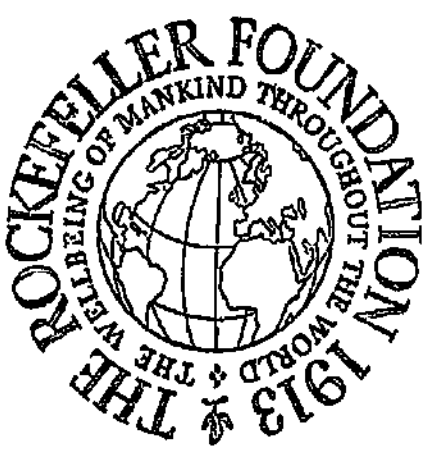
The Rockefeller Foundation Annual Report, 1955



49 West 49th Street, New York

PRINTED IN THE UNITED STATES OF AMERICA

THE ROCKEFELLER FOUNDATION

Trustees, Officers, and Staff

The Rockefeller Foundation

TRUSTEES, OFFICERS, AND COMMITTEES

April 1955–April 1956

TRUSTEES

CHESTER BOWLES
DETLEV W. BRONK
RALPH J. BUNCHE
WILLIAM H. CLAFLIN
JOHN S. DICKEY
LEWIS W. DOUGLAS
WALLACE K. HARRISON
JOHN R. KIMBERLY
ROBERT F. LOEB
ROBERT A. LOVETT
JOHN J. MCCLOY
HENRY ALLEN MOE
WILLIAM I. MYERS
THOMAS PARRAN
JOHN D. ROCKEFELLER, 3RD
DEAN RUSK
GEOFFREY S. SMITH[1]
ROBERT G. SPROUL
ARTHUR HAYS SULZBERGER
HENRY P. VAN DUSEN
W. BARRY WOOD, JR.

EXECUTIVE COMMITTEE

THE PRESIDENT, *Chairman*

CHESTER BOWLES
DETLEV W. BRONK
ROBERT A. LOVETT
HENRY ALLEN MOE
JOHN D. ROCKEFELLER, 3RD
W. BARRY WOOD, JR.
RALPH J. BUNCHE, *alternate member*
ROBERT F. LOEB, *alternate member*

FINANCE COMMITTEE

ROBERT A. LOVETT, *Chairman*

WILLIAM H. CLAFLIN
JOHN J. MCCLOY
LEWIS W. DOUGLAS, *alternate member*
GEOFFREY S. SMITH,[1] *alternate member*
THE PRESIDENT
THE CHAIRMAN OF THE BOARD OF TRUSTEES

[1] Resigned October 21, 1955.

OFFICERS

Chairman of the Board of Trustees	JOHN D. ROCKEFELLER, 3RD
President	DEAN RUSK
Vice-President	ALAN GREGG
Executive Vice-President	LINDSLEY F. KIMBALL
Vice-President for the Natural and Medical Sciences	WARREN WEAVER
Secretary	FLORA M. RHIND
Treasurer	EDWARD ROBINSON
Comptroller	H. MALCOLM GILLETTE
Director for Agriculture	J. GEORGE HARRAR
Director for Biological and Medical Research	ROBERT S. MORISON
Director for the Humanities	CHARLES B. FAHS
Director for Medical Education and Public Health	JOHN C. BUGHER
Director for the Social Sciences	NORMAN S. BUCHANAN[1]
Acting Director for the Social Sciences	LELAND C. DEVINNEY[2]

COUNSEL

CHAUNCEY BELKNAP

VANDERBILT WEBB

BOARD OF CONSULTANTS FOR AGRICULTURE

JOHN NORMAN EFFERSON

P. C. MANGELSDORF

WILL MARTIN MYERS

HERMAN ALONZO RODENHISER

ERNEST C. YOUNG

[1] Beginning July 1, 1955. [2] To June 30, 1955.

