its 350 lines give a summary of the reigns of ninety-four Assyrian kings over a period of 1500 years and set up a new terminal point in recorded history.

### Summary of Appropriations for 1933

#### GENERAL PROGRAM

##### Support of Planning Agencies

American Council of Learned Societies. Administration and projects.....	\$100,000
International Committee of Historical Sciences. General expenses and issuing four volumes of <i>International Bibliography of Historical Sciences</i> .....	14,000
American Library Association. International Conference.....	2,000
	<hr/>
	\$116,000

##### University Research Funds

Columbia University. General research fund for development of advanced humanistic work.....	\$50,000
Harvard University. General research fund for development of advanced humanistic work.....	50,000
University of Chicago. General Research fund for development of advanced humanistic work.....	25,000
	<hr/>
	\$125,000

##### Fellowships and Grants in Aid

American Council of Learned Societies. Fellowships.....	\$80,000
Grants in aid of research.....	30,000
	<hr/>
	\$110,000

\$351,000

#### PROGRAMS OF SPECIFIC CONCENTRATION

##### International Cultural Relations

American Council of Learned Societies. Far Eastern studies.....	\$14,000
Orthological Institute. Basic English in the Orient.....	35,000
	<hr/>
	\$49,000

Preservation and Interpretation of American Cultural Traditions	
Library of Congress. Accumulation of source materials for American history.....	\$20,000
<i>Virginia Historical Index</i> .....	15,000
Bibliographical Society of America. Index of American Newspaper Files.....	25,000
University of North Carolina. Work in drama.....	7,500
	<hr/>
	\$67,500 \$116,500

## FORMER PROGRAMS

Archeology	
University of Chicago. Oriental Institute....	\$350,000

## EMERGENCY GRANTS

Special Research Aid Fund, Europe.....	\$30,000
Total.....	<hr/> \$847,500

## Payments on Former Appropriations

PROJECTS	1933 PAYMENT
Abraham Lincoln Foundation, Dresden, Germany. Humanistic studies.....	\$10,000.00
American Council of Learned Societies, Washington, D. C. Research in paleography.....	13,992.44
American Council of Learned Societies. Humanistic studies.....	127,813.54
American Council of Learned Societies. Fellowships....	50,287.12
American Council of Learned Societies. Research and administration.....	33,535.61
American School of Classical Studies at Athens. Museum at Lesbos.....	14,000.00
American School of Classical Studies at Athens. Fellowships in connection with excavation of Athenian Agora.	7,600.00
American Schools of Oriental Research, Baghdad and Jerusalem. Current expenses.....	40,000.00
American Schools of Oriental Research. Endowment....	8,769.58
Bibliothèque Nationale, Paris. Collections of serial publications.....	4,998.77
British Museum, London. Discount on Catalogue of Printed Books .....	841.30
British Museum. Service on new edition of Catalogue of Printed Books.....	881.13
Columbia University, New York City. General research fund for development of advanced humanistic work....	37,500.00

THE HUMANITIES                            333

Fellowships administered by The Rockefeller Foundation.	\$1,010.50
Humanistic studies in Europe.....	8,873.61
Johns Hopkins University, Baltimore, Maryland. General research fund in the humanities.....	20,000.04
Prussian State Library, Berlin, Germany. Union Catalogue of Prussian Libraries.....	10,000.00
Research aid funds. Foreign.....	7,350.00
Society of the Friends of the Bibliothèque Nationale. Printing General Catalogue.....	1,000.00
<i>Thesaurus Linguae Latinae</i> , Munich, Germany. General budget.....	3,138.14
University of Chicago, Illinois. General research fund in the humanities.....	\$0,000.00
University of Chicago. Foreign work of Oriental Institute	186,595.47
University of Chicago. Studies in comparative philology.	5,795.00
University of London, England. School of Oriental Studies. Research in African linguistics.....	11,685.00
University of Michigan, Ann Arbor. Archeological research, Karanis, Egypt.....	17,500.00
University of Oxford, England. Development of Bodleian Library.....	104,928.09
University of Pennsylvania, Philadelphia. Excavations at Ur of the Chaldees.....	12,000.00
Yale University, New Haven, Connecticut. Research fund in the humanities.....	50,000.00
Yale University. Excavations in Transjordan and Syria.	7,500.00
 Total.....	 <hr/> \$847,595.34

THE HUMANITIES  
STAFF DURING 1933

DIRECTOR  
David H. Stevens

ASSISTANT DIRECTOR  
John Marshall\*

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\*Appointed June 1, 1933.

## **REPORT OF THE TREASURER**



## TREASURER'S REPORT

In the following pages is presented a report of the financial transactions of The Rockefeller Foundation for the year ended December 31, 1933.

A condensed summary of appropriations and funds available for appropriation follows:

Balance of appropriations, pledges, or authorizations at December 31, 1932

Prior Obligations Account.....	\$10,877,951.84
Current Appropriations Account...	41,920,264.17

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Funds provided for appropriations, pledges, and authorizations made during the year, as shown hereunder...

9,860,302.81

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362,658,518.82

Less

Payments made during the year... \$14,753,822.05

Sum of authorizations allowed to lapse returned to Principal Fund. 6,064,800.00

Sum of unused appropriations, pledges, and authorizations allowed to lapse becoming available for appropriation..... 1,679,592.38

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22,498,214.43

Balance of appropriations, pledges, or authorizations at December 31, 1933.....

\$40,160,304.39

This balance consists of

Prior Obligations Account..... \$7,621,722.91

Current Appropriations Account... 32,538,581.48

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\$40,160,304.39

Balance available for appropriation at December 31, 1932.....

\$2,930,176.07

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

\$8,257,418.53

Unused balance of appropriations, pledges, and authorizations allowed to lapse, returned as above.....

1,679,592.38

9,937,010.91

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\$12,867,186.98

Less funds provided, as above, for Appropriations made during the year not previously pledged or authorized.....	\$7,035,302.81
Pledges and authorizations made during the year.....	2,825,000.00
	<hr/>
Balance available for appropriation at December 31, 1933.....	\$3,006,884.17
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The balance in Principal Fund December 31, 1932, amounted to \$147,522,644.31. Transactions during the year resulted in a net increase of \$6,-056,141.28, or a balance December 31, 1933, of \$153,578,785.59. While the total additions to the fund amounted to \$6,078,800, this sum was reduced to \$6,056,141.28 by the deduction of \$22,658.72, representing the sum by which the proceeds of securities redeemed or exchanged during the year failed to equal their ledger value.

Only one transaction affecting the Reserve for Contingent Projects Account occurred during the year. The balance in this account December 31, 1932, was \$1,514,000, and this figure was reduced to \$1,500,000 by the cancellation of a contingent item amounting to \$14,000.

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. Squires and Company, Accountants and Auditors, who have rendered a report to the Chairman.

The financial condition and operations are set forth in the appended exhibits as follows:

Balance Sheet.....	Exhibit A
Foreign Currencies Held December 31, 1933	Exhibit A1
Consolidated Statement of Funds Available for Appropriation and Disbursement.....	Exhibit B
Statement of Appropriations Made during the Year 1933.....	Exhibit C
Statement of Payments during 1933 on Ap- propriations Made in 1933 and Prior Years	Exhibit D
Statement of International Health Division Designations and Payments.....	Exhibit E
Summary of Prior Obligations Account.....	Exhibit F
Summary of Appropriations Account.....	Exhibit G
Statement of Principal Fund.....	Exhibit H
Statement of Reserve for Contingent Projects	Exhibit H
Statement of Land, Buildings, and Equip- ment Fund.....	Exhibit I
Schedule of Securities.....	Exhibit J

**EXHIBIT A**  
**BALANCE SHEET—DECEMBER 31, 1933**

**ASSETS**

**INVESTMENTS**

Securities (ledger valuation).....	\$187,215,840.07
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**CURRENT ASSETS**

Certificate of deposit.....	\$2,500,000.00
Cash on deposit.....	1,254,612.06
Foreign currencies purchased to meet specific appropriations payable in foreign exchange of at least the same dollar amount (Exhibit A1).....	4,973,345.62
Advances and deferred charges under appropriations and sundry accounts receivable.....	2,309,421.33
	<u>11,037,379.01</u>

**LAND, BUILDINGS, AND EQUIPMENT**

In New York.....	\$50,855.82
In Paris.....	65,901.61
In China.....	298,331.95
	<u>415,089.38</u>
	<u><u>\$198,668,308.46</u></u>

## TREASURER'S REPORT

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EXHIBIT A  
BALANCE SHEET—DECEMBER 31, 1933

## FUNDS

PRINCIPAL FUND.....		\$153,578,785.59
RESERVE FOR CONTINGENT PROJECTS.....		1,500,000.00
<b>APPROPRIATIONS FUNDS</b>		
Appropriations, pledges, and authorizations made prior to January 3, 1929		
Unpaid appropriations.....	\$6,563,566.41	
Unpaid pledges and authorizations.....	<u>1,058,156.50</u>	\$7,621,722.91
Appropriations, pledges, and authorizations made on or subsequent to January 3, 1929		
Unpaid appropriations.....	\$27,266,344.55	
Unpaid pledges and authorizations.....	<u>5,272,236.93</u>	<u>32,538,581.48</u>
BALANCE AVAILABLE FOR APPROPRIATION.....		40,160,304.39
<b>CURRENT LIABILITIES</b>		
Accounts payable.....		7,244.93
LAND, BUILDINGS, AND EQUIPMENT FUND.....	<u>\$415,089.38</u>	
		415,089.38
		<u><u>\$198,668,308.46</u></u>

**EXHIBIT AI**  
**FOREIGN CURRENCIES HELD DECEMBER 31, 1933**

		AMOUNT IN LOCAL CURRENCY	RATE	COST IN U. S. DOLLARS
Albania.....	Gold francs.....	72,000.00	.3035	\$21,852.00
Austria.....	Schillings (blocked).....	30,110.00	.17707	5,331.54
Bulgaria.....	Leva (blocked).....	4,176,000.00	.0091945	38,396.51
Canada.....	Dollars.....	1,147,361.26	.94292	1,081,868.96
Ceylon.....	Rupees.....	5,000.00	.39125	1,956.25
China.....	Shanghai dollars.....	57,600.00	.33313	19,188.25
Denmark.....	Kroner.....	50,000.00	.223	11,150.00
Egypt.....	Pounds.....	2,000.00	5.29	10,580.00
England.....	Pounds sterling.....	518,763/18/9	3.630339	1,883,289.26
France.....	Francs.....	3,408,077.00	.0605602	206,393.93
Germany.....	Reichsmarks (blocked).....	66,464.67	.2765	18,377.48
Greece.....	Drachmas.....	4,900,000.00	.0087875	43,058.75
Hungary.....	Pengö (blocked).....	197,566.32	.16626	32,847.41
India.....	Rupees.....	34,000.00	.39125	13,302.50
Italy.....	Lire.....	3,045,062.40	.08050623	245,146.51
Jamaica.....	Pounds.....	8,500/0/0	5.1275	43,583.75
Japan.....	Yen.....	3,032,510.12	.309327	938,037.51
Java.....	Guilders.....	12,000.00	.6395	7,674.00
Mexico.....	Pesos.....	8,750.00	.2795	2,445.62
Netherlands.....	Guilders.....	110,000.00	.6149	67,639.00
Poland.....	Zloty.....	65,859.00	.17803	11,724.96
Portugal.....	Escudos.....	165,000.00	.0468	7,722.00
Rumania.....	Lei (blocked).....	12,576,800.00	.0074287	93,429.90
Siam.....	Ticals.....	19,788.56	.42051	8,321.30
Spain.....	Pesetas.....	99,000.00	.12995	12,865.10
Sweden.....	Kronor.....	1,500.00	.24805	372.08
Switzerland.....	Francs.....	472,510.00	.310662	146,791.05
				<hr/> <b>\$4,973,345.62</b>

## EXHIBIT B

## CONSOLIDATED STATEMENT OF FUNDS AVAILABLE FOR APPROPRIATION AND DISBURSEMENT

## AMOUNTS AVAILABLE

<b>PRIOR OBLIGATIONS ACCOUNT</b>				
Balance, December 31, 1932.....				\$10,877,951.84
Less				
Unused balances of appropriations allowed to lapse, credited to Appropriations Account.....	\$287,382.74			
Appropriations Account.....	64,800.00			
Authorizations allowed to lapse, returned to Principal Fund.....		352,182.74		\$10,525,769.10
<b>APPROPRIATIONS ACCOUNT</b>				
Balance, December 31, 1932.....				\$44,850,440.24
Less authorization of November 13, 1929, rescinded and credited to Principal Fund in accordance with a resolution of the Board of Trustees dated April 12, 1933.....			6,000,000.00	
Income received during the year 1933.....				\$38,850,440.24
Refunds received during the period.....				8,248,673.97
Unused balance of appropriations allowed to lapse (prior obligations).....				8,744.56
				287,382.74
				47,395,241.51
				\$57,921,010.61

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## DISBURSEMENTS

<b>Universities and Other Educational Institutions</b>				
<b>Education</b>				
Medical sciences.....				\$315,103.43
Public health.....				4,647.19
Nursing.....				449,990.72
Social sciences.....				198,482.93
Natural sciences.....				117,678.31
General.....				2,500.00
Departmental development.....				829,118.50
Research programs.....				2,235,670.87
Land and buildings.....				1,136,704.93
				\$5,289,896.88

## EXHIBIT B—Continued

## Research Institutions and Organizations

Education			
Medical sciences.....	\$1,431.15		
Social sciences.....	16,789.50		
General.....	10,200.00		
General development.....	538,287.05		
Research programs.....	1,043,369.00		
Land and buildings.....	<u>7,162.06</u>	\$1,617,238.76	
Special committees and commissions.....		132,370.64	
Fellowships and grants in aid.....		1,519,661.67	
Studies of pressing economic problems recommended by special trustee committee.....		120,568.50	
Miscellaneous.....		1,268,040.22	
Public health.....		3,286,063.01	
General.....		699,492.04	
Administration.....		<u>820,490.33</u>	\$14,753,822.05
Balance, December 31, 1933.....			<u>\$43,167,188.56</u>
This balance is available as follows:			
Amount due on appropriations, pledges, and authorizations made prior to January 3, 1929.....		\$7,621,722.91	
Amount due on appropriations, pledges, and authorizations made on or subsequent to January 3, 1929.....		<u>32,538,581.48</u>	
This sum is due in the following years:			
1934.....	\$17,347,335.39		
1935.....	10,922,386.00		
1936.....	4,617,463.00		
1937.....	2,757,767.00		
1938.....	2,071,691.00		
1939.....	1,382,673.00		
1940.....	1,060,989.00		
	<u>\$40,160,304.39</u>		
Balance available for appropriation.....		3,006,884.17	
		<u>\$43,167,188.56</u>	

This sum is accounted for in securities and cash.

## EXHIBIT C

## APPROPRIATIONS MADE DURING THE YEAR 1933

Albany Medical College, New York . . . . .	\$20,000.00
American Council of Learned Societies, Washington, D. C. . . . .	194,000.00
American Geographical Society, Washington, D. C. . . . .	25,000.00
American Library Association, Chicago, Illinois . . . . .	2,000.00
American Mathematical Society, New York City . . . . .	9,000.00
American Municipal Association, Chicago, Illinois . . . . .	130,000.00
Bibliographical Society of America, Buffalo, New York . . . . .	25,000.00
Brookings Institution, Inc., Washington, D. C. . . . .	250,000.00
California Institute of Technology, Pasadena . . . . .	60,000.00
Canadian National Committee for Mental Hygiene, Toronto . . . . .	60,000.00
Central Institute for the Deaf, St. Louis, Missouri . . . . .	2,600.00
China Medical Board, Inc., New York City . . . . .	547,500.00
Chinese Medical Association, Shanghai, China . . . . .	9,750.00
Citizens Family Welfare Committee of New York City . . . . .	200,000.00
Columbia University, New York City . . . . .	89,000.00
Committee on the Use of Leisure Time, New York City . . . . .	3,000.00
Community Council of Philadelphia, Pennsylvania . . . . .	7,500.00
Dalhousie University, Halifax, Nova Scotia . . . . .	44,000.00
Economic Foundation, New York City . . . . .	75,000.00
Emergency program, premedical institutions in China . . . . .	3,000.00
Exchange fund . . . . .	125,000.00
Federal Emergency Relief Administration, Washington, D. C. . . . .	50,000.00
Fellowships . . . . .	
Nursing . . . . .	50,000.00
Resident fellows in China in the natural and medical sciences . . . . .	5,000.00
Foreign Policy Association, New York City . . . . .	50,000.00
Geneva Research Center, Switzerland . . . . .	24,000.00
German School of Politics, Berlin . . . . .	30,000.00
Ginling College, Nanking, China . . . . .	1,250.00

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EXHIBIT C—*Continued*

Grants in aid	
Humanities.....	\$30,000.00
Medical sciences.....	30,000.00
Natural sciences.....	30,000.00
Harvard University, Cambridge, Massachusetts.....	97,000.00
Industrial Relations Counselors, Inc., New York City.....	2,500.00
Institute of Economic and Social Research, Paris, France.....	350,000.00
Institute of Economics and History, Copenhagen, Denmark.....	18,000.00
Institute of Hygiene and Health Center, Bucharest, Rumania.....	125,000.00
Institute of Hygiene and Public Health, Rome, Italy.....	150,000.00
Institute of Pacific Relations, Honolulu, Hawaii.....	45,000.00
Institute of Public Health, Tokyo, Japan.....	1,000,000.00
International Committee of Historical Sciences, Zurich, Switzerland.....	14,000.00
International Health Division of The Rockefeller Foundation, New York City.....	2,200,000.00
Johns Hopkins University, Baltimore, Maryland.....	80,000.00
Jungfraujoch Scientific Station, Switzerland.....	35,700.00
League of Nations, Geneva, Switzerland.....	275,000.00
Library of Congress, Washington, D. C.....	20,000.00
Lingnan University, Canton, China.....	20,000.00
London School of Economics and Political Science, England.....	34,000.00
Marine Biological Association of China, Amoy.....	2,250.00
Massachusetts General Hospital, Boston.....	38,000.00
Massachusetts Institute of Technology, Cambridge.....	8,300.00
Medical literature for Russia.....	15,000.00
Medical Research Council, London, England.....	15,000.00
National Bureau of Economic Research, New York City.....	225,000.00
National Research Council, Washington, D. C.....	380,000.00
New York Adult Education Council, New York City.....	10,000.00
New Zealand Department of Scientific and Industrial Research, Apia Observatory, Western Samoa.....	2,500.00
Orthological Institute, London, England.....	35,000.00
Peiping Union Medical College, China.....	29,000.00

Research aid	
Humanities.....	\$30,000.00
Medical sciences.....	60,000.00
Medical and natural sciences in China.....	15,000.00
Natural sciences.....	100,000.00
Social sciences.....	150,000.00
Roscoe B. Jackson Memorial Laboratory, Bar Harbor, Maine.....	11,000.00
Science Advisory Board, Washington, D. C.....	50,000.00
Shantung Christian University, Tsinan, China.....	28,100.00
Slum Clearance Committee of New York, New York City.....	5,000.00
Social Science Research Council, New York City.....	265,000.00
Soochow University, China.....	4,000.00
Studies of economic problems. Administration.....	35,000.00
University of California, Berkeley.....	33,000.00
University of Chicago, Illinois.....	425,000.00
University of Hawaii, Honolulu.....	45,000.00
University of London, England.....	16,400.00
University of Louvain, Belgium.....	5,000.00
University of Lyon, France.....	15,200.00
University of Montreal, Canada.....	25,000.00
University of Nanking, China.....	4,250.00
University of North Carolina, Chapel Hill.....	7,500.00
University of Rochester, New York.....	26,803.50
University of Stockholm, Sweden.....	30,000.00
University of Utrecht, Netherlands.....	101,000.00
<i>Virginia Historical Index</i> , Richmond, Virginia.....	15,000.00
Washington University, St. Louis, Missouri.....	58,500.00
Western Reserve University, Cleveland, Ohio.....	10,000.00
Yale University, New Haven, Connecticut.....	25,000.00
Administration.....	887,202.81
	<hr/>
	\$9,890,806.31

## EXHIBIT D

## PAYMENTS DURING 1933 ON APPROPRIATIONS MADE IN 1933 AND PRIOR YEARS

		APPROPRIA- TIONS	1933 PAYMENTS
<b>UNIVERSITIES AND OTHER EDUCATIONAL INSTITUTIONS</b>			
Medical Science Education			
Albany Medical College, New York			
Organization of extension teaching in medicine (RF 32067, 33017).....		\$25,000.00	\$20,000.00
Brussels, Belgium, Department of Public Welfare			
Maintenance of St. Pierre Hospital (RF 31097).....		10,000.00	10,000.00
China Medical Board, Inc., New York City			
General purposes (RF 33001).....		149,500.00	149,500.00
Maintenance of Peiping Union Medical College for year 1934-35 (RF 33101)....		398,000.00	.....
Salary and expenses of Director (RF 29067).....		20,000.00	9,076.95
Chulalongkorn University, Bangkok, Siam			
Equipment and supplies for medical, premedical, and nursing schools (ME 21059, 21093, 21148).....		2,725.50	2,132.82
Visiting professors and nurse leaders (ME 28039, RF 29110, 30063, 31113).....		69,292.42	20,653.52
National Central University, Nanking, China			
Medical School, Shanghai, Maintenance (RF 29039).....		28,518.28	9,059.12
Peiping Union Medical College, China			
Commutation of foreign and visiting professors and travel of visiting professors (ME 28121-22, RF 29038).....		15,554.82	12,544.72
Shantung Christian University, Tsinan, China			
School of Medicine, Maintenance (RF 32007, 33015, 33102).....		36,475.00	15,225.00
University of Lyon, France			
Faculty of Medicine and Pharmacy			
Interest on endowment (ME 21252, 28139, RF 29153, 33054).....		14,196.69	14,196.69
Endowment for maintenance of improved facilities for teaching (RF 33036, 33054).....		16,574.61	15,214.61

University of Montreal, Canada			
Faculty of Medicine. Development of laboratories (RF 32065, 33035).....	\$50,000.00	\$37,500.00	
Public Health Education			
Dalhousie University, Halifax, Nova Scotia			
For development of teaching in public health and preventive medicine (RF 33044)	44,000.00	4,647.19	
Nursing Education			
Emergency aid to schools of nursing in Budapest, Cracow, Debreczen, Warsaw, and Zagreb (RF 31099).....	31,000.00	3,554.70	
St. Luke's International Medical Center, Tokyo, Japan			
College of Nursing. Endowment (RF 32088).....	400,000.00	400,000.00	
School for Public Health Nurses, Cluj, Rumania			
Improvement of teaching facilities (RF 29112).....	7,767.35		
State Central School of Nursing, Budapest, Hungary. Maintenance (ME 28089) ..	2,500.00	1,500.00	
State Institute of Public Health, Prague, Czechoslovakia			
School of Nurses for Public Health and Social Welfare. Improvement of teaching services (RF 30082).....	25,000.00		
University of Cracow, Poland			
School of Public Health and Bedside Nursing. Salaries and scholarships (ME 2927).....	2,067.14	1,281.29	
University of Lyon, France			
School of Nursing. Health center for field training courses (ME 28027).....	18,000.00	10,000.00	
University of Toronto, Canada			
School of Nursing. Maintenance (RF 32080).....	79,537.50	16,154.69	
Vanderbilt University, Nashville, Tennessee			
School of Nursing. Educational features (RF 29121).....	17,500.04	17,500.04	
Social Science Education			
American University of Beirut, Syria			
Work in social science and commercial education (RF 31014).....	15,000.00	10,000.00	
German School of Politics, Berlin			
Research and instruction in political science (RF 32039, 33008).....	35,000.00	15,000.00	

## EXHIBIT D—Continued

	APPROPRIA- TIONS	1933 PAYMENTS	350
<b>UNIVERSITIES AND OTHER EDUCATIONAL INSTITUTIONS—Continued</b>			
Social Science Education—Continued			
National Catholic School of Social Service; Washington, D. C.			
Budget for instruction (RF 31040).....	\$22,500.00	\$12,500.00	
New York School of Social Work, New York City			
General budget (RF 32043).....	165,000.00	45,000.00	
Tulane University of Louisiana, New Orleans. School of Social Work			
General budget (RF 32044).....	60,000.00	12,000.00	
University of Chicago, Illinois			
School of Social Service Administration			
General endowment (LS 708).....	500,000.00		
Current expenses (RF 31039).....	82,529.36	47,482.93	
University of Vienna, Austria			
Psychological Institute			
General program (RF 31093).....	8,000.00	4,000.00	
Western Reserve University, Cleveland, Ohio			
School of Applied Social Sciences			
Support (RF 32042, 33064).....	92,500.00	27,500.00	
Yenching University, Peiping, China			
College of Applied Social Sciences			
Strengthening of work (LS 946).....	70,000.00	25,000.00	
Natural Science Education			
China			
Maintenance of science departments			
Fukien Christian University, Foochow (RF 29030, 32026).....	18,440.62	7,500.00	
Ginling College, Nanking (RF 33013).....	1,250.00	1,250.00	
Lingnan University, Canton (RF 33013, 33068).....	20,000.00	10,000.00	
National Central University, Nanking (CM 2762).....	2,812.02	261.56	

THE ROCKEFELLER FOUNDATION

Shantung Christian University, Tsinan (RF 33013).....	\$2,500.00	\$2,500.00	
Soochow University (RF 33013) .....	4,000.00	4,000.00	
University of Nanking (RF 33013).....	4,250.00	4,250.00	
Yenching University, Peiping (RF 30020, 30064).....	31,250.00	12,500.00	
Emergency aid			
Equipment and maintenance for Chinese institutions (RF 33013).....	3,000.00	.....	
Endowment of science departments			
Yenching University, Peiping (RF 32081).....	75,416.75	75,416.75	
General Education			
New Education Fellowship, London, England. General program (RF 31081)...	2,500.00	2,500.00	
Departmental Development			
American University of Beirut, Syria			
Improvement of teaching facilities in the medical sciences, nursing, and the pre-medical subjects (RF 31124) .....	404,166.74	50,000.08	
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).....	110,036.12	19,922.78	
Teaching and research in psychiatry (RF 33103).....	42,000.00	.....	
Keio Gijuku University, Tokyo, Japan			
Salary and expenses of visiting professors in the biological sciences (ME 21168, 28432).....	22,339.09	10,744.55	
London School of Economics and Political Science, England			
Library development (RF 31030).....	50,000.00	6,716.84	
Improving facilities for research and postgraduate teaching (RF 31031, 33082) ..	163,373.24	31,195.24	
Massachusetts General Hospital, Boston			
Development of teaching and research in psychiatry (RF 33103).....	38,000.00	.....	
McGill University, Montreal, Canada			
Teaching and research in neurology, neurosurgery, and the physiology and pathology of the nervous system			
Budget 1932-33 (RF 32041).....	23,212.50	15,256.48	351
Endowment (RF 32040).....	1,000,000.00	.....	

## EXHIBIT D—Continued

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THE ROCKEFELLER FOUNDATION

## UNIVERSITIES AND OTHER EDUCATIONAL INSTITUTIONS—Continued

## Departmental Development—Continued

	APPROPRIA-TIONS	1933 PAYMENTS
Nankai University, Tientsin, China Support of Institute of Economics (RF 31123).....	\$72,352.38	\$9,417.23
Syracuse University, New York School of Citizenship and Public Affairs. Research and training (RF 32037)....	50,000.00	15,000.00
Tohoku Imperial University, Sendai, Japan Salary and expenses of visiting professors in biological sciences (ME 21167).....	21,818.20	10,766.28
University of California, Berkeley Program of graduate training and research in public administration (RF 29108)	92,500.00	17,500.00
University of Chicago, Illinois Endowment for development of Faculty of the Social Sciences (RF 31032).....	500,000.00	389,000.00
Interest on RF 31032 (RF 32082).....	8,833.50	1,864.85
Training and research in public administration (RF 32035).....	112,500.00	25,000.00
University of Cincinnati, Ohio Training in public administration (RF 32036).....	77,500.00	17,500.00
University of Leipzig, Germany Institute of Physiological Chemistry Research assistants, fellows, and aid (RF 31016).....	53,644.74	10,819.74
University of Minnesota, Minneapolis Establishment of a laboratory for rock analysis (RF 29058).....	4,437.82	2,770.62
University of Oslo, Norway Institute of Theoretical Astrophysics. Equipment (RF 31035).....	15,000.00	117.19
University of Paris, France Department of Parasitology. Support (RF 30065, 33082).....	21,750.00	5,471.30
University of Stockholm, Sweden Development of social science library (RF 33025).....	21,000.00	5,000.00

University of Szeged, Hungary			
Departments of science and medicine			
Maintenance (RF 31026) . . . . .	\$21,891.65	\$9,693.68	
Scientific equipment (RF 31025) . . . . .	64,959.85	37,125.64	
University of Washington, Seattle			
Chartering and maintaining boat for oceanographic work (RF 30079, 32011) . . . . .	14,544.09	4,715.70	
Yale University, New Haven, Connecticut			
Institute of Human Relations			
Development of psychiatry and care of individuals under observation (RF 29002)	667,302.03	100,000.02	
Maintenance of an anthropoid experiment station, Orange Park, Florida (RF 29090) . . . . .	268,542.14	33,520.28	
Research Programs			
Alaska Agricultural College and School of Mines, Fairbanks			
Study of the aurora (RF 29118) . . . . .	8,467.57	3,351.68	
Brown University, Providence, Rhode Island			
Study of the international gold standard (RF 32073) . . . . .	20,000.00	11,988.76	
California Institute of Technology, Pasadena			
Research in biology (RF 33106) . . . . .	50,000.00	.....	
Research in chemistry (RF 33109) . . . . .	10,000.00	.....	
Research in physics and chemistry (RF 32060) . . . . .	30,000.00	20,000.00	
China Medical Board, Inc., New York City			
Peiping Union Medical College			
Human paleontological research in Asia (RF 32100) . . . . .	80,000.00	.....	
Columbia University, New York City			
General research fund for development of advanced humanistic work (RF 31051, 33031) . . . . .	87,500.00	37,500.00	
Research and field training in anthropology (RF 32057, 33011) . . . . .	12,500.00	8,557.12	
Research in medical mycology (RF 29027) . . . . .	4,601.88	4,601.88	
Research in the social sciences (RF 30036-37) . . . . .	483,600.02	71,650.02	
Research in virus diseases (RF 32055) . . . . .	16,500.00	4,060.15	
Studies of the common cold (RF 31086, 33062) . . . . .	21,000.00	13,500.00	

## EXHIBIT D—Continued

## UNIVERSITIES AND OTHER EDUCATIONAL INSTITUTIONS—Continued

## Research Programs—Continued

## Columbia University—Continued

Studies at the School of Tropical Medicine, University of Puerto Rico, on nutrition in Puerto Rico (RF 30089).....

APPROPRIA-TIONS	1933 PAYMENTS
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## 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).....

187,690.38	24,581.82
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## Hanover Polytechnic School, Germany

Scientific equipment for research in inorganic chemistry (RF 31151).....

11,300.29	4,750.19
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## Harvard University, Cambridge, Massachusetts

Advanced research in the humanities (RF 33030).....

50,000.00	10,000.00
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Chemical research to determine the heats of organic reactions (RF 32098).....

45,000.00	10,000.00
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Geophysical research (RF 31134).....

35,000.00	
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Field studies in infantile paralysis (RF 33016).....

5,000.00	
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Research in anthropology (RF 31042).....

50,000.00	15,000.00
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Research in industrial hazards (RF 30031).....

684,537.06	108,682.70
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Research in physiology and physical chemistry (RF 30028).....

124,501.84	25,080.86
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Research fund for social sciences (RF 32032).....

347,875.00	63,666.67
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Survey of crime and criminal justice (RF 30077).....

2,500.00	2,500.00
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Harvard University and Radcliffe College, Cambridge, Massachusetts

Research in the field of international relations (LS 993).....

349,496.46	48,125.31
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Iowa State College of Agriculture and Mechanic Arts, Ames

General research fund in the natural sciences (RF 31077).....

20,000.00	8,750.00
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Johns Hopkins University, Baltimore, Maryland

Biological research (RF 30005).....