The Rockefeller Foundation

TRUSTEES, OFFICERS, AND COMMITTEES

April 1956–April 1957

TRUSTEES

CHESTER BOWLES
DETLEV W. BRONK
RALPH J. BUNCHE
WILLIAM H. CLAFLIN
JOHN S. DICKEY
LEWIS W. DOUGLAS
LEE A. DUBRIDGE
WALLACE K. HARRISON
JOHN R. KIMBERLY
ROBERT F. LOEB
ROBERT A. LOVETT
JOHN J. MCCLOY
HENRY ALLEN MOE
WILLIAM I. MYERS
THOMAS PARRAN
JOHN D. ROCKEFELLER, 3RD
DEAN RUSK
ROBERT G. SPROUL[1]
ARTHUR HAYS SULZBERGER
HENRY P. VAN DUSEN
W. BARRY WOOD, JR.

EXECUTIVE COMMITTEE

THE PRESIDENT, *Chairman*

CHESTER BOWLES
DETLEV W. BRONK
RALPH J. BUNCHE
ROBERT A. LOVETT
HENRY ALLEN MOE
JOHN D. ROCKEFELLER, 3RD
LEE A. DUBRIDGE, *alternate member*
ROBERT F. LOEB, *alternate member*

FINANCE COMMITTEE

ROBERT A. LOVETT, *Chairman*

WILLIAM H. CLAFLIN
JOHN J. MCCLOY
LEWIS W. DOUGLAS, *alternate member*
JOHN R. KIMBERLEY, *alternate member*

THE PRESIDENT
THE CHAIRMAN OF THE BOARD OF TRUSTEES

[1] Retired June 30, 1956.

OFFICERS

Chairman of the Board of Trustees	JOHN D. ROCKEFELLER, 3RD
President	DEAN RUSK
Vice-President	ALAN GREGG[1]
Executive Vice-President	LINDSLEY F. KIMBALL
Vice-President for the Natural and Medical Sciences	WARREN WEAVER
Secretary	FLORA M. RHIND
Treasurer	EDWARD ROBINSON
Comptroller	H. MALCOLM GILLETTE
Director for Agriculture	J. GEORGE HARRAR
Director for Biological and Medical Research	ROBERT S. MORISON
Director for the Humanities	CHARLES B. FAHS
Director for Medical Education and Public Health	JOHN C. BUGHER
Director for the Social Sciences	NORMAN S. BUCHANAN

COUNSEL

CHAUNCEY BELKNAP

VANDERBILT WEBB[2]

BOARD OF CONSULTANTS FOR AGRICULTURE

JOHN NORMAN EFFERSON

P. C. MANGELSDORF

WILL MARTIN MYERS

HERMAN ALONZO RODENHISER

ERNEST C. YOUNG

[1] Retired June 30, 1956. [2] Deceased June 17, 1956.

The Rockefeller Foundation

OFFICERS AND STAFF

1955

JOHN D. ROCKEFELLER, 3RD	*Chairman of the Board of Trustees*
DEAN RUSK	*President*
ALAN GREGG	*Vice-President*
LINDSLEY F. KIMBALL	*Executive Vice-President*
WARREN WEAVER	*Vice-President for the Natural and Medical Sciences*
FLORA M. RHIND	*Secretary*
JANET M. PAINE	*Assistant Secretary*
EDWARD ROBINSON	*Treasurer*
ROBERT LETORT	*Assistant Treasurer*
H. MALCOLM GILLETTE	*Comptroller*
GEORGE E. VAN DYKE	*Assistant Comptroller*

MEDICAL EDUCATION AND PUBLIC HEALTH

JOHN C. BUGHER, M.D.	*Director*
JOHN B. GRANT, M.D.	*Associate Director*
WADE W. OLIVER, M.D.	*Associate Director*
ROBERT B. WATSON, M.D.	*Associate Director*
JOHN M. WEIR, M.D., PH.D.	*Associate Director*
MARSHALL C. BALFOUR, M.D.	*Assistant Director*
ROLLA B. HILL, M.D.	*Assistant Director*
MARY ELIZABETH TENNANT,[1] R.N.	*Assistant Director*

Staff

RICHMOND K. ANDERSON, M.D., PH.D.
GUY S. HAYES, M.D.
ESTHER M. HIRST, R.N.
JOHN H. JANNEY, M.D.

1 Retired June 30, 1955.

LILLIAN A. JOHNSON,[1] R.N.
FRED W. KNIPE
ESTUS H. MAGOON
OLIVER R. MC COY, M.D.
OSLER L. PETERSON, M.D.
PAUL F. RUSSELL, M.D.