290,000.00	45,000.00
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THE ROCKEFELLER FOUNDATION

General research fund in the humanities (RF 30035).....	\$50,000.04	\$20,000.04
Research and graduate work in the Department of Chemistry (RF 29101).....	10,007.50	10,000.00
Research in psychiatry (RF 33043).....	80,000.00	10,000.00
Study of deafness (RF 32024).....	105,000.00	12,168.09
Study of obstetrical records (RF 29041).....	19,907.94	4,477.32
Leland Stanford, Jr., University, Stanford University, California		
General research fund in the medical sciences (RF 30070).....	40,000.00	10,000.00
Research fund for the social sciences (RF 32031).....	193,750.00	41,550.00
London School of Economics and Political Science, England		
Research fund (LS 994, RF 33007, 33082).....	74,671.56	39,094.65
Massachusetts Institute of Technology, Cambridge		
Aerological research (RF 32101, 33110).....	14,300.00	6,000.00
General research fund for physics, chemistry, geology, and biology (RF 31050) ..	105,000.00	45,000.00
McGill University, Montreal, Canada		
Research in the social sciences (RF 30107).....	78,825.54	24,811.74
Research in surgery (RF 32097).....	15,000.00	15,000.00
Ohio Wesleyan University, Delaware, Ohio		
Support of the Perkins Observatory (RF 32074).....	18,330.32	10,513.00
Peiping Union Medical College, China		
Field studies in kala-azar (CM 2733) .....	1,335.12	
Human paleontological research in Asia (RF 29047, 32021).....	17,767.52	11,152.42
Princeton University, New Jersey		
Research work of the Department of Geology (RF 29079).....	100,000.00	.....
Royal Joseph Technical University, Budapest, Hungary		
Support of investigations of problems in the chemistry of carbohydrates (RF 30074)	1,500.00	1,000.00
Tulane University of Louisiana, New Orleans		
Department of Middle American Research		
Support (RF 31043).....	22,500.00	11,250.00

## EXHIBIT D—Continued

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## UNIVERSITIES AND OTHER EDUCATIONAL INSTITUTIONS—Continued

## Research Programs—Continued

University of California, Berkeley

Study of chemical aspects of vitamins and hormones (RF 29099)..... \$10,000.00 \$5,000.00  
Institute of Social Sciences, Research (RF 33112)..... 30,000.00 .....

University of Chicago, Illinois

Aid to social science facilities (RF 31133)..... 350,000.00 82,575.00  
General research fund in the humanities (RF 31132, 33123)..... 100,000.00 50,000.00  
Oriental Institute. Support of foreign work (RF 32071, 32094, 33021)..... 650,382.38 372,164.05  
Program of local community research (RF 31131)..... 226,945.00 39,422.50  
Publication of volumes on comparative civic education (LS 959)..... 3,307.69 2,360.00  
Research program of the Department of Anthropology (RF 29069)..... 22,500.00 15,000.00  
Research work in the biological sciences (RF 29083, 33105)..... 96,415.42 30,000.00  
Studies in comparative philology (RF 29135)..... 32,559.24 5,795.00

University of Denver, Colorado

Bureau of Business and Social Research. Support (RF 31076)..... 2,500.00 2,500.00  
University of Freiburg im Breisgau, Germany

Equipment for research work in physical chemistry (RF 30093)..... 18,584.31 1,210.28

University of Hawaii, Honolulu

Racial research (RF 31096, 33050)..... 60,000.00 23,333.32

University of Leiden, Netherlands

Purchase and endowment of a photographic telescope for Union Observatory, Johannesburg, Union of South Africa (RF 30021)..... 84,844.92 1,171.90

University of Liverpool, England

Social survey of Merseyside  
Completion of report (RF 32013)..... 102.50 .....

Publication of report (RF 32014)..... 2,400.00 .....

University of London, England

School of Oriental Studies. Research in African linguistics (RF 32072)..... 32,532.50 11,685.00

APPROPRIA-TIONS      1933 PAYMENTS

THE ROCKEFELLER FOUNDATION

University of Louvain, Belgium. Institute of Economics. Business cycle research (RF 33010).....	\$5,000.00	\$145.35
University of Michigan, Ann Arbor Archeological research at Karanis, Egypt (RF 32103).....	35,000.00	17,500.00
University of Minnesota, Minneapolis Economic and social study of unemployment (RF 31004, 32012).....	50,000.00	50,000.00
General research fund (RF 31007).....	180,000.00	60,000.00
University of Munich, Germany Institute of Physics. Study of electron movements and related problems (RF 31015).....	1,300.00	1,300.00
University of North Carolina, Chapel Hill Program in the social sciences (RF 32029).....	75,000.00	30,000.00
Research in the natural sciences (RF 32034).....	12,500.00	5,000.00
University of Oregon, Eugene Medical School. General research fund (RF 32051).....	9,750.00	6,500.00
University of Oslo, Norway Research program of the Institute of Economics (RF 31122).....	42,980.00	7,775.00
University of Paris, France Radium Institute. Division of Physics Support of scientific personnel (RF 32076).....	120,000.00	11,417.97
University of Pennsylvania, Philadelphia Excavations at Ur of the Chaldees (RF 31078).....	16,000.00	12,000.00
General research fund (RF 30094).....	40,000.04	17,500.04
Study of living tissues (RF 29064).....	41,125.16	13,829.08
Wharton School of Finance and Commerce Support of the Industrial Research Department (RF 32050).....	50,000.00	37,500.00
University of Rochester, New York School of Medicine and Dentistry Development of a habit-training clinic in the Department of Psychiatry (RF 29063).....	45,500.08	26,000.06

## EXHIBIT D—Continued

## UNIVERSITIES AND OTHER EDUCATIONAL INSTITUTIONS—Continued

## Research Programs—Continued

## University of Rochester—Continued

## School of Medicine and Dentistry—Continued

General research fund (RF 29026).....	\$25,000.00	\$20,000.00
Special research in dental pathology (RF 31018, 32015, 33019-20).....	29,936.00	19,314.13
Studies of the effects, in health and disease, of heat produced by radiation (RF 30090, 32006).....	7,605.07	7,260.51

## University of Stockholm, Sweden

General research program in the social sciences (RF 31034, 33026).....	27,000.00	9,000.00
Increased facilities for investigations in zoophysiology (RF 31149).....	6,511.13	4,667.25

## University of Texas, Austin

Development of program in the social sciences (RF 32030).....	112,500.00	12,500.00
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## University of Toronto, Canada

Department of Pediatrics. Research (RF 29028).....	8,000.00	7,889.31
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## University of Uppsala, Sweden

Institute of Physical Chemistry. Additional research assistants (RF 31150)....	9,081.39	4,186.76
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## University of Virginia, Charlottesville

Program of research in the social sciences (RF 30106).....	40,000.04	17,500.04
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## University of Warsaw, Poland

Institute of Physics. Research apparatus (RF 31027).....	10,198.59	6,703.90
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## Vanderbilt University, Nashville, Tennessee

School of Medicine. General research fund in the medical sciences (RF 31136)...	200,000.00	50,000.00
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## Washington University, St. Louis, Missouri

General research fund (RF 30038).....	100,000.00	40,000.00
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Research on virus diseases (RF 32056).....	10,000.00	2,500.00
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Research in neurophysiology (RF 33061).....	58,500.00	5,850.00
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## Western Reserve University, Cleveland, Ohio

Research on whooping cough (RF 32025).....	21,000.00	3,500.00
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THE ROCKEFELLER FOUNDATION

<b>Yale University, New Haven, Connecticut</b>			
Research fund in the humanities (RF 32033).....	\$250,000.00	\$50,000.00	
Research in psychology, child development, and social sciences (RF 29008).....	975,000.00	150,000.00	
School of Law. Assistance for investigations (LS 900).....	11,000.00	11,000.00	
School of Medicine			
General research fund (RF 29147).....	76,250.00	21,250.00	
Special research in dental pathology (RF 31103, 32066, 33034).....	37,500.00	25,000.00	
Support of excavations at Jerash in Transjordan and Dura-Europos in Syria (RF 31047).....	7,500.00	7,500.00	
<b>Land and Buildings</b>			
Chulalongkorn University, Bangkok, Siam			
Addition to pathology building and a building for the School of Nursing (RF 30023).....	95,311.62	55,293.89	
London School of Economics and Political Science, England			
Erection and equipment of library building (RF 31029).....	244,193.19	209,480.91	
Purchase of land for expansion of school plant (RF 31028).....	150,000.00	31,871.08	
McGill University, Montreal, Canada			
Construction and equipment of a laboratory in the Royal Victoria Hospital (RF 32040).....	232,652.00	103,586.35	
Shanghai. Purchase of land for a medical school (CM 2269).....	2,031.65	.....	
State Institute of Public Health, Prague, Czechoslovakia			
Building and equipment for School of Nurses for Public Health and Social Welfare (RF 30082).....	100,000.00	96,005.01	
University College, London, England			
Department of Physiology. Building and equipment (RF 33042).....	16,400.00	9,212.94	
University of Breslau, Germany			
Building of neurological laboratory (RF 30081).....	50,000.00	50,000.00	
University of Geneva, Switzerland			
Station of Experimental Zoology. Construction and equipment (RF 31036)....	40,000.00	24,409.12	

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## EXHIBIT D—Continued

## UNIVERSITIES AND OTHER EDUCATIONAL INSTITUTIONS—Continued

## Land and Buildings—Continued

	APPROPRIA-TIONS	1933 PAYMENTS	THE ROCKEFELLER FOUNDATION
University of Göttingen, Germany Institute of Inorganic Chemistry. Construction and equipment (RF 32049, 33054).....	\$45,215.31	\$39,164.64	
University of Lyon, France Faculty of Medicine and Pharmacy. Land and building (ME 21242, 28138, RF 29152).....	229,713.46	Cr. 3,930.00	
School of Nursing. Building and equipment (RF 32064, 33054).....	135,470.96	104,612.20	
University of Nancy, France Institute of Hygiene. Building improvements (ME 28019).....	407.16	.....	
University of Oslo, Norway Institute of Theoretical Astrophysics. Construction and equipment (RF 31035).....	82,745.02	56,873.55	
University of Oxford, England Development of the Bodleian and other libraries (RF 31121).....	2,300,000.00	104,928.09	
University of Stockholm, Sweden Construction of a social science building (RF 31033).....	47,110.61	34,916.65	
Greenhouse for departments of biochemistry and plant physiology (RF 31106) .....	16,000.00	.....	
University of Sydney, Australia Medical School. Building of clinical laboratory (RF 30011).....	329,330.00	220,280.50	
University of Utrecht, Netherlands Institute of Comparative Physiology. Construction of building (RF 33038, 33081).....	101,000.00	.....	
RESEARCH INSTITUTIONS AND ORGANIZATIONS Medical Science Education Chinese Medical Association, Shanghai. General budget (RF 32016, 33045).....	14,472.87	1,431.15	

Social Science Education				
Laboratory of Anthropology, Santa Fe, New Mexico				
Support of field training course in anthropology (RF 29116) . . . . .	\$34,115.15	\$9,459.90		
Social Science Research Council, New York City				
Instruction in agricultural economics (RF 30104) . . . . .	30,210.13	7,329.60		
General Education				
Canadian National Committee for Mental Hygiene, Toronto				
Development of training centers for advanced students (RF 30088) . . . . .	30,787.50	10,200.00		
General Development				
American Historical Association, Washington, D. C.				
Support of the International Committee of Historical Sciences, Zurich, Switzerland (LS 951) . . . . .	8,850.54	4,354.34		
American Schools of Oriental Research, Baghdad and Jerusalem				
Current expenses (RF 29134) . . . . .	130,000.00	40,000.00		
Endowment (RF 29134) . . . . .	229,224.28	8,769.58		
Australian National Research Council, Sydney				
Visiting professors (ME 21203) . . . . .	27,427.95	1,572.78		
Bermuda Biological Station for Research, Inc.				
Support of work (RF 31107) . . . . .	6,000.00	6,000.00		
Brookings Institution, Inc., Washington, D. C.				
General endowment (LS 929) . . . . .	2,000,000.00			
Support of research (RF 31125) . . . . .	187,500.00	75,000.00		
Canton of Geneva, Switzerland	Department of Public Instruction			
Postgraduate Institute of International Studies. Maintenance (RF 29136) . . . . .	770,214.18	63,611.75		
Economic Foundation, New York City				
National Bureau of Economic Research	Support (LS 930) . . . . .	25,000.00	25,000.00	
Hungarian Biological Research Institute, Tihany.	Maintenance (RF 31061) . . . . .	5,843.59	2,366.00	
Institute for Comparative Research in Human Culture, Oslo, Norway				
General budget (LS 1006, RF 30086) . . . . .	12,508.11	10,008.11		
Institute of Economic and Social Research, Paris, France				
Establishment and support (RF 33072) . . . . .	350,000.00	.....		

## EXHIBIT D—Continued

## RESEARCH INSTITUTIONS AND ORGANIZATIONS—Continued

## General Development—Continued

	APPROPRIA-TIONS	1933 PAYMENTS	THE ROCKEFELLER FOUNDATION
Institute of Economics and History, Copenhagen, Denmark General budget (RF 30085, 33071).....	\$24,000.00	\$6,000.00	
Institute of Pacific Relations, Honolulu, Hawaii General program (RF 31080, 33048, 33114).....	55,000.00	30,000.00	
International Institute for the Study of African Languages and Cultures, London, England General budget (RF 31041).....	205,389.52	28,894.45	
Long Island Biological Association, Cold Spring Harbor, New York Work of the Biological Laboratory (RF 32091).....	20,000.00	20,000.00	
National Bureau of Economic Research, New York City General budget (RF 29073, 33063).....	392,120.05	69,710.00	
Social Science Research Council, New York City. General budget (LS 875).....	300,000.04	50,000.04	
Woods Hole Oceanographic Institution, Massachusetts Current expenses (RF 30004).....	400,000.00	90,000.00	
Zoological Station of Naples, Italy. Current expenses (RF 32087).....	22,260.00	7,000.00	
Research Programs			
American Council of Learned Societies, Washington, D. C. Research in paleography (RF 29133).....	34,345.50	13,992.44	
Support of projects in the field of humanistic studies (RF 31129).....	278,742.84	127,813.54	
Development of a training center for Far Eastern studies at the Library of Congress, Washington, D. C. (RF 33082, 33094).....	14,000.00	.....	
American Law Institute, Philadelphia, Pennsylvania Study of law administration in the federal courts (RF 31083).....	15,000.00	.....	
Association for the Study of Negro Life and History, Washington, D. C. Research studies and publications (RF 30053).....	4,746.75	4,746.75	

Australian National Research Council, Sydney		
Anthropological studies (RF 31095) .....	\$40,000.00	\$10,125.00
Ethnological research in the Melanesian Islands (RF 32059).....	6,500.00	6,452.22
Austrian Institute for Trade Cycle Research, Vienna		
Research program (RF 30087).....	16,478.44	7,917.66
Behavior Research Fund, Chicago, Illinois		
General budget (RF 32054).....	21,825.69	12,291.71
Bernice P. Bishop Museum, Honolulu, Hawaii		
Research in Polynesian anthropology (RF 32058).....	7,500.00	6,500.00
Canadian National Committee for Mental Hygiene, Toronto		
Program of mental hygiene and social research in Canadian universities (LS 943, RF 33049).....	92,669.06	28,173.65
Central Institute for the Deaf, St. Louis, Missouri		
Research in neurology (RF 33006) .....	2,600.00	1,262.21
Community Council of Philadelphia, Pennsylvania		
Support of Department of Research (RF 32096, 33073).....	12,500.00	7,500.00
Council on Foreign Relations, New York City		
Research program (RF 32105).....	75,000.00	25,000.00
Dutch Economic Institute, Rotterdam, Netherlands		
Research program (RF 31046) .....	20,000.00	5,000.00
Economic Foundation, New York City		
International study of the history of prices (RF 29138, 33113).....	204,077.83	55,388.83
Foreign Policy Association, New York City		
Support of Research Department (RF 33003).....	50,000.00	25,000.00
Geneva Research Center, Switzerland		
General research budget (RF 33027).....	24,000.00	2,000.00
Industrial Relations Counselors, Inc., New York City		
Study of administrative procedure of employment exchanges (RF 31089, 32053) .....	11,500.00	11,500.00
Study of administrative procedure of unemployment insurance (RF 33052).....	2,500.00	2,500.00
Institute of International Economics and Maritime Trade, Kiel, Germany		
Research program (RF 31063, 32083).....	31,000.00	26,000.00