BIOLOGICAL AND MEDICAL RESEARCH

ROBERT S. MORISON, M.D. *Director*
HARRY M. MILLER, JR., PH.D. *Associate Director*
GERARD R. POMERAT, PH.D. *Associate Director*
JOHN MAIER, M.D. *Assistant Director*

Staff

New York Virus Laboratories

MAX THEILER, M.R.C.S., L.R.C.P., *Director*
JORDI CASALS-ARIET, M.D.
DELPHINE H. CLARKE, M.D.
LEO A. THOMAS,[1] PH.D.
LORING WHITMAN, M.D.

Belém, Brazil

OTTIS R. CAUSEY, D.SC.

Berkeley, California

HARALD N. JOHNSON, M.D.

Poona, India

J. AUSTIN KERR, M.D.
JOSEPH L. MELNICK,[1] PH.D.
TELFORD H. WORK, M.D.

Johannesburg, Union of South Africa

ROBERT H. KOKERNOT, M.D.
KENNETH C. SMITHBURN, M.D.

1 Temporary staff member.

Port of Spain, Trinidad

THOMAS H. G. AITKEN, PH.D.
CHARLES R. ANDERSON, M.D.
WILBUR G. DOWNS, M.D.

AGRICULTURE

J. GEORGE HARRAR, PH.D.	*Director*
ROBERT P. BURDEN, D.SC.	*Assistant Director*
ROBERT F. CHANDLER, JR., PH.D.	*Assistant Director*
JOHN J. MC KELVEY, JR., PH.D.	*Assistant Director*
KENNETH WERNIMONT, M.A., LL.B.	*Assistant Director*
RICHARD BRADFIELD, PH.D.	*Regional Director in the Far East*
E. C. STAKMAN, PH.D.	*Special Consultant*

Staff

Mexican Agricultural Program

EDWIN J. WELLHAUSEN, PH.D.	*Director*
DOUGLAS BARNES, PH.D.	*Entomologist*
NORMAN E. BORLAUG, PH.D.	*Plant Pathologist*
RODERIC E. BULLER, PH.D.	*Assistant Animal Husbandman*
LOWELL S. GLEASON, PH.D.	*Assistant Plant Physiologist*
REGGIE J. LAIRD, PH.D.	*Associate Soil Scientist*
NEIL B. MACLELLAN	*Staff Photographer*
DELBERT T. MYREN, PH.D.	*Assistant Extension Editor*
JOHN S. NIEDERHAUSER, PH.D.	*Plant Pathologist*
ROBERT D. OSLER, PH.D.	*Associate Geneticist*
DOROTHY PARKER, PH.D.	*Bibliographer and Librarian*
JESSE P. PERRY, JR., M.F.	*Associate, Experiment Station Operations*
JOHN A. PINO, PH.D.	*Animal Scientist*
KENNETH O. RACHIE, PH.D.	*Assistant Plant Geneticist*
RALPH W. RICHARDSON, JR., PH.D.	*Associate Geneticist*
DONALD L. SMITH, PH.D.	*Associate Geneticist*
WILLIAM D. YERKES, JR., PH.D.	*Assistant Plant Pathologist*
WILLIAM R. YOUNG, PH.D.	*Assistant Entomologist*

Colombian Agricultural Program

LEWIS M. ROBERTS, PH.D.	*Director*
GUY B. BAIRD, PH.D.	*Associate Soil Scientist*
LOY V. CROWDER, PH.D.	*Associate Agronomist*
JAMES M. FRANSEN, PH.D.	*Associate Animal Husbandman*
JOHN W. GIBLER, PH.D.	*Associate Plant Pathologist*
ULYSSES J. GRANT, PH.D.	*Associate Geneticist*
ROLAND E. HARWOOD	*Assistant, Experiment Station Operations*
LEE E. HEIDRICK, M.S.	*Assistant Horticulturist*
ROBERT F. RUPPEL, PH.D.	*Associate Entomologist*
ROBERT L. SKILES, PH.D.	*Assistant Plant Pathologist*
JAMES T. SOULES, M.S.	*Specialist in Farm Management*
H. DAVID THURSTON, M.S.	*Assistant Geneticist, in Training*

Chilean Agricultural Program

JOSEPH A. RUPERT, PH.D.	*Director*
JAMES E. HALPIN,[1] PH.D.	*Assistant Agronomist*