## EXHIBIT D—Continued

## RESEARCH INSTITUTIONS AND ORGANIZATIONS—Continued

## Research Programs—Continued

	APPROPRIA-TIONS	1933 PAYMENTS
Institute for Psychiatric Research, Munich, Germany Research in neurohistology, serology, and biochemistry (RF 31045).....	\$81,500.00	\$12,082.82
Institute of Social and Political Sciences, Heidelberg University, Germany Research in the social and political sciences (LS 984).....	14,211.54	12,096.10
Institute of Pacific Relations, Honolulu, Hawaii Program of research in the social sciences (RF 30084).....	150,000.00	50,000.00
International Institute of Public Law, Paris, France Research program (RF 31001).....	15,000.00	4,908.72
Kaiser Wilhelm Institute of Anthropology, Human Heredity, and Genetics, Berlin-Dahlem, Germany Research on twins and the effect of poisons on germ plasm (RF 32077).....	6,052.63	3,000.00
Kaiser Wilhelm Institute for Brain Research, Berlin-Buch, Germany Special apparatus and maintenance (RF 32063).....	12,190.43	11,098.00
Kaiser Wilhelm Institute of Physical Chemistry and Electrical Chemistry, Berlin-Dahlem, Germany Special scientific apparatus (RF 30075).....	670.11	.....
Marine Biological Association of China, Amoy Support of a marine institute of biology (RF 31108, 33039).....	3,080.68	714.20
Massachusetts Department of Mental Diseases, Boston Statistical and record study (RF 31082).....	13,689.68	7,705.03
Massachusetts Society for Mental Hygiene, Boston Work in the field of mental disorders (RF 30032).....	8,909.74	5,693.30
Medical Research Council, London, England Research on puerperal fever (RF 31044).....	90,860.50	6,620.94
Research on virus diseases (RF 31153).....	11,089.09	3,308.93

National Institute of Industrial Psychology, London, England Research program (RF 32085).....	\$20,000.00	\$8,070.00
National Research Council, Washington, D. C. Conferences (RF 32010).....	20,000.00	10,000.00
Committee for Research in Problems of Sex (RF 31066, 32099, 33104).....	198,304.52	69,954.33
New Zealand. Department of Scientific and Industrial Research Work of the Apia Observatory, Western Samoa (RF 31079, 33012).....	5,000.00	5,000.00
Notgemeinschaft der Deutschen Wissenschaft, Berlin, Germany Anthropological study of the German population (RF 29137).....	62,500.00	37,500.00
Research in international relations (RF 31135).....	22,449.17	15,629.01
Orthological Institute, London, England Research in the Chinese and Japanese languages (RF 33005).....	35,000.00	14,607.80
Roscoe B. Jackson Memorial Laboratory, Bar Harbor, Maine Research in mammalian genetics (RF 33107).....	11,000.00	.....
Royal Anthropological Institute of Great Britain and Ireland, London General budget (RF 31110).....	5,000.00	2,000.00
Royal Institute of International Affairs, London, England Program of research (RF 32038, 33082).....	125,560.00	30,000.00
Royal Institution of Great Britain, London Davy Faraday Research Laboratory. Endowment and maintenance (RF 30026)...	100,750.00	72,803.57
Rumanian Institute of Social Science, Bucharest General administration and research program (RF 31094).....	17,500.00	7,500.00
Social Science Research Council, New York City Conferences and planning (RF 31127).....	242,811.05	26,482.35
General research projects (RF 31126).....	225,000.00	.....
Research planning in the field of international relations (RF 31049).....	12,500.00	.....
Research work (LS 876).....	157,055.95	149,291.74
<i>Thesaurus Linguae Latinae</i> , Munich, Germany General budget (RF 32104).....	20,000.00	3,138.14
Trudeau Foundation, Trudeau, New York Research in tuberculosis (RF 30034).....	22,844.40	10,000.01

## EXHIBIT D—Continued

## RESEARCH INSTITUTIONS AND ORGANIZATIONS—Continued

## Research Programs—Continued

	APPROPRIA-TIONS	1933 PAYMENTS	THE ROCKEFELLER FOUNDATION
Welfare Council of New York City Support of Research Bureau (RF 31048).....	\$117,500.00	\$85,000.00	
Land and Buildings Jungfraujoch Scientific Station, Switzerland Construction and equipment (RF 33111).....	35,700.00	.....	
Kaiser Wilhelm Institute of Cell Physiology and Physics, Berlin-Dahlem, Germany Land, buildings, and equipment (RF 30027).....	360,436.75	.....	
Marine Biological Association of the United Kingdom, Plymouth, England Addition to laboratory buildings and apparatus (RF 31013).....	13,163.25	7,162.06	
SPECIAL COMMITTEES AND COMMISSIONS American Institute of Mining and Metallurgical Engineers, New York City Mineral inquiry (RF 31019).....	6,826.24	4,285.90	
Committee on the Grading of Nursing Schools, New York City Publication (RF 32008).....	10,000.00	.....	
International Commission for the Polar Year 1932-33, Copenhagen, Denmark Equipment and expenses (RF 32022).....	15,914.00	13,489.00	
International Committee of Historical Sciences, Zurich, Switzerland General expenses (RF 33116).....	14,000.00	.....	
National Institute of Public Administration, New York City Commission on Old Age Security (RF 30092, 32003).....	1,361.56	1,361.56	
National Research Council, Washington, D. C. Work of the Committee on Drug Addiction (RF 31130).....	150,000.00	35,301.83	
Committee on Effects of Radiation on Living Organisms (RF 33108).....	10,000.00	.....	
Research Committee on Social Trends, Washington, D. C. Research on recent social changes (RF 29154).....	81,414.44	33,104.10	

Science Advisory Board, Washington, D. C.			
General expenses (RF 33086).....	\$50,000.00	\$8,000.00	
Social Science Research Council, New York City			
Committee on Government Statistics and Information Services, Washington, D. C.			
Expenses (RF 33065).....	100,000.00	36,828.25	
FELLOWSHIPS AND GRANTS IN AID			
American Council of Learned Societies, Washington, D. C.			
Fellowships in the field of humanistic studies (RF 31055, 33032).....	160,813.34	50,287.12	
Grants in aid, support of projects, and administration (RF 29085, 31056, 33122).....	156,160.61	33,535.61	
American School of Classical Studies at Athens, Greece			
Fellowships in archeology in connection with the excavation of the Athenian Agora (RF 31020, 32093).....	36,600.00	7,600.00	
Australian National Research Council, Sydney			
Fellowships in anthropology (ME 21184).....	1,238.23	1,238.23	
Developmental Aid			
Europe. Constructive program of aid to medical education without capital expenditure (ME 28369).....	2,142.49	17.20	
Fellowships Administered by The Rockefeller Foundation			
Humanities (RF 29142).....	50,000.00	1,010.50	
Medical sciences (RF 29140, 30099, 31141, 32110).....	453,996.22	125,842.63	
Natural sciences (RF 30039, 31142, 32023, 32111, 33029).....	407,505.55	131,968.61	
Nursing (ME 28373, 28376, RF 29149, 30100, 31143, 33018).....	113,984.02	34,641.29	
Psychiatry (RF 32046, 32113).....	74,625.03	22,312.02	
Social sciences (RF 29141, 31057, 32045, 32112).....	678,296.52	292,530.91	
Grants in Aid			
Returned fellows of the Rockefeller boards. Research (RF 32048).....	9,689.50	1,270.68	
Medical sciences			
In the fields of psychiatry and public health teaching (RF 33075).....	30,000.00	1,301.99	
Natural sciences			
In fields of vital processes and the earth sciences (RF 33074).....	30,000.00	3,200.00	
Humanities (RF 33095).....	30,000.00	1,000.00	367

## EXHIBIT D—Continued

	APPROPRIA-TIONS	1933 PAYMENTS
<b>FELLOWSHIPS AND GRANTS IN AID—Continued</b>		
Hungarian Scholarship Council, Budapest		
Foreign scholarships in medicine (RF 29111, 32069).....	\$10,937.89	\$4,743.48
Kaiser Wilhelm Institute of Physical Chemistry and Electrical Chemistry, Berlin-Dahlem, Germany		
Scientific equipment (RF 32086).....	13,200.00	10,758.31
Laboratory Aid in Europe		
Equipment and supplies for medical departments and returned foreign fellows in the medical sciences (ME 21206).....	1,151.73	.....
London Hospital, London, England		
Development of neurosurgery (RF 31073).....	32,475.95	Cr. 1,665.72
Medical Research Council, London, England		
Fellowships in the medical sciences (ME 28126, RF 32004, 33076).....	47,300.38	20,136.25
National Research Council, Washington, D. C.		
Fellowships		
Biological sciences (RF 29004-05, 29132, 31053).....	248,765.75	138,467.35
Medical sciences (ME 21232, RF 29060, 31054, 33041).....	109,892.59	43,773.48
Physical sciences (RF 29131, 31052).....	266,124.12	136,912.26
Physical and biological sciences (RF 33040).....	150,000.00	.....
Research aid fund (RF 32109, 33121).....	100,000.00	50,000.00
Notgemeinschaft der Deutschen Wissenschaft, Berlin, Germany		
Fellowships in medical sciences (ME 28127, RF 32005).....	28,139.86	12,100.22
Peiping Union Medical College, China		
Foreign fellowships and grants in aid for staff (RF 29128, 33033).....	46,525.76	25,086.07
Fellowships and grants in aid to graduate and departmental students in Peiping Union Medical College (RF 29128, 33033).....	27,193.00	8,010.24
Philippine Islands		
Research in genetics (RF 31152).....	5,000.00	4,586.64

Queen's University, Belfast, Northern Ireland			
Development of the medical sciences (RF 31069).....	\$4,583.43	\$1,320.25	
Research Aid Funds			
Europe			
Medical sciences (RF 29024, 29127, 30097, 31139, 32106).....	294,760.70	67,749.64	
Natural sciences (RF 29025, 31067, 31140, 32107).....	69,257.45	26,812.30	
Social sciences (RF 30007, 32047, 33009).....	96,162.99	38,902.60	
Humanities (RF 30008, 32108).....	37,846.25	7,359.00	
Special fund for European scholars (RF 33055, 33077).....	290,000.00	24,072.95	
Research and Developmental Aid in the Medical and Natural Sciences in China (RF 31022, 32027, 32028, 33028).....	31,109.24	15,249.17	
Social Science Research Council, New York City			
Fellowships in the social sciences (RF 29139, 31109, 33053).....	284,185.18	112,391.80	
Graduate fellowships in agricultural economics and rural sociology (LS 910).....	26,865.52	25,950.60	
Grants in aid of research (RF 31128).....	100,000.00	21,100.00	
St. Bartholomew's Hospital Medical College, London, England			
Development of pediatrics (RF 31072).....	7,514.06	2,210.70	
Trinity College, Dublin, Irish Free State			
Development of medical sciences (RF 31071).....	11,267.20	4,473.84	
University College, Dublin, Irish Free State			
Development of medical sciences (RF 31070).....	9,942.65	3,459.91	
University of Padua, Italy			
Institute of Histology and Embryology. Research (RF 31074).....	7,950.00	1,457.28	
University of Pennsylvania, Philadelphia			
Henry Phipps Institute for the Study, Treatment, and Prevention of Tuberculosis Development and testing of a stereofluoroscope (RF 31087).....	687.90	.....	
University of Turin, Italy			
Institute of Anatomy. Research in problems of growth (RF 31068).....	7,905.00	814.95	
Visits of Individuals and Commissions (RF 30101).....	25,244.88	5,680.31	

EXHIBIT D—*Continued*

	APPROPRIA-TIONS	1933 PAYMENTS
<b>STUDIES OF PRESSING ECONOMIC PROBLEMS</b>		
Appraisal and Planning Projects		
Visits of foreign authorities (RF 33057).....	\$10,000.00	\$2,946.83
Columbia University, New York City		
Study of effects of sales taxes (RF 33059).....	28,000.00	28,000.00
Social Science Research Council, New York City		
Commission of Inquiry on National Policy in International Economic Relations (RF 33089).....	60,000.00	.....
Tennessee Valley study (RF 33058).....	10,000.00	
Study of unemployment reserves and relief (RF 33088).....	5,000.00	3,000.00
Brookings Institution, Inc., Washington, D. C.		
Concurrent study of Agricultural Adjustment Administration (RF 33060).....	100,000.00	23,656.35
Concurrent study of Government financial policies (RF 33066).....	35,000.00	8,163.71
Concurrent study of National Industrial Recovery Administration (RF 33067).....	115,000.00	9,152.57
University of California, Berkeley		
Field study of barter groups (RF 33087).....	3,000.00	.....
Committee on the Use of Leisure Time, New York City		
Series of public hearings on possible program (RF 33091).....	3,000.00	3,000.00
Direct grants to operating government agencies		
Federal Emergency Relief Administration, Washington, D. C.		
Detailed studies of relief cases (RF 33090).....	50,000.00	13,000.00
Subventions to Cooperating Private Agencies		
American Municipal Association, Chicago, Illinois		
Advisory service on civil and public works under local governments (RF 33070, 33097).....	130,000.00	18,846.40
Slum Clearance Committee of New York, New York City (RF 33096).....	5,000.00	5,000.00
New York Adult Education Council, New York City		
Advisory services in New York area (RF 33093).....	10,000.00	.....

Administration			
Special staff (RF 33056).....	\$25,000.00	\$5,802.64	
<b>MISCELLANEOUS</b>			
Abraham Lincoln Foundation, Dresden, Germany			
Continuance of program in humanistic studies (RF 30096).....	15,000.00	10,000.00	
American Geographical Society, New York City			
Preparation and publication of a millionth map of Hispanic America (RF 33051).....	25,000.00	14,000.00	
American Institute of Physics, New York City			
Scientific publications (RF 32017).....	15,000.00	3,568.68	
American Library Association, Chicago, Illinois			
Conference on research resources of libraries in Europe and America (RF 33047)....	2,000.00	2,000.00	
American Mathematical Society, New York City			
Scientific publications (RF 32018, 33014).....	14,625.00	3,375.00	
Support of <i>Annals of Mathematics</i> (RF 32019).....	1,875.00	1,125.00	
American Psychological Association, Princeton, New Jersey			
<i>Psychological Abstracts</i> (LS 694).....	29,006.87	6,282.37	
American School of Classical Studies at Athens, Greece			
Establishment of a museum of antiquities on the island of Lesbos (RF 31037)....	14,000.00	14,000.00	
Bibliographical Society of America, Buffalo, New York			
Expenses of securing subscriptions to the Catalogue of Printed Books in the British Museum (RF 29088).....	639.07	.....	
Index of American newspaper files (RF 33084).....	25,000.00	.....	
Bibliothèque Nationale, Paris, France. Collections of serial publications (RF 30046) ..	4,998.77	4,998.77	
British Museum, London			
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).....	93,534.53	841.30	
Additional service in connection with the new edition of the Catalogue of Printed Books (RF 29087).....	7,405.60	881.13	
Bulletins and Reprints (RF 31154).....	4,819.80	2,838.54	

## EXHIBIT D—Continued

	APPROPRIA- TIONS	1933 PAYMENTS
<b>MISCELLANEOUS—Continued</b>		
Citizens Family Welfare Committee of New York City (RF 33092) . . . . .	\$200,000.00	\$150,000.00
<i>Encyclopaedia of the Social Sciences, New York City</i>		
Expenses of production and distribution (RF 31137, 32114) . . . . .	165,410.13	102,410.13
Exchange Fund (RF 33054, 33082) . . . . .	107,710.70	.....
Hospitals in China		
Board of Foreign Missions of the Presbyterian Church in the United States		
Changteh. Maintenance (CM 2781) . . . . .	5,056.90	1,000.00
Chefoo. Maintenance (CM 2780) . . . . .	1,000.00	1,000.00
Church of Scotland Foreign Mission Committee		
Ichang. Maintenance (CM 2719) . . . . .	750.00	250.00
Humanistic Studies in Europe (LS 919) . . . . .	8,873.61	8,873.61
League of Nations, Geneva, Switzerland		
Publication of monetary and banking laws (RF 29076) . . . . .	40,000.00	7,000.00
Analytical research work of the Financial Section and Economic Intelligence Service (RF 33023) . . . . .	125,000.00	.....
Fiscal Committee. Study of international double taxation problems (RF 30030, 33004) . . . . .	126,184.90	74,174.50
Library of Congress, Washington, D. C. Accumulation of source materials for American history (RF 33024) . . . . .	20,000.00	10,000.00
Library of the Society of Physicians, Vienna, Austria		
Medical literature (ME 21153) . . . . .	184.20	120.05
Medical Literature for Russia (RF 32092, 33085) . . . . .	30,000.00	14,920.22
Missions Institutions and Medical Schools in China		
Loss in exchange on Foundation appropriations (CM 2503) . . . . .	15,000.00	.....
National Academy of Sciences, Washington, D. C.		
Work of the Committee in Aid of Research Publications (RF 31058) . . . . .	21,875.00	10,500.00

National Research Council, Washington, D. C.			
Annual tables of constants and numerical data. Publication (RF 32020).....	\$18,000.00	\$12,000.00	
<i>Biological Abstracts</i> (RF 30108, 33002).....	83,475.11	75,913.09	
Cost of indexing <i>Biological Abstracts</i> (RF 32068).....	15,000.00	15,000.00	
Prussian State Library, Berlin, Germany			
Preparation of material for the Union Catalogue of Prussian Libraries (RF 32102)....	50,000.00	10,000.00	
Social Science Research Council, New York City			
<i>Social Science Abstracts</i> (LS 877).....	214,816.87	52,467.83	
Society of the Friends of the Bibliothèque Nationale, Paris, France			
Expenses of printing its General Catalogue (RF 29089).....	8,000.00	1,000.00	
New York City Emergency Unemployment Relief Committee 1932-33 (RF 32089-90) .....	750,000.00	650,000.00	
University of North Carolina, Chapel Hill			
For work in the drama (RF 33115).....	7,500.00	.....	
Virginia Historical Society, Richmond			
<i>Virginia Historical Index</i> (RF 33046).....	15,000.00	7,500.00	
PUBLIC HEALTH			
International Health Division, Rockefeller Foundation			
For work in prior years			
(See Exhibit E).....	2,243,992.67		
For work in 1933			
(See Exhibit E).....	2,529,214.00		
For work in 1934 (RF 33099).....	2,200,000.00		
Revolving fund. To provide working capital for the International Health Division (RF 29093).....	200,000.00		
Development of Child Health Measures in County Health Programs in Cooperation with United States Public Health Service (RF 29107).....	5,921.46		
Irish Free State			
Establishment of a national public health laboratory (RF 31118).....	105,000.00		
League of Nations, Health Organization, Geneva, Switzerland			
Epidemiological intelligence, public health documentation, international interchange of public health personnel (RF 29092, 33100).....	555,581.32	263,170.45	

## EXHIBIT D—Continued

## PUBLIC HEALTH—Continued

	APPROPRIA-TIONS	1933 PAYMENTS
Nervous and Mental Diseases Hospital, "Socola," Jassy, Rumania		
Construction of a station for malaria studies (RF 31117).....	\$7,800.00	\$844.93
Schools and Institutes of Hygiene and Public Health		
Bulgaria, Sofia. Land, building, and equipment (RF 30059).....	58,289.31	25,312.01
Italy, Rome. Buildings and equipment (RF 30025, 33080).....	640,533.42	317,927.60
Japan, Tokyo. Construction and equipment (RF 32116).....	1,000,000.00	108,274.99
Rumania, Bucharest		
Construction and equipment (RF 33078).....	110,000.00	.....
Health Center (RF 33079).....	15,000.00	.....
Rumania, Cluj. Additional construction and remodeling (RF 31116).....	6,110.00	5,674.87
Turkey, Angora. Construction, installation, and equipment of Service School of		
Hygiene (RF 29010).....	100,000.00	100,000.00
GENERAL *		
Agricultural Club Work		
Finland (RF 30044).....	14,000.86	10,587.29
Sweden (RF 30043).....	7,415.00	5,779.49
American Association of Museums, Washington, D. C.		
Trailside museums in national parks (LS 912).....	13,572.50	13,572.50
American Library Association, Chicago, Illinois		
Publication of list of foreign government serials (RF 31084) .....	1,476.19	1,476.19
Boy Scouts of America, New York City		
Revolving fund for benefit of magazine, <i>Boys' Life</i> (LS 560).....	49,000.00	.....
Child Study Fellowship Program (LS 918).....	6,173.94	225.00
Commission on Interracial Cooperation, Atlanta, Georgia		
General budget (LS 999).....	251,614.48	36,430.45

\* 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.

East Harlem Nursing and Health Service, Inc., New York City		
General budget (RF 31155).....	\$1,875.00	\$1,875.00
Nursing and health demonstration (RF 31100, 32062).....	87,500.00	30,000.00
Fisk University, Nashville, Tennessee		
Teaching and equipment in field of the social sciences (LS 826).....	26,392.28	26,392.26
Research in the social sciences (LS 827, RF 31064).....	9,100.00	9,100.00
Girl Scouts, Inc., New York City		
Publication of report (LS 925).....	1,500.00	1,500.00
Great Smoky Mountains Memorial Fund, Washington, D. C.		
Expense of Chase National Bank in administering funds (RF 32117).....	500.00	500.00
Harvard University, Cambridge, Massachusetts		
Purchase of Bayer collection of Philippiniana (LS 638).....	50,000.00	3,000.00
Howard University, Washington, D. C.		
Library material in field of social science (LS 898).....	282.77	282.77
Institute of International Education, New York City		
General budget (LS 911).....	122,000.00	24,000.00
Iowa State College of Agriculture and Mechanic Arts, Ames		
Work in child study and parent education (LS 906).....	2,500.00	.....
Jean Jacques Rousseau Institute, Geneva, Switzerland		
General budget (RF 32002).....	23,000.00	7,000.00
Joint Vocational Service, Inc., New York City (For social workers and public health nurses)		
Administrative expenses (RF 31092).....	5,400.00	3,600.00
League of Red Cross Societies, Paris, France		
Budget of Junior Red Cross Division (RF 30067).....	2,500.00	2,500.00
Peiping Union Medical College, China		
Allowance for widow of staff member (RF 29034).....	14,425.68	1,885.22
Playground and Recreation Association of America, Inc., New York City		
General budget (LS 1000).....	300,000.00	50,000.00
Regents of the University of the State of New York, Albany		
Work in child study and parent education (LS 902).....	10,000.00	.....
Scholarships in the social sciences and social work, for American negroes (LS 965).....	8,717.00	.....

EXHIBIT D—*Continued*

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THE ROCKEFELLER FOUNDATION

**GENERAL—Continued**

	APPROPRIA-TIONS	1933 PAYMENTS
Society of the New York Hospital, New York City		
Erection and maintenance of building for Lying-In Hospital (LS 966).....	\$126,128.81	\$126,128.81
State University of Iowa, Iowa City		
Work in child study and parent education (LS 905, 931-32).....	408,590.41	88,378.16
Teachers College, Columbia University, New York City		
Maintenance of Child Development Institute (LS 998).....	125,000.00	100,000.00
University of California, Berkeley		
Maintenance of Institute of Child Welfare (LS 829).....	54,282.10	53,087.90
University of Chicago, Illinois		
Toward expense of establishing cooperative mailing lists for university presses (RF 32095).....	3,000.00	1,500.00
University of Minnesota, Minneapolis		
Work in child study and parent education (LS 909, 933-34).....	305,850.94	71,551.25
University of Toronto, Canada		
Development of child research and parent education (RF 30054).....	120,000.00	17,671.71
Vocational Service for Juniors, New York City		
Training program for counselors (LS 948).....	7,325.06	7,180.85
Y. M. C. A. College, Chicago, Illinois (LS 754).....	4,287.19	4,287.19
<b>ADMINISTRATION</b>		
Executive Offices		
1932 (RF 2824, 3114S).....	103,810.78	28,278.88
1933 (RF 29037, 29115, 30009-10, 30078, 32070, 32118).....	710,908.35	621,360.56
1934 (RF 33117).....	678,050.00	.....
Treasurer's Office		
1932 (RF 31146).....	11,160.83	7,990.30
1933 (RF 32119, 33069, 33098).....	34,249.60	22,913.96
1934 (RF 33118).....	33,463.21	.....
Paris Office		
1932 (RF 31147).....	30,306.85	18,001.70

1933 (RF 32120, 33083) . . . . .	\$99,800.00	\$73,683.10
1934 (RF 33119) . . . . .	117,700.00	.....
Peiping Office 1932 (RF 31148) . . . . .	7,284.51	554.88
Shanghai Office 1933 (RF 32121) . . . . .	10,000.00	7,998.09
1934 (RF 33120) . . . . .	8,700.00	.....
Surveys by Others than Officers (RF 29096, 31003) . . . . .	35,566.31	4,954.46
Moving of Foundation's Offices (RF 33037) . . . . .	40,000.00	34,754.40
 Total Appropriations . . . . .	 \$50,077,612.30	
Unused Balances of Appropriations Allowed to Lapse Rockefeller Foundation (including \$113,786.91 reverting to Authoriza- tions Account) . . . . .	\$1,061,641.85	
International Health Division . . . . .	432,237.44	1,493,879.29
 Total Net Appropriations and Expenditures . . . . .	 \$48,583,733.01	<u>\$14,753,822.05</u>
 REFUNDS ON PRIOR YEAR APPROPRIATIONS		
Mississippi Flood Area. Training Station (IH 31049) . . . . .		\$33.96
Harvard Medical School. Publication of syllabus (IH 23373) . . . . .		2,600.54
Washington University. School of Nursing (IH 31008) . . . . .		373.19
Zagreb School of Nursing (RF 30071) . . . . .		434.58
University of Chicago. Civic education study (LS 624) . . . . .		103.36
University of Chicago. Research facilities and assistance (LS 813) . . . . .		292.50
University of Pennsylvania. Industrial research (LS 839) . . . . .		561.52
Committee on the Costs of Medical Care (RF 32084) . . . . .		244.89
European Medical Journals (RF 2939) . . . . .		17.59
Y. M. C. A. and Y. W. C. A. Foreign work (RF 29035) . . . . .		38.00
Association of American Medical Colleges (DME 21101) . . . . .		3,964.86
Paris Office Building Account (RF 21151) . . . . .		79.57
		<u>\$8,744.56</u>

**EXHIBIT E**  
**INTERNATIONAL HEALTH DIVISION**  
**DESIGNATIONS AND PAYMENTS**

THE ROCKEFELLER FOUNDATION

**STATE AND LOCAL HEALTH SERVICES**

Public Health Administration

United States

Alabama

1933-35 (IH 33014, 33147)..... \$..... \$3,300.00 \$.....

Arkansas

1932-33 (IH 31006, 32017, 33015)..... 1,462.50 2,350.00 2,012.50

Georgia

1933 (IH 30144, 32154)..... 3,000.00 ..... 1,375.00

Kentucky

1932-34 (IH 32069, 32186)..... 11,333.33 ..... 5,783.33

Maryland

1932-35 (IH 32001)..... 6,090.00 ..... ....

Michigan

1933-35 (IH 32003)..... 9,000.00 ..... 607.99

Mississippi

1933 (IH 30146, 32175)..... 2,473.30 ..... 329.94

Nevada

1931-32 (IH 31030)..... 750.00 ..... 750.00

New York

1931-33 (IH 30148)..... 4,250.00 ..... 2,000.00

North Carolina

1933-34 (IH 33056)..... ..... 2,100.00 ....

North Dakota

1933-34 (IH 33016)..... ..... 1,700.00 ....

South Carolina 1932-34 (IH 30006, 32018, 33066).....	\$1,800.00	\$1,200.00	\$1,350.00
Tennessee 1932-35 (IH 32005, 33017).....	5,902.50	4,427.50	1,083.63
Virginia 1932-34 (IH 32019, 33018).....	1,250.00	1,500.00	1,500.00
West Virginia 1933-35 (IH 30007, 32155, 33144).....	2,801.15	4,950.00	1,401.15
Foreign countries			
Central America and Mexico			
Costa Rica. Office in San José 1933 (IH 32078-79).....	.....	2,250.00	1,131.27
Guatemala. Office in Guatemala City 1931-32 (IH 30103, 31068).....	1,280.44	.....	1,280.44
Mexico 1933 (IH 32076).....	.....	2,865.00	1,323.05
The East			
Ceylon and India. Office assistance			
1931 (IH 30173).....	134.16	.....	.....
1932 (IH 31135).....	1,361.46	.....	235.11
1933 (IH 32080).....	.....	1,500.00	276.20
India and Burma. Office assistance			
1933 (IH 32081).....	.....	495.00	257.28
Netherlands East Indies 1933 (IH 32082).....	.....	3,320.00	1,508.55
Philippine Islands 1933 (IH 32083).....	.....	3,500.00	1,210.21
West Indies			
Jamaica. Assistance in Bureau of Health Education 1932-34 (IH 32046).....	7,594.38	.....	2,212.26
Puerto Rico 1931 (IH 30102, 31042).....	1,386.72	.....	1,032.98

## EXHIBIT E—Continued

	PRIOR DESIGNA- TIONS	1933 DESIGNA- TIONS	1933 PAYMENTS	380
<b>STATE AND LOCAL HEALTH SERVICES—Continued</b>				
<b>Public Health Administration—Continued</b>				
Foreign countries—Continued				
West Indies—Continued				
Puerto Rico—Continued				
1932 (IH 31067, 32032).....	\$3,796.86	\$.....	\$3,158.35	
1933 (IH 32077).....	.....	2,350.00	1,996.89	
Divisions of Vital Statistics				
United States				
Alabama				
1933-35 (IH 33008, 33148).....	.....	4,457.50	2,314.60	
Georgia				
1933 (IH 33067).....	.....	1,307.50	.....	
Massachusetts				
1930-35 (IH 30022, 33009).....	2,850.46	2,040.00	3,025.00	
Mississippi				
1932-33 (IH 32023, 33019).....	1,800.00	900.00	1,800.00	
Missouri				
1933-34 (IH 33020).....	.....	1,380.00	345.00	
South Carolina				
1933-34 (IH 33021).....	.....	2,700.00	.....	
Tennessee				
1931-34 (IH 31149, 33022).....	2,331.42	1,570.00	2,669.85	
Foreign countries				
Europe				
Poland				
1933 (IH 32191).....	.....	3,000.00	2,834.59	
Rumania				
1930-34 (IH 30051, 30171, 32016, 32194).....	10,309.19	1,400.00	.....	

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Spain				
1930-33 (IH 29094, 32059) . . . . .	\$21,568.96	\$.....	\$1,754.42	
Yugoslavia				
1931-32 (IH 30101) . . . . .	3,982.04	.....	1,305.33	
The East				
India. Travancore				
1932-33 (IH 32059, 32084) . . . . .	162.50	340.00	190.32	
Divisions of Epidemiology				
United States				
Arizona				
1931-33 (IH 31025) . . . . .	6,450.00	.....	4,031.25	
Georgia				
1931-34 (IH 31029, 33023) . . . . .	4,187.66	3,000.00	2,872.76	
Iowa				
1932-35 (IH 31140, 33149) . . . . .	1,000.00	900.00	638.89	
Kentucky				
1931-34 (IH 31145, 32157, 33167) . . . . .	6,080.67	1,150.00	3,278.55	
Maryland				
1931-34 (IH 31063, 33024) . . . . .	2,893.29	2,250.00	1,331.64	
Massachusetts				
1932-35 (IH 32002) . . . . .	1,725.00	.....	675.00	
Michigan				
Detroit. City Department of Health				
1930-33 (IH 30058, 32156) . . . . .	6,881.07	.....	4,269.83	
1932-35 (IH 32004) . . . . .	7,936.47	.....	2,399.00	
Mississippi				
1932-35 (IH 31070, 32158, 33150) . . . . .	7,254.59	6,000.00	4,107.89	
Missouri				
1933-34 (IH 33025) . . . . .	.....	2,220.00	555.00	
Montana				
1931-34 (IH 31146, 33026, 33055) . . . . .	2,700.75	3,000.00	3,161.54	
New York				
1931-32 (IH 30149) . . . . .	208.36	.....	.....	