THE SOCIAL SCIENCES

NORMAN S. BUCHANAN,[2] PH.D.	*Director*
LELAND C. DEVINNEY,[3] PH.D.	*Associate Director*
ROGER F. EVANS	*Assistant Director*
KENNETH W. THOMPSON,[4] PH.D.	*Assistant Director*
JOHN B. STEWART,[5] PH.D.	*Consultant*

THE HUMANITIES

CHARLES B. FAHS, PH.D.	*Director*
EDWARD F. D'ARMS, PH.D.	*Associate Director*
JOHN MARSHALL	*Associate Director*
CHADBOURNE GILPATRIC	*Assistant Director*
ROBERT W. JULY, PH.D.	*Assistant Director*

1 Temporarily assigned to the Colombian Agricultural Program.
2 Beginning July 1, 1955.
3 Acting Director to June 30, 1955.
4 Beginning April 6, 1955.
5 To August 31, 1955.

CONTENTS

Biological and Medical Research

The Social Sciences

The Humanities

Other Appropriations

To the
Trustees of The Rockefeller Foundation

Gentlemen:

I have the honor to transmit herewith a general review of the work of The Rockefeller Foundation for the year 1955, together with detailed reports of the Treasurer of the Foundation and of the Directors for Medical Education and Public Health, Biological and Medical Research, Agriculture, the Social Sciences, and the Humanities for the period January 1, 1955 to December 31, 1955.

Respectfully yours,
Dean Rusk
President

THE
ROCKEFELLER FOUNDATION
Annual Report for 1955

INTRODUCTION

THE Rockefeller Foundation, the third of the large philanthropies endowed by Mr. John D. Rockefeller, was created in 1913 by a special act of the legislature of the State of New York as a corporate body "to promote the well-being of mankind throughout the world." The action of its founder in setting aside substantial private resources for public purposes, together with the act of the legislature, clothed The Rockefeller Foundation with a public trust and empowered its Trustees to use its funds, both income and capital, within the permissive terms of a liberal charter.

The instruction in the charter to "promote the well-being of mankind" confers upon the Trustees a wide freedom of action. Mr. Rockefeller had apparently concluded, prior to the turn of the century, that the scale of his philanthropy had grown beyond the range of personal giving and had decided to enlist the help of boards of trustees composed of men of wide and varying experience. A charter which would tie the hands of those upon whose discernment and judgment he wished to rely would have frustrated his decision. Mr. Rockefeller's own experience had undoubtedly impressed him with the fact that conditions change, and had confirmed his view that future decisions should not be unduly restricted by the past nor by man's inability to see very far into the fog of the future.

If discretion is wide, boundaries and guide posts do exist. A foundation, like any other individual or corporate citizen, expects to obey all relevant laws and to act within the general framework of public policy, both at home and in the foreign countries where it is active. A foundation's business is philanthropy; it devotes itself to scientific, educational, religious or other charitable purposes, rather than to profit making for private gain. If it wishes to qualify for exemption from federal income taxes, no substantial part of its activities may consist of propaganda, or other efforts, to influence legislation, although it retains the right of petition about legislation which directly affects itself. It must refrain from participation in partisan political campaigns. If such guides as these are negative, they are nevertheless important and give clear answers to certain types of proposals which reach the Foundation each year.

More positive guides are implicit in the sense of stewardship which governs the use of funds committed to public purposes through a charitable corporation. Taken for granted is the prudent care of such funds; more compelling is the wish of Trustees to use them as effectively as possible for the purposes for which they were intended. The wider the possible choices under a charter, the more exacting is the task of deciding what to do. Many possibilities are "good" but, since limited funds can not provide for them all, which are "best"? Each grant or expenditure competes, in a sense, with the alternative uses which are rejected. Officers and Trustees must somehow come to terms with the haunting and elusive question as to whether such funds might better be used in some other way.