## EXHIBIT E—Continued

	PRIOR DESIGNA- TIONS	1933 DESIGNA- TIONS	1933 PAYMENTS
<b>STATE AND LOCAL HEALTH SERVICES—Continued</b>			
<i>Divisions of Epidemiology—Continued</i>			
<i>United States—Continued</i>			
North Carolina 1933-34 (IH 33027).....	\$.....	\$2,100.00	\$470.59
North Dakota 1931-34 (IH 31031, 33028).....	375.00	1,500.00	316.67
South Carolina 1931 (IH 30097).....	363.62	.....	363.62
South Dakota 1931-33 (IH 31000).....	1,856.74	.....	1,736.90
Tennessee 1931 (IH 31150).....	3,991.79	.....	3,794.46
1933-34 (IH 33029).....	.....	3,930.00	982.50
Virginia 1931-32 (IH 31064).....	982.90	.....	798.03
1933-34 (IH 32159, 33069).....	4,000.00	2,000.00	2,977.74
<i>Foreign countries</i>			
<i>Canada</i>			
British Columbia 1931 (IH 31052).....	1,483.02	.....	361.00
1933-35 (IH 32085, 33151).....	.....	5,814.00	1,092.01
Quebec 1931-33 (IH 31054).....	4,929.98	.....	3,200.20
<i>Europe</i>			
Austria 1931-35 (IH 30163).....	3,641.07	.....	1,487.18

Denmark 1932-34 (IH 32015, 32074).....	\$19,000.00	\$.....	\$4,741.55
The East India. Travancore 1932 (IH 32059).....	162.50	.....	46.50
1933 (IH 32086).....	.....	335.00	.....
Public Health Laboratories United States Alabama 1933 (IH 33042).....	.....	2,445.50	2,445.50
Arizona 1931-33 (IH 31002, 31026-27).....	7,300.00	.....	.....
Georgia 1933 (IH 33068).....	.....	3,697.00	.....
Mississippi 1932-34 (IH 32070).....	2,975.00	.....	1,400.00
South Carolina 1932-34 (IH 31147, 32022).....	1,000.00	.....	450.00
Tennessee 1931-33 (IH 31151, 33030).....	1,505.30	1,650.00	1,743.30
Foreign countries Central America Costa Rica. Equipment (IH 33070).....	.....	400.00	157.02
Guatemala. Equipment and supplies (IH 32011).....	10.99	.....	1.44
Nicaragua. Equipment (IH 33071).....	.....	400.00	25.00
Salvador. Equipment (IH 32028, 33072).....	45.83	200.00	.....
Europe Rumania. Equipment (IH 32041).....	3,751.37	.....	1,556.85
South America Colombia 1932 (IH 31071).....	1,377.95	.....	1,195.11
1933 (IH 32087).....	.....	4,200.00	3,287.76
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## EXHIBIT E—Continued

	PRIOR DESIGNA- TIONS	1933 DESIGNA- TIONS	1933 PAYMENTS
<b>STATE AND LOCAL HEALTH SERVICES—Continued</b>			
<b>Public Health Laboratories—Continued</b>			
Foreign countries—Continued			
West Indies			
Puerto Rico. Equipment and supplies			
1932-33 (IH 32031).....	\$1,032.58	\$.....	\$1,031.74
1933-34 (IH 33048).....	.....	1,500.00	100.37
Divisions of Public Health Nursing			
Foreign countries			
Europe			
Denmark			
1931-34 (IH 30164).....	8,476.40	.....	1,958.66
Hungary			
1930-35 (IH 30048, 33003, 33065).....	2,575.04	18,553.00	907.18
Poland			
1932 (IH 31072).....	1,275.00	.....	1,254.50
1933 (IH 32088).....	.....	1,585.00	.....
Public Health Nursing Films			
(IH 32035-36).....	647.99	.....	347.99
Divisions of Sanitary Engineering			
United States			
Arizona			
1933-35 (IH 31028, 33043).....	2,550.00	1,500.00	506.25
Mississippi			
1932-33 (IH 32020, 33031).....	1,800.00	900.00	1,800.00
North Dakota			
1931-34 (IH 31032, 33032).....	1,800.00	3,200.00	1,680.00

South Carolina				
1931-33 (IH 30150, 32021).....	\$2,650.00	\$.....	\$1,762.50	
South Dakota				
1931-33 (IH 31001).....	1,894.91	.....	2,447.04	
Tennessee				
1933-34 (IH 33033).....	.....	2,300.00	487.50	
Foreign countries				
Central America				
Costa Rica and Nicaragua. Studies of watersupplies. (IH 32047)	196.24	.....	144.97	
Europe				
Greece				
1932 (IH 31133).....	3,038.92	.....	1,265.47	
1933 (IH 32089).....	.....	7,500.00	5,113.39	
Poland				
1932-33 (IH 31073, 32192).....	3,100.00	.....	2,450.72	
The East				
Egypt				
1932 (IH 31074).....	4,974.30	.....	396.63	
1933 (IH 32090).....	.....	8,210.00	.....	
India				
Mysore				
1930-32 (IH 29061).....	3,766.95	.....	1,607.40	
Travancore				
1932 (IH 32054).....	925.00	.....	839.98	
India and Burma				
1933 (IH 32091).....	.....	580.00	95.82	
Other State Health Services				
United States				
Florida. Library service				
1931 (IH 31139).....	1,012.50	.....	1,012.50	385

## EXHIBIT E—Continued

	PRIOR DESIGNA- TIONS	1933 DESIGNA- TIONS	1933 PAYMENTS
<b>STATE AND LOCAL HEALTH SERVICES—Continued</b>			
Other State Health Services—Continued			
United States—Continued			
North Dakota. Division of Child Hygiene 1931 (IH 31033).....	\$2,138.34	\$.....	\$1,858.75
Foreign countries			
Europe			
England. British Colonial Office, London. Bureau of Hygiene and Tropical Diseases 1931-36 (IH 31016).....	3,395.00	.....	1,083.00
France. National Office of Social Hygiene, Paris 1931-33 (IH 30165).....	14,177.76	.....	7,861.79
Norway. State Institute of Public Health, Oslo 1929-34 (IH 29043).....	32,159.26	.....	1,906.95
Poland. Bureau of District Health Work, Warsaw 1932 (IH 31132).....	1,410.00	.....	1,333.66
1933-34 (IH 32095).....	.....	1,760.00	.....
South America			
Colombia 1933 (IH 32093).....	.....	12,000.00	8,962.65
Venezuela 1933 (IH 32094).....	520.00	2,520.00	2,018.18
The East			
India. Bureau of Health Education Mysore 1931-33 (IH 31056).....	1,698.90	.....	Cr. 1,119.52

Travancore			
1933 (IH 32096).....	\$.....	\$265.00	\$7.83
Netherlands East Indies. Division of Health Education, Java			
1932 (IH 31076).....	2,344.23	.....	1,245.20
West Indies			
Jamaica. Bureau of Health Education, Kingston			
1932 (IH 31075).....	724.99	.....	147.36
1933 (IH 32092).....	.....	2,090.00	1,743.58
Local (County) Health Departments			
United States			
Alabama			
1930-33 Epidemiological unit (IH 31137, 32184).....	20,191.66	.....	19,627.83
1932-34 (IH 32024, 33041).....	10,000.00	10,000.00	11,541.11
Arizona			
1931-32 (IH 30142, 31022).....	2,708.34	.....	1,250.00
1932-34 (IH 32025, 33041).....	6,250.00	7,500.00	8,061.89
Arkansas			
1932-34 (IH 31006, 32024, 33041).....	8,680.20	8,400.00	10,161.71
California			
1930-33 (IH 30143, 31048, 32176).....	3,300.00	.....	2,000.00
Florida			
1933-34 (IH 33041).....	.....	4,000.00	937.49
Georgia			
1931-34 (IH 30144, 32024, 32160, 33034).....	5,963.03	2,100.00	2,809.45
Idaho			
1932-33 (IH 31077, 32161).....	1,800.00	.....	900.00
Indiana			
1930 (IH 30023).....	4,600.00	.....	.....

## EXHIBIT E—Continued

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STATE AND LOCAL HEALTH SERVICES—Continued  
Local (County) Health Departments—Continued

## United States—Continued

	PRIOR DESIGNA- TIONS	1933 DESIGNA- TIONS	1933 PAYMENTS
Iowa 1929-35 (IH 31141, 32162, 33152).....	\$5,353.03	\$1,800.00	\$4,041.94
Kansas 1931-34 (IH 30056-57, 31142, 33035).....	3,779.87	600.00	450.00
Kentucky 1930-34 (IH 29261, 31006, 32024, 33041).....	11,635.84	10,250.00	13,742.36
Louisiana 1932-34 (IH 31006, 32024, 33041).....	11,030.63	10,000.00	11,030.60
Maryland 1930-34 (IH 30024, 30145, 33036).....	12,183.86	600.00	2,664.30
Michigan 1929-34 (IH 29046-49, 32177).....	27,958.30	.....	9,015.60
Mississippi 1931-34 (IH 30146, 31006, 32024, 32178-81, 33041).....	27,753.46	5,800.00	15,270.36
Missouri 1930-33 (IH 30025-26, 32024, 32163).....	14,625.00	.....	5,250.00
Montana 1931 (IH 31005).....	1,050.00	.....	900.00
1933-34 (IH 33037).....	.....	900.00	.....
North Carolina 1932-34 (IH 32024, 33041).....	7,557.77	10,000.00	9,639.00
Oklahoma 1931-33 (IH 30031, 31143).....	6,166.67	.....	.....
South Carolina 1930-34 (IH 30006, 32024, 33041).....	9,325.00	11,960.00	6,619.29

Tennessee				
1930-35 (IH 29099, 32024, 32164-65, 33041, 33154-55) . . . . .	\$13,726.59	\$10,312.50	\$14,104.88	
Texas				
1930-35 (IH 30152, 31144, 32006, 32182-83, 33168) . . . . .	22,402.63	657.12	6,881.68	
Virginia				
1930-34 (IH 29098, 32024, 32097, 32166, 33041, 33156) . . . . .	8,731.25	10,500.00	10,427.52	
West Virginia				
1930-34 (IH 30007, 31152, 32024, 32172-74, 33041, 33157) . . . . .	13,617.35	5,405.00	10,812.65	
Emergency aid				
1932-33 (IH 32024) . . . . .	25 00	.....	.....	
Historical Record of County Health Organizations in the United States				
Purchase of copies (IH 33170) . . . . .	.....	2,000.00	.....	
Mississippi Flood Area 1927-32				
Arkansas	1,295.19	.....	1,295.19	
Kentucky	2,797.47	.....	2,353.94	
Louisiana	4,133.12	.....	4,133.12	
Mississippi	338.13	.....	337.50	
Tennessee	62.50	.....	62.50	
Training station	5,290.80	.....	Cr. 175.00	
Unallocated balance				
(IH 23521, 31006, 31049) . . . . .	18,855.73	....	....	
Foreign countries				
Canada				
Alberta				
1931-34 (IH 31023-24, 33044-45) . . . . .	8,762.52	2,000 00	4,543.86	
British Columbia				
1930-34 (IH 30055, 31003, 31153, 32167, 33038, 33048, 33158)	6,010.07	4,040 00	3,909.65	
Manitoba				
1930-33 (IH 30027, 31004, 32044) . . . . .	11,136.25	....	4,168.21	
Quebec				
1930-34 (IH 29052, 31053, 32045) . . . . .	46,481.18	....	23,930.39	
Saskatchewan				
1931-35 (IH 30158) . . . . .	14,427.51	....	....	

## EXHIBIT E—Continued

	PRIOR DESIGNA- TIONS	1933 DESIGNA- TIONS	1933 PAYMENTS
<b>STATE AND LOCAL HEALTH SERVICES—Continued</b>			
<b>Local (County) Health Departments—Continued</b>			
Foreign countries—Continued			
Central America			
Costa Rica			
1933–34 (IH 33074).....	\$.....	\$1,600.00	\$.....
Guatemala			
1932–33 (IH 31108, 32010).....	2,000.00	.....	.....
Nicaragua			
1933–34 (IH 33076).....	.....	800.00	.....
Panama			
1932 (IH 31109).....	858.62	.....	735.08
1933 (IH 32103, 33006).....	.....	2,300.00	1,654.68
Europe			
Austria			
1929–33 (IH 29069, 31020, 31051, 32104).....	6,636.92	2,850.00	5,143.02
Bulgaria			
1933 (IH 32073).....	750.00	.....	615.25
Czechoslovakia			
1929–32 (IH 29239–40, 31045).....	10,233.99	.....	.....
France			
1929–32 (IH 30013–14, 30166).....	4,860.46	.....	3,730.06
Hungary			
1929–32 (IH 31087–90, 32105–109).....	23,115.00	22,940.00	20,818.80
Irish Free State			
1930–35 (IH 29245–46, 30050).....	29,166.86	.....	12,104.53

Italy				
1931 (IH 30082, 31170).....	\$11,010.28	\$.....	\$4,427.76	
Poland				
1929-34 (IH 29067, 29070, 32064).....	7,105.10	.....	4,093.64	
Rumania				
1931-35 (IH 30170).....	9,114.30	.....	4,829.76	
Spain				
1929-35 (IH 29251, 32065).....	29,291.38	.....	8,621.73	
Mexico				
1929-33 (IH 29030, 29165, 31078-82, 31158, 32168-71).....	22,444.71	.....	6,979.00	
South America				
Colombia				
1933-34 (IH 33058).....	.....	5,000.00	.....	
The East				
Fiji				
1932-35 (IH 31159).....	10,767.22	.....	5,477.80	
India				
Burma				
1929-34 (IH 29060, 32034).....	11,326.61	.....	3,296.37	
Travancore				
1931-32 (IH 30083, 31020, 32055, 32110).....	7,545.00	2,420.00	843.09	
United Provinces				
1933-35 (IH 31163).....	22,200.00	.....	2,632.43	
Java				
1933-37 (IH 32189).....	.....	26,445.00	2,402.78	
Philippine Islands				
1931-34 (IH 29062, 31057, 33060).....	7,797.32	250.00	2,665.18	
West Indies				
Jamaica				
1929-33 (IH 29233-34, 30160, 31083-86, 32048, 32098-101)...	4,174.20	1,520.00	2,134.00	
Puerto Rico				
1930-33 (IH 30162, 32072, 32102).....	17,194.52	11,245.00	14,025.99	391

## EXHIBIT E—Continued

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## PUBLIC HEALTH EDUCATION

## Schools of Hygiene and Public Health

## Europe

	PRIOR DESIGNA- TIONS	1933 DESIGNA- TIONS	1933 PAYMENTS
England. London School of Hygiene and Tropical Medicine Maintenance 1932-33 (IH 33004).....	\$.....	\$18,000.00	\$4,510.09
Hungary. State Hygienic Institute, Budapest School for Public Health Officers 1929-32 (IH 29093).....	719.07	.....	655.73
1931-33 (IH 30168, 31169, 32063).....	11,247.36	.....	5,654.83
Norway. School of Public Health, Oslo Maintenance 1930-35 (IH 30012).....	5,544.29	.....	2,150.45
Poland. State Institute and School of Hygiene, Warsaw Maintenance 1932 (IH 31136).....	13,150.00	.....	12,996.92
Maintenance 1933-34 (IH 33005).....	.....	14,560.00	.....
Yugoslavia. School of Public Health, Zagreb Maintenance 1932-33 (IH 32040).....	20,000.00	.....	12,343.55
Maintenance 1933-34 (IH 33050).....	.....	10,000.00	.....
South America			
Brazil. Institute of Hygiene, São Paulo Equipment and supplies (IH 22672).....	125.53	.....	.....
The East			
Japan. Institute of Public Health, Tokyo Field training area. 1933-35 (IH 32188).....	.....	90,165.00	.....
Schools of Nursing			
United States			
University of Washington, Seattle 1931-32 (IH 31065).....	221.06	.....	.....

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Vanderbilt University, Nashville, Tennessee 1933-34 (IH 32197).....	\$35,000.00	\$....	\$17,500.00	
Washington University, St. Louis, Missouri 1932-33 (IH 32008).....	6,000.00	....	6,000.00	
Other Schools				
The East				
Central Medical School for Native Medical Students Suva, Fiji 1929-31 (IH 29095).....	3,826.69	.....	621.58	
First Midwifery School, Peiping, China 1930-33 (IH 29237).....	13,736.97	.....	4,797.53	
Training of Health Workers				
United States, Canada, and Mexico				
1930-31 (IH 31038).....	513.83	..		
1932 (IH 31096).....	14,627.06	'	995.13	
1933 (IH 32115).....	.....	5,000.00	2,772.28	
Maryland				
1932-34 (IH 32042).....	1,750.00	.....	226.73	
Europe				
1932 (IH 31097).....	3,389.00	'	919.36	
1933 (IH 32116).....	.....	4,000.00	1,016.04	
Central America				
1933 (IH 32117).....	.....	1,000.00	377.00	
Guatemala				
1932 (IH 31098).....	1,000.00	.....	.....	
Puerto Rico				
1932 (IH 31099).....	985.09	'	984.62	
1933 (IH 32118).....	.....	5,000.00	2,622.75	
Travel of Government Health Officials				
State health officials in United States, Canada, and Mexico				
1932 (IH 31093).....	9,475.92	.....	2,046.37	393
1933 (IH 32112).....	.....	4,000.00	1,942.87	

## EXHIBIT E—Continued

	PRIOR DESIGNA- TIONS	1933 DESIGNA- TIONS	1933 PAYMENTS
<b>PUBLIC HEALTH EDUCATION—Continued</b>			
<b>Travel of Government Health Officials—Continued</b>			
European health officials in Europe			
1932 (IH 31094).....	\$3,764.82	\$.....	\$2,068.77
1933 (IH 32113).....	.....	2,000.00	254.35
Visiting health officials			
1932 (IH 31095).....	16,889.39	.....	4,338.18
1933 (IH 32114).....	.....	10,000.00	4,903.70
<b>Training Stations</b>			
United States			
Johns Hopkins University, Baltimore, Maryland			
Field training and study area			
1932-36 (IH 32038, 32195, 32196).....	75,001.25	25,000.00	17,126.22
Foreign Countries			
Africa. Nigeria			
1931-34 (IH 31019).....	56,617.73	.....	23,031.87
Europe			
Italy			
1932 (IH 31131).....	280.02	.....	220.70
1933 (IH 32119, 33052).....	.....	3,290.05	2,643.67
Hungary			
Aid to former fellows			
1933 (IH 30169, 32120).....	7,401.04	1,500.00	3,960.54
South America			
Colombia			
1932 (IH 32009).....	799.86	.....	676.63
1934 (IH 33059).....	.....	2,000.00	.....

The East				
India. Travancore				
1932 (IH 32058).....	\$130.00	\$.....	\$50.66	
Fellowships				
Grants to doctors for study of public health				
1929-30 (IH 28358, 29198, 30046, 30053).....	15,826.02	.....	2.62	
1931 (IH 30108).....	38,265.36	.....	11,961.01	
1932 (IH 30169, 31092, 32066, 32199).....	158,639.09	.....	139,216.04	
1933 (IH 32111).....	.....	250,000.00	96,483.78	
<i>The Journal of Industrial Hygiene</i>				
1933-35 (IH 32198).....	.....	6,000.00	3,000.00	
CONTROL AND INVESTIGATIONS OF SPECIFIC DISEASES				
Hookworm Disease				
Control				
South America				
Colombia				
1932 (IH 31100, 32009).....	2,822.20	.....	2,398.97	
Paraguay				
1929 (IH 28197).....	726.11	.....	.....	
Venezuela				
1932 (IH 31101, 32051).....	660.07	.....	417.97	
The East				
Egypt				
1933 (IH 32121).....	.....	5,175.00	3,489.68	
India. Travancore				
1932 (IH 32057).....	385.00	.....	102.04	
1933 (IH 32122).....	.....	805.00	126.85	
Investigations and Surveys				
United States				
Alabama				
1932 (IH 31020, 31102).....	7,447.56	.....	6,936.36	

## EXHIBIT E—Continued

	PRIOR DESIGNA- TIONS	1933 DESIGNA- TIONS	1933 PAYMENTS
<b>CONTROL AND INVESTIGATIONS OF SPECIFIC DISEASES—Continued</b>			
<b>Hookworm Disease—Continued</b>			
<b>Investigations and Surveys—Continued</b>			
United States—Continued			
Alabama—Continued			
1933 (IH 32123, 33054).....	\$.....	\$12,000.00	\$5,863.54
Johns Hopkins University, School of Hygiene and Public Health, Baltimore, Maryland			
1932-33 (IH 32007).....	2,216.94	.....	2,180.94
1933-34 (IH 33011).....	.....	3,400.00	936.05
Mississippi			
1932-33 (IH 32043).....	3,350.00	.....	3,176.17
Vanderbilt University, Nashville, Tennessee			
Research on carbon tetrachloride			
1931-32 (IH 31018).....	4,064.94	.....	1,691.72
1932-35 (IH 32039, 33174).....	25,603.18	3,500.00	12,687.38
Foreign countries			
Egypt			
1932 (IH 31103, 32033).....	2,898.38	.....	446.27
1933 (IH 32124).....	.....	5,445.00	3,300.14
Western Samoa, Hookworm and yaws campaign			
1932-34 (IH 31161, 33007).....	4,423.22	400.00	4,077.28
Malaria Control			
United States			
Florida			
1932-34 (IH 32068).....	3,000.00	.....	1,125.00

<b>Georgia</b>			
1932 (IH 31104).....	\$1,155.66	\$.....	\$735.54
1933-34 (IH 32125, 33165).....	.....	6,500.00	1,604.17
<b>Louisiana</b>			
1932 (IH 31134).....	600.00	.....	600.00
<b>Mississippi</b>			
1932 (IH 31105).....	3,750.00	.....	3,102.26
1933-34 (IH 32126, 33166).....	.....	9,460.00	1,902.77
<b>Foreign countries</b>			
<b>Central America</b>			
Costa Rica			
1932 (IH 31107).....	750.00	.....	750.00
1933-34 (IH 32129, 33073).....	.....	2,000.00	900.00
Guatemala			
1932 (IH 31108).....	960.80	.....	.....
Nicaragua			
1932 (IH 32012).....	513.70	.....	296.84
1933-34 (IH 33075).....	.....	1,500.00	.....
Panama			
1932 (IH 31109).....	329.58	.....	300.25
1933 (IH 32128, 33006).....	.....	1,800.00	1,294.84
<b>Europe</b>			
Albania			
1932 (IH 31110).....	4,274.30	.....	4,258.63
1933 (IH 32131).....	.....	10,300.00	7,849.95
Italy			
1932 (IH 31111).....	3,417.97	.....	2,970.97
1933 (IH 32132).....	.....	11,300.00	10,521.67
Spain			
1932 (IH 31112).....	4,722.60	.....	1,834.92
<b>South America</b>			
Brazil			
1929-30 (IH 28183, 29217).....	15,174.19	.....	.....

## EXHIBIT E—Continued

	PRIOR DESIGNA- TIONS	1933 DESIGNA- TIONS	1933 PAYMENTS	1933 G
<b>CONTROL AND INVESTIGATIONS OF SPECIFIC DISEASES—Continued</b>				
<b>Malaria—Continued</b>				
<b>Control—Continued</b>				
Foreign countries—Continued				
South America—Continued				
Colombia				
1933 (IH 32127).....	\$.....	\$3,975.00	\$2,582.34	
Venezuela				
1933 (IH 32130).....	.....	2,150.00	1,738.85	
The East				
India, Sawantwadi				
1931 (IH 31041).....	943.21	.....	.....	
1932 (IH 31162).....	1,327.05	.....	965.47	
1933 (IH 32133).....	.....	925.00	617.70	
West Indies				
Grenada				
1930-31 (IH 30065).....	176.64	.....	.....	
1932 (IH 31106).....	821.91	.....	415.07	
Puerto Rico				
1932-33 (IH 32013, 32050).....	9,133.92	.....	9,132.93	
Investigations and Surveys				
United States				
Florida				
1932 (IH 31113, 32185).....	4,921.66	.....	4,860.17	
1933 (IH 31020, 32134).....	200.00	12,000.00	6,979.47	
Rockefeller Institute, New York City				
1933 (III 33013, 33063).....	.....	3,300.00	2,867.65	
University of Chicago, Illinois				
1932 (IH 31114).....	410.18	.....	398.13	
1933 (IH 32075).....	3,000.00	.....	2,274.16	

THE ROCKEFELLER FOUNDATION

<b>Foreign countries</b>			
<b>Central America</b>			
<b>Panama</b>			
1932-33 (IH 32049).....	\$1,000.00	\$.....	\$749.35
<b>Europe</b>			
<b>Albania</b>			
1932 (IH 31117).....	230.36	.....	230.36
1933 (IH 32136, 33077).....	.....	4,259.14	4,001.39
<b>Bulgaria</b>			
1932 (IH 31118).....	7,378.00	.....	6,675.04
1933 (IH 32137).....	.....	25,500.00	19,014.30
<b>Greece</b>			
1932 (IH 31121).....	9,535.17	.....	6,169.66
1933 (IH 32138, 33002).....	.....	28,600.00	16,481.19
<b>Italy</b>			
Experiment station for malaria control			
1932 (IH 31111).....	6,490.50	.....	5,517.51
1933 (IH 32139).....	.....	26,960.00	25,024.52
Special studies in therapeutic malaria			
1932 (IH 31120).....	261.18	.....	194.54
1933 (IH 32140).....	.....	2,040.00	2,005.97
<b>Italy and Germany</b>			
1932 (IH 31119).....	749.38	.....	745.99
1933 (IH 32141).....	.....	3,000.00	2,333.26
<b>Netherlands. Amsterdam</b>			
1929-33 (IH 29091).....	9,428.55	.....	5,058.66
<b>Portugal</b>			
1933 (IH 32193).....	450.00	2,000.00	2,395.64
<b>Spain</b>			
1933 (IH 32142).....	.....	4,600.00	2,487.52

**EXHIBIT E—Continued**

	PRIOR DESIGNA- TIONS	1933 DESIGNA- TIONS	1933 PAYMENTS
<b>CONTROL AND INVESTIGATIONS OF SPECIFIC DISEASES—Continued</b>			
Malaria—Continued			
Investigations and Surveys—Continued			
South America			
Colombia			
1932 (IH 31130).....	\$3,119.54	\$.....	\$700.97
Venezuela			
1932 (IH 31116, 32052).....	1,605.93	.....	322.82
The East			
India. Travancore			
1932 (IH 32056).....	750.00	.....	452.80
1933 (IH 32144).....	.....	1,570.00	377.96
Philippine Islands			
1932 (IH 31123-24).....	3,797.38	.....	2,880.14
1933 (IH 32143).....	.....	7,000.00	3,722.77
West Indies			
Jamaica			
1932 (IH 31115).....	392.93	.....	66.88
1933 (IH 32135).....	.....	760.00	603.37
Puerto Rico			
1932-33 (IH 32030, 32187).....	7,024.02	2,000.00	7,972.34
1933-34 (IH 33047).....	.....	9,700.00	1,635.74
Yellow Fever			
Control			
Brazil			
1932 (IH 31125).....	215,694.73	.....	101,443.61
1933 (IH 32145).....	.....	350,000.00	240,152.17

<b>Investigations</b>				
Bolivia				
1932-33 (IH 32061).....	\$18,000.00	\$.....	\$9,470.87	
Brazil, Bahia				
1932 (IH 31125).....	19,011.51	.....	7,271.17	
1933 (IH 32145).....	.....	50,000.00	18,007.92	
Ecuador				
1933 (IH 33061).....	.....	1,000.00	100.65	
New York, Yellow Fever Laboratory of the International Health Division				
1932 (IH 31125, 32060).....	11,861.46	.....	6,579.76	
1933 (IH 32145).....	.....	65,000.00	51,922.42	
Paraguay				
1932 (IH 32062).....	9,000.00	.....	3,485.03	
1933 (IH 32145).....	.....	18,000.00	5,676.75	
Peru				
1933 (IH 33051).....	.....	500.00	.....	
West Africa				
1932 (IH 31125).....	25,465.49	.....	7,233.70	
1933 (IH 32145).....	.....	65,000.00	39,884.90	
Pasteur Institute, Paris, France				
1933-34 (IH 33062).....	.....	3,300.00	.....	
History of Yellow Fever				
1931 (IH 31047).....	100.00	.....	100.00	
<b>Tuberculosis</b>				
United States				
Alabama				
1933-34 (IH 33053).....	.....	22,303.75	.....	
New York Hospital-Cornell Medical College Association				
1933-34 (IH 33012).....	.....	3,550.00	728.53	
Cornell University Medical College, New York City				
1932-35 (IH 32037).....	30,000.00	.....	604.47	

## EXHIBIT E—Continued

	PRIOR DESIGNA- TIONS	1933 DESIGNA- TIONS	1933 PAYMENTS
<b>CONTROL AND INVESTIGATIONS OF SPECIFIC DISEASES—Continued</b>			
<b>Tuberculosis—Continued</b>			
United States—Continued			
Tennessee			
1931-33 (IH 31055).....	\$15,549.04	\$.....	\$14,607.25
1933-34 (IH 33039).....	.....	13,633.00	2,416.65
Foreign countries			
West Indies. Jamaica			
Studies in tuberculosis			
Roentgenological laboratory			
1932 (IH 31126).....	5,411.29	.....	1,074.01
1933 (IH 32147).....	.....	14,250.00	11,778.02
Tuberculosis study clinic			
1932 (IH 31127).....	3,370.58	.....	529.20
1933 (IH 32146).....	.....	9,310.00	6,643.85
Survey			
Trelawney unit (IH 31128).....	1,688.65	.....	155.32
Mobile unit, 1933 (IH 32148).....	.....	3,420.00	2,208.65
Europe			
Austria			
1933 (IH 32149).....	.....	3,485.00	.....
Yaws Study			
West Indies. Jamaica			
Survey			
1932 (IH 31164).....	2,634.72	.....	651.01
Central office and laboratory			
1933 (IH 32150).....	.....	6,560.00	4,256.53

Research clinic 1933 (IH 32151, 33049).....	\$.....	\$3,200.00	\$1,266.71
Field units 1933 (IH 32152) .....	.....	7,600.00	4,380.80
Undulant Fever			
France			
Investigations 1932-33 (IH 31168, 32190).....	24,814.28	3,000.00	21,182.47
Sanitation			
Ceylon 1932 (IH 32053).....	1,850.00	.....	1,361.18
Cook Islands. Soil sanitation 1931-35 (IH 31160).....	7,875.00	.....	3,668.41
India			
Burma. Field research on bored-hole latrines 1931 (IH 30135, 31040).....	3,685.26	.....	791.79
Mysore 1932-33 (IH 32014).....	1,080.00	.....	866.87
Philippine Islands 1931-32 (IH 31058).....	2,935.18	.....	980.90
Epidemiological Studies			
United States			
Alabama Study of typhus fever 1932-35 (IH 32067, 33169).....	8,985.00	1,943.86	2,864.40
Massachusetts Study of cancer 1932-35 (IH 31154).....	10,200.00	.....	3,896.81
Tennessee Research, development of methods, and training of personnel 1930-33 (IH 30021).....	2,946.19	.....	2,292.16
			403
		3,000.00	750.00

## EXHIBIT E--Continued

## CONTROL AND INVESTIGATIONS OF SPECIFIC DISEASES—Continued

## Epidemiological Studies—Continued

## United States—Continued

## Tennessee—Continued

Field study of *Endamoeba histolytica*

1930-32 (IH 30034)..... \$4,230.61

1933-34 (IH 33010)..... ..... 2,820.00

## Study of smallpox vaccine virus

1932-33 (IH 32071)..... 2,000.00

1933-34 (IH 33087)..... ..... 2,166.67

## Virginia

## Field study of dysentery

1932-33 (IH 31157)..... 10,390.68

## Study of scarlet fever

1932-34 (IH 31156)..... 12,538.86

## Foreign countries

## Europe

## Austria. Diphtheria research

1933 (IH 33001, 33064)..... ..... 2,200.00

## Mexico

## Anthelmintics; malaria and yellow fever studies

1931-32 (IH 31007)..... 896.43

1932-33 (IH 32026, 33046)..... 3,483.70

## West Indies

## Puerto Rico. Anemia investigations

1931-32 (IH 31050, 31165)..... 1,683.41

PRIOR DESIGNA- TIONS	1933 DESIGNA- TIONS	1933 PAYMENTS
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## FIELD SERVICE

1932 (IH 30167, 31129, 32153)

## Salaries and expenses of staff

Salaries.....	\$39,469.46	\$493,000.00	\$489,700.25
Commutation.....	21,259.48	49,300.00	46,831.94
Travel.....	52,606.54	147,700.00	136,402.16
Medical examinations.....	238.70	1,000.00	1,140.11
Field equipment and supplies.....	1,308.47	6,000.00	3,487.54
Pamphlets and charts.....	2,074.07	6,000.00	4,751.55
Express, freight, and exchange.....	676.43	1,000.00	251.98
Insurance, and retirement allowances.....	32,248.05	56,000.00	51,953.08
Bonding.....	1,215.00	3,000.00	1,908.78
Automobiles.....	700.00	1,000.00	.....
Greece. Services of malarialogists and sanitary engineer 1931-34 (IH 30167) .....	20,000.00	.....	.....
Director's fund for budget revision (IH 31020) .....	869.00	.....	.....
Exchange fund (IH 33052, 33077) .....	.....	63,620.81	.....
Authorization for which designation has as yet not been made.....	.....	15,000.00	.....
<b>Totals.....</b>	<b>\$2,243,992.67</b>	<b>\$2,528,553.90 *</b>	<b>\$2,464,858.16</b>

\* The Foundation appropriated during 1933 for the work of the International Health Division \$2,529,214, the undesignated balance of \$660.10 being allowed to lapse as of December 31, 1933.