The concern to make the "best" use of charitable funds generates an endless stream of questions. Where are the large returns to mankind from the modest investments of an endowed philanthropy? What will prove of enduring rather than of transitory value, of fundamental rather than superficial importance? Which types of expenditures are

likely to benefit more rather than less of mankind in the long run? Where are the roadblocks, perhaps of ignorance, which seem to bar general progress, or where the neglected but crucial tasks? These and similar questions help to explain the now familiar phrases which have become standard in the foundation field: "the extension of knowledge," "root causes," "germinal ideas," "pioneering," "the training of leadership," "building on strength," and Mr. Rockefeller's "passion for excellence." Such familiar phrases reflect the sifting process by which are discovered the ideas, the techniques, the men and the institutions which seem to offer the most promising opportunities for foundation assistance. They also explain the emphasis which is placed upon individual capacity and the encouragement of men with creative ideas. Fortunately, there are many foundations, and their judgments differ.

The promotion of well-being necessarily involves notions, expressed or implied, about the anatomy of well-being. Where does one find the philosophical roots of the work of The Rockefeller Foundation over the past forty-three years? In Jeremy Bentham's felicific calculus, in an Idea of Progress, in some systematic political or social theory, in one or another religious approach? The men who have been responsible for the Foundation have been, of course, strongly influenced by the society and times in which they have lived and by the prevailing ideas of nineteenth and twentieth century America. Optimism was written into the Foundation's charter, as it was into the Preamble of the American Constitution. One finds the broad humanitarianism, much of it of religious inspiration, which seeks to remove such scars upon human dignity as sickness and extreme poverty. There is respect for knowledge, faith in education, reliance upon individual capacity and individual responsibility. But the Foundation also reflects the proposition that men with different notions about ultimate issues can agree upon a wide range of practical action. Attempts

to articulate a philosophy of pragmatism out of the American experience have sometimes discounted the role of strongly held beliefs about the meaning of life and the nature of reality. A more sensitive interpretation might point, on the one hand, to the consensus about daily life which can be reached by men who are deeply committed to a variety of beliefs and, on the other hand, to the agreed rules of the democratic process which are designed to permit men to pursue theoretically diverse aims in reasonable harmony.

If the Foundation is American in background, its national commitments have been enlarged by its charter instruction to consider "mankind throughout the world." In the more than 90 countries and territories in which the officers and staff have worked at one time or another, they have encountered most of the great religious and philosophical traditions which have something to say about the nature of human well being. As have many others, they have been able to identify a number of great preferences so deeply and widely held as to approximate a consensus among mankind. Men, by and large, seem to prefer knowledge to ignorance, health to sickness, a reasonable livelihood to poverty, order to anarchy, reasonable and predictable laws to tyranny, beauty to drabness, significance to dreary routine, atoms for peace to hydrogen war. Admittedly, even such a partial list is full of complication. Elementary aspirations can get into each other's way, especially where the means for pursuing them are in short supply. Some powerful preferences divide rather than unite, such as our preference of ourselves over others. And relative success at a particular point, say, in material prosperity, brings new and subtle problems of its own.

That there is a broad and growing consensus about ends is illustrated by the manifold activities of the United Nations and its Specialized Agencies. The several charters of this international system record purposes to which the

Members have given formal adherence. More tangible and persuasive are the thousands of specific tasks to which men of different nationalities and cultural traditions have given their time, thought and material resources. From what men do in such cooperative action can be inferred substantial agreement about the ends they share.

The thoughtful examination of ends, a vigorous search for new and more effective means, and a sober and responsible discussion of differences offer tempting and rewarding opportunities to a foundation. To say that The Rockefeller Foundation has worked toward aims which are widely shared throughout the world does not mean that it turns only to those which can be expressed as a least common denominator, nor only to those safely anchored in the status quo. The promotion of well-being calls for change in the direction of preferred ends. If controversy occasionally arises, as it does, some of it is the inevitable accompaniment of most worthwhile efforts; some, be it said, arises because all undertakings do not come up to the hopes which launched them; some is a sign that a problem which needs attention is getting it.

The later sections of this Annual Report describe the grants made in 1955 and the work of the Foundation's own staff in agriculture and in virus research. It is commonly supposed, not without reason, that the primary asset of an endowed foundation is money. Equally important is its freedom—the freedom to use money in ways which multiply its value by creating other assets which reinforce financial support. Flexibility to concentrate resources at points of unusual need or opportunity and the capacity to persist in a particular effort for long periods of time are useful attributes of endowed philanthropy. The Report will show how each of these is utilized in the course of a given year.

Summary of Appropriations in 1955

The Rockefeller Foundation appropriated $19,152,-353 during 1955.

The distribution of the total among major categories shows:

Agriculture	$ 3,411,950
Biological and Medical Research	2,601,860
Humanities	3,550,330
Medical Education and Public Health	3,597,470
Social Sciences	3,332,155
General (Unclassified)	435,000
Administration and Services	2,223,588
	$19,152,353

The above categories reflect the primary program responsibilities of the five Directors of the Foundation. In fact, an increasing number of grants are recommended jointly by two or more Directors and combine more than one field of interest or academic discipline; classification becomes, therefore, somewhat arbitrary.

The amount shown for Administration covers considerably more than what is commonly understood as overhead. Included, for example, are the costs of personnel on loan to governments, international organizations and institutions of higher learning as well as a wide range of services provided for fellows and to other recipients of Foundation grants.

The appropriations for 1955 included $931,080 for 176 fellowship awards in 44 foreign countries.

The uncommitted capital funds of The Rockefeller Foundation at market value on December 31, 1955 amounted to $547,450,313.31. As of the same date, the outstanding commitments of the Foundation totalled $31,145,744.79.

Appropriations in 1955 bring the total of all appropriations since 1913 to $535,511,315.37.

Information on The Rockefeller Foundation

The use of the funds and other assets of The Rockefeller Foundation turns upon the judgment of its Trustees, advised and assisted by its officers. Because the public is the intended beneficiary, a full account of its grants and activities is published each year for public scrutiny. In the long run the public itself, especially the informed portions of it, will decide whether the trust is being administered in the public interest, and will give or withhold confidence accordingly. The policy of full publication has, in addition, important practical advantages for the Foundation itself; those working in fields of special interest to the Foundation are encouraged to make applications which it is glad to receive; those whose proposals lie clearly outside such fields may learn in advance what the Foundation's answer will probably be.

Information about the activities of The Rockefeller Foundation may be found in the following:

The Annual Report, which describes in some detail the grants made during the year, the work of the Foundation's own scientific and technical staff, the status of all outstanding appropriations, and the management and status of the Foundation's investments.

The President's Review, issued separately from time to time and included in the appropriate Annual Report; this attempts to provide a brief but general review and calls attention to fields of special interest in the Foundation's program; the next Review will appear in the first quarter of 1957 and will cover the years 1955-1956.

The Quarterly Report, which gives a brief and prompt summary of grants made during the preceding three months.

The Treasurer's Report, which appears as a part of the Annual Report, is separately printed for those specially interested in the Foundation's investment portfolio.

Technical papers appearing in scientific journals, arising from the investigations of the Foundation's scientific staff in such fields as agriculture, virus research, and public health.

The Fellowship Directory, first published in 1951; a five-year supplement is being issued in 1956.

The reply of The Rockefeller Foundation (and of the General Education Board) to the inquiries of the Special Committee to Investigate Tax Exempt Foundations of the House of Representatives of the 83rd Congress; this, together with supplementary statements on special issues, was published and distributed widely.

Special volumes written by present or former officers and staff of the Foundation, such as *The Story of The Rockefeller Foundation* by Raymond B. Fosdick, *Man's Mastery of Malaria* by Dr. Paul F. Russell, *Yellow Fever,* edited by Dr. George F. Strode, and *The Sardinian Project* by Dr. John F. Logan. A complete bibliography will be furnished upon request.

Publications arising out of research and scholarship in colleges, universities and independent research institutions, to which the Foundation has provided assistance. While such books and articles are not a direct responsibility of the Foundation, they are of value to those who might wish to understand more fully the Foundation's interests in particular fields.

Supplement to the Fellowship Directory

In 1951 The Rockefeller Foundation published a Directory of Fellowship Awards which covered the years 1917-1950. A forthcoming Supplement, now in production, will bring this information up to date by adding the 899 fellowships awarded during the five years 1951-1955.

Despite changes in the scope and emphasis of program over the years, the Foundation has always been preoccupied with the encouragement of talent and the development of leadership. Whether in the endless search for more knowledge or in the application of what is already known to practical problems, advances depend upon individuals of unusual capacity. If this has been true in the past, it is even more true today. The old maxim of a free society, "There is plenty of room at the top," takes on new meaning; whatever the field of human endeavor, great tasks are waiting for the men who can do them.