**EXHIBIT F**  
**SUMMARY OF PRIOR OBLIGATIONS ACCOUNT**  
December 31, 1933

**PRIOR OBLIGATIONS ACCOUNT**

Unpaid appropriations, pledges, and authorizations, December 31, 1932

Appropriations.....	\$9,443,491.84
Pledges and authorizations.....	1,434,460.00
	<hr/>

**Less**

Payments made during the year 1933.....	\$2,904,046.19
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Unused balances of appropriations allowed to lapse.....	287,382.74
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Authorizations allowed to lapse .....	64,800.00
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3,256,228.93	<hr/>
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Balance on December 31, 1933, payable on appropriations, pledges, and authorizations made prior to January 3, 1929.....	<hr/>
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\$7,621,722.91	<hr/>
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**EXHIBIT G**  
**SUMMARY OF APPROPRIATIONS ACCOUNT**  
**December 31, 1933**

**CURRENT APPROPRIATIONS ACCOUNT**

Unpaid appropriations, pledges, and authorizations, December 31, 1932			
Appropriations.....	\$30,743,314.15		
Pledges and authorizations.....	11,176,950.02	\$41,920,264.17	
Appropriations, pledges, and authorizations made during the year 1933			
Appropriations.....	\$9,579,302.81		
Less appropriations previously included as pledges and authorizations	2,544,000.00	\$7,035,302.81	
Pledges and authorizations.....	2,825,000.00	9,860,302.81	
			\$51,780,566.98
Less			
Payments made during the year 1933.....	\$11,849,775.86		
Unused balances of appropriations allowed to lapse.....	1,092,709.64		
Pledges and authorizations allowed to lapse.....	6,299,500.00	19,241,985.50	
Balance on December 31, 1933, payable on appropriations, pledges, and authorizations made on or subsequent to January 3, 1929.....			\$32,538,581.48

**EXHIBIT H**  
**STATEMENT OF PRINCIPAL FUND**

Unappropriated Principal, December 31, 1932.....	\$147,522,644.31
Authorization rescinded.....	6,000,000.00
Authorizations allowed to lapse (prior obligations).....	64,800.00
Contingent projects cancelled.....	14,000.00
	\$153,601,444.31
Less amount by which the proceeds of securities redeemed and exchanged during the year failed to equal their ledger valuation.....	22,658.72
Balance, December 31, 1933.....	\$153,578,785.59

This fund is accounted for in securities.

**STATEMENT OF RESERVE FOR CONTINGENT PROJECTS**

Balance, December 31, 1932.....	\$1,514,000.00
Less amount cancelled in accordance with minutes of Executive Committee, May 12, 1933.....	14,000.00
Balance, December 31, 1933.....	\$1,500,000.00

This fund is accounted for in securities.

EXHIBIT I  
STATEMENT OF LAND, BUILDINGS, AND EQUIPMENT FUND

	TOTAL	EXPENDI-	TOTAL
	DEC. 31, 1932	TURES 1933	DEC. 31, 1933
New York Office			
Library.....	\$34,683.15	\$13,251.92	\$13,920.97
Equipment.....		\$669.05	
Less depreciation, 1933.....	<u>6,117.60</u>	<u>28,565.55</u>	<u>36,934.85</u>
Paris Office			
Part interest in building occupied by Paris office.....		65,981.18 Cr. 79.57	65,901.61
Land in Shanghai.....		<u>298,331.95</u>	<u>298,331.95</u>
	<u>\$406,130.60</u>	<u>\$8,958.78</u>	<u>\$415,089.38</u>

## EXHIBIT J

## SCHEDULE OF SECURITIES ON DECEMBER 31, 1933

## 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	\$100,000.00	97.75	\$97,750.00
American Water Works & Electric Co., Inc. Twenty-Year Collateral Trust Gold.....	5	Apr. 1934	532,000.00	101.97827	542,524.40
Armour & Co. (Illinois) Real Estate First Mortgage Gold.....	4½	June 1939	1,142,000.00	87.	993,540.00
Atchison, Topeka & Santa Fe Ry. One Hundred-Year Adjustment Mortgage Gold (Stamped).....	4	July 1995	420,000.00	75.	315,000.00
Atchison, Topeka & Santa Fe Ry. Twenty-Year Convertible Gold.....	4½	Dec. 1948	274,000.00	118.	323,320.00
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
Brooklyn Manhattan Transit Corporation Two-Year Secured Gold Notes.....	6	Aug. 1934	220,370.36	96.	211,555.57
Burlington, Cedar Rapids & Northern Ry. Consolidated First Gold.....	5	Apr. 1934	64,000.00	101.5625	65,000.00
Calgary Protestant Public School District No. 19, Province of Alberta.....	5	Serially June 2, 1934-48	132,500.00	85.	112,625.00

Canadian Pacific Ry. Ten-Year Collateral Gold.....	5	Apr. 15, 1934	\$146,000.00	100.932369	\$147,361.26
Carolina, Clinchfield & Ohio Ry. First Mortgage Thirty-Year Gold.....	5	June 1938	1,488,000.00	75.	1,116,000.00
The Central R. R. of New Jersey Equipment Trust Gold of 1926.....	4½	Aug. 1934	106,000.00	100.826415	106,876.00
Chesapeake & Ohio Ry. Equipment Gold of 1930.....	4½	May 1936	125,000.00	100.381032	125,476.29
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	102.389227	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. 1st each year 1934-40	931,000.00	98.25	914,707.50
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

## EXHIBIT J—Continued

NAME	INTEREST RATE PER CENT	DATE OF MATURITY	AMOUNT	FOUNDATION'S LEDGER VALUE PER CENT	FOUNDATION'S TOTAL LEDGER VALUE
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. First and Refunding Mortgage Gold.....	4	Apr. 1934	2,732,000.00	95.92119	2,620,566.93
Chicago, Rock Island & Pacific Ry. Equipment Gold of 1929 Series "P".....	4½	Aug. 1934	128,000.00	100.66364	128,849.46
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 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, 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

Colorado & Southern Ry. Refunding and Extension Mortgage Gold.....	4½	May 1935	\$480,000.00	92.377477	\$443,411.89
Consolidated Gas Electric Light & Power Co. (Baltimore) General Mortgage Gold.....	4½	Feb. 14, 1935	63,000.00	101.169635	63,736.87
Consolidation Coal Co. Secured Gold Notes (Stamped).....	5	Apr. 1934	500,000.00	100.	500,000.00
Corn Products Refining Co. First Mortgage Sinking Fund Twenty-five Year Gold.....	5	May 1934	34,000.00	103.1875	35,083.75
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.....	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
Erie R. R. General Mortgage Convertible Gold Series "B".....	4	Apr. 1953	1,065,000.00	74.717586	795,742.30
General Motors Acceptance Corp. Serial Gold Notes Series "H".....	5	Mar. 1934	473,000.00	100.538716	475,548.13
General Motors Acceptance Corp. Serial Gold Notes Series "I".....	5	Mar. 1935	163,000.00	100.455147	163,741.89
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. Fifteen-Year Secured Gold.....	6½	July 1936	89,000.00	108.8055	96,836.89

EXHIBIT J—*Continued*

NAME	INTEREST RATE PER CENT	DATE OF MATURITY	AMOUNT	FOUNDATION'S LEDGER VALUE PER CENT	FOUNDATION'S TOTAL LEDGER VALUE
Illinois Central R. R. Refunding Mortgage Gold.....	4	Nov. 1955	\$1,233,000.00	82.45985	\$1,016,730.00
Illinois Central R. R. Equipment Series "M"	4½	\$80,000 due May 1st each year 1934-41	640,000.00	98.5	630,400.00
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 (Stamped) Gold (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. 1934	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
Magnolia Petroleum Co. Serial Gold Debenture Series "I".....	4½	Feb. 15, 1934	35,000.00	100.3303428	35,115.62
Magnolia Petroleum Co. Serial Gold Debenture Series "J".....	4½	Feb. 15, 1935	5,000.00	100.25	5,012.50
Mexico, Republic of, Consolidated External Loan, Series "C" (Assenting bonds).....	5	June 1945	354,000.00 150,228.75	34. 6.	120,360.00 9,013.73
Class "A" Certificates for interest in arrears 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
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

## EXHIBIT J—Continued

NAME	INTEREST RATE PER CENT	DATE OF MATURITY	AMOUNT	FOUNDATION'S LEDGER VALUE PER CENT	FOUNDATION'S TOTAL LEDGER VALUE
New York Central & Hudson River R. R. Thirty-Year Debenture Gold.....	4	May 1934	\$1,043,000.00	96.37266	\$1,005,166.90
New York Central R. R. Twenty-Year Convertible Debenture Gold.....	6	May 1935	235,000.00	106.485377	250,240.64
New York Central R. R. Equipment Gold of 1930.....	4½	May 15, 1935	15,000.00	100.674666	15,101.20
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.-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 Connecting R. R. First Mortgage Gold Series "A".....	4½	Aug. 1953	500,000.00	95.69073	478,453.65
New York, Lake Erie & Western Docks & 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 15th each year 1934-41			
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.. Pittsburgh, Cincinnati, Chicago & St. Louis Ry. Consolidated Mortgage Gold Series "I".....	5	Jan. 1973	167,000.00	94.25234	157,401.42
Portland General Electric Co. First Mortgage Gold Sinking Fund.....	4½	Aug. 1963	500,000.00	103.	515,000.00
Public Service Corporation of New Jersey Perpetual Interest Bearing Certificates...	5	July 1935	124,000.00	101.92692	126,389.38
Raleigh & Gaston R. R. First Mortgage Gold Fifty-Year (Certificates of Deposit).....	6		550,000.00	84.	462,000.00
Reading Co. Equipment Trust Gold Series "M".....	5	Jan. 1947	250,000.00	95.	237,500.00
Reading Co. General and Refunding Mortgage Gold Series "A".....	4½	Nov. 1937	100,000.00	102.10579	102,105.79
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 15th each year 1933-43	550,000.00	92.51095	508,810.25
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

## EXHIBIT J—Continued

NAME	INTEREST RATE PER CENT	DATE OF MATURITY	AMOUNT	FOUNDATION'S LEDGER VALUE PER CENT	FOUNDATION'S TOTAL LEDGER VALUE
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. Central Pacific Stock Collateral Gold.....	4	Aug. 1949	100,000.00	76.	76,000.00
Southern Pacific Co. Equipment Gold Series "I".....	4½	\$100,000 due June 1st each year 1934-41	800,000.00	98.5	788,000.00
Southern Pacific Co. Equipment Gold Series "F".....	5	Dec. 1934	37,000.00	102.903702	38,074.37
Southern Pacific Co. Equipment Gold Series "E".....	7	June 1935	32,000.00	110.771375	35,446.84
Southern Pacific R. R. First Refunding Mortgage Gold.....	4	Jan. 1955	100,000.00	86.	86,000.00
Standard Oil Co. (New Jersey) Twenty-year Gold Debenture.....	5	Dec. 15, 1946	10,273,000.00	100.5	10,324,365.00
Standard Oil Co. of New York Serial Debenture Gold.....	4½	Feb. 15, 1934	15,000.00	100.43746	15,065.62
Standard Oil Co. of New York Serial Debenture Gold.....	4½	Feb. 15, 1935	10,000.00	100.3125	10,031.25
Standard Oil Co. of New York Serial Debenture Gold.....	4½	Feb. 15, 1936	20,000.00	100.50	20,100.00

Standard Oil Co. of New York Serial Debenture Gold.....	4½	Feb. 15, 1937	\$39,000.00	99.9823589	\$38,993.12
Tennessee Coal, Iron & R. R. Co. General Mortgage.....	5	July 1951	400,000.00	92.	368,000.00
Union Oil Co. of California Ten-year Sinking Fund Gold Series "C".....	5	Feb. 1935 \$100,000 due Oct. 1st each year 1934-36	296,500.00	100.30985	297,418.70
Union Tank Car Co. Equipment Gold.....	4½		300,000.00	98.54	295,620.00
United Electric Co. of New Jersey First Mortgage Gold.....	4	June 1949	500,000.00	72.	360,000.00
United States of America Fourth Liberty Loan Gold.....	4½	Called Apr. 15, 1934 Oct. 15, 1934-38	1,975,000.00 4,686,000.00	96.82635 96.82635	1,912,320.41 4,537,282.79
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 Rubber Co. First and 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	4,130,000.00	59.	2,436,700.00
Western Pacific R. R. First Mortgage Gold Series "A".....	5	Mar. 1946	200,800.00	83.	166,664.00
<b>TOTAL BONDS.....</b>	...	.....	.....	.....	<b>\$76,273,847.26</b>

## EXHIBIT J—Continued

## 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 \$50).....	49,693	79.277299	3,939,526.82
Central United National Bank of Cleveland (Par \$20) (and Central United Co.) (No par value).....	8,104	34.50422	279,622.22
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	11.	33,000.00
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.....	5,875	20.	117,500.00
Consolidation Coal Co. Common.....	23,500		0
Continental Oil Co. (Delaware) Capital (Par \$5).....	60,627	11.46601	695,149.77
Cumberland Pipe Line Co. Liquidation Receipt Certificate.....	6,000		0
Denver & Rio Grande Western R. R. 6% Cumulative Preferred.....	3,280	40.	131,200.00

Eureka Pipe Line Co. Capital.....	12,357	\$54.30	\$670,985.10
Illinois Central R. R. 6% Non-Cumulative Preferred "A".....	2,857	15.50	44,283.50
Illinois Central R. R. Common.....	4,070	9.625	39,173.75
Indiana Pipe Line Co. Capital (Par \$10).....	74,535	20.65221	1,539,312.93
International Harvester Co. 7% Cumulative Preferred.....	45,721	115.	5,257,915.00
Interstate Natural Gas Co. Inc. Capital (No par).....	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
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 \$12.50).....	126,481	21.50	2,719,341.50
New York Central R. R. Capital.....	52,635	19.125	1,006,644.38
New York Transit Co. Capital (Par \$5).....	24,784	11.72913	290,694.86
Northern Pipe Line Co. Capital (Par \$10).....	27,000	8.3333	225,000.00
The Ohio Oil Co. Common (No par value).....	94,684	35.375	3,349,446.50
The Ohio Oil Co. Non-Voting Cumulative 6% Preferred.....	15,000	103.5	1,552,500.00
Pere Marquette Ry. Cumulative Preferred 5%.....	5,740	49.6600627	285,048.76
Provident Loan Society of New York Certificates.....	266,000	100.	266,000.00
Seaboard Air Line Ry. Common (No par value).....	6,825	.50	3,412.50
Seaboard Air Line Ry. Common Stock Purchase Warrants (No par value)	455		
Southern Pipe Line Co. Capital (Par \$10).....	24,845	6.25	155,281.25
South West Pennsylvania Pipe Lines, Capital (Par \$50).....	8,000	62.	496,000.00
Standard Oil Co. (California) Capital (No par).....	60,967	17.25	1,051,680.75
Standard Oil Co. of Indiana, Capital (Par \$25).....	691,140	28.90	19,973,946.00
Standard Oil Co. (N. J.) Capital (Par \$25).....	1,077,005	34.826401	37,508,208.80
The Standard Oil Co. (Ohio) Cumulative 5% Preferred.....	15,000	101.	1,515,000.00
The Standard Oil Co. (Ohio) Common (Par \$25).....	135,648	25.50	3,459,024.00
Standard Oil Export Corporation (Delaware) Cumulative 5% Non-Voting Guaranteed Preferred.....	87,964	99.	8,708,436.00

## EXHIBIT J—Continued

NAME	NUMBER OF SHARES	FOUNDATION'S LEDGER VALUE PER SHARE	FOUNDATION'S TOTAL LEDGER VALUE
Tilden Iron Mining Co. Capital.....	890	\$27.350258	\$24,341.73
Underwood-Elliot 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
<b>TOTAL Stocks.....</b>	.....	.....	<b>\$110,941,992.81</b>
<b>SUMMARY</b>			
Bonds.....			\$76,273,847.26
Stocks.....			110,941,992.81
<b>TOTAL LEDGER VALUE OF INVESTMENTS.....</b>			<b>\$187,215,840.07</b>

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