The Foundation's fellowship program is only a part of its total investment in people. Travel grants, grants-in-aid, scholarships, funds for training awards by other institutions and a high proportion of its larger grants are aimed at individual development. Though the differences among the various kinds of assistance are more technical than real, it is Foundation practice to designate as fellowships, awards for advanced training to men and women who have their doctorates or professional degrees and who are well launched on professional careers, and as scholarships the awards to people who have not taken their degrees but are seriously working toward them.

The Foundation has awarded 7,324 fellowships, ranging in annual numbers from 97 in 1943 to 221 in 1951. These have been held by 6,956 individuals from 98 countries and territories, some of whom held more than one appointment. During its early years, the Foundation concentrated its fellowships largely in medical education, the medical sciences, public health, and nursing; the later expansion of program into other fields provided increasing numbers of awards for the natural sciences, agriculture, the social sciences and the humanities.

Geographically, the great majority of fellowships awarded directly by the Foundation have gone to foreign countries, although the United States has received more than any other single country. Substantial funds have gone to support training awards by other American institutions, such as the Social Science Research Council, the American Council of Learned Societies, the National Research Council. Table I shows the distribution by areas and fields of interest of the awards made directly by The Rockefeller Foundation during the past five years and in the 1917-1950 period.

TABLE I. FELLOWSHIPS, BY GEOGRAPHIC AREA AND FIELD OF INTEREST.

Geographic Area	Medicine and Public Health	Natural Sciences	Social Sciences	Humanities	Agriculture	Totals
1917-1950						
Africa & Near East	104	5	11	2		122
Europe	1,475	799	714	52	49	3,089
Asia & Pacific	606	77	108	40	9	840
North America & Caribbean	1,240	187	69	344	12	1,852
South America	413	48	2	34	34	531
TOTALS	3,838	1,116	904	472	104	6,434
1951-1955						
Africa & Near East	22	4	1	19		46
Europe	135	103	72	36	7	353
Asia & Pacific	106	26	45	31	6	214
North America & Caribbean	33	18	3	27	14	95
South America	60	49	4	1	77	191
TOTALS	356	200	125	114	104	899
GRAND TOTALS	4,194	1,316	1,029	586	208	7,333

Organizational Information

MEETINGS

During 1955 regular meetings of the full Board of Trustees were held on April 6 and on December 6 and 7. Six meetings of the Executive Committee of the Trustees were held to take actions within the general policies approved by the Board.

BOARD OF TRUSTEES

The Board of Trustees of The Rockefeller Foundation elected one new member at their meeting on April 6, 1955. Dr. Ralph J. Bunche, Under Secretary General of the United Nations, was elected to succeed Dr. Harold W. Dodds, President of Princeton University, who retired from the Board on June 30, 1954. Mr. Geoffrey S. Smith, also a member of the Board of Trustees, resigned on October 21, 1955.

On April 4, 1956 the Board of Trustees elected Dr. Lee A. DuBridge to membership. Dr. DuBridge is President of the California Institute of Technology.

PRINCIPAL OFFICERS

At their meeting on April 6, 1955, the Board of Trustees approved certain organizational changes. Among the principal officers, the President (Dean Rusk), the Secretary (Miss Flora M. Rhind), the Treasurer (Edward Robinson), and the Comptroller (H. Malcolm Gillette) continue with the duties implied by their titles substantially unchanged.

Dr. Alan Gregg, Vice-President since 1951, continues on special assignments both within the Foundation and in public service until his retirement on June 30, 1956.

Dr. Lindsley F. Kimball, Vice-President since 1949, was named Executive Vice-President and made responsible for the administration of the Foundation's activities.

Dr. Warren Weaver, former Director of the Division of Natural Sciences and Agriculture, was elected Vice-President for the Natural and Medical Sciences.

Because of the growing interrelationships among the Foundation's many activities, the former Divisions were eliminated as formal units and specific program responsibilities were assigned to five Directors: Dr. John C. Bugher, Director for Medical Education and Public Health; Dr. Robert S. Morison, Director for Biological and Medical Research; Dr. J. George Harrar, Director for Agriculture; Dr. Norman S. Buchanan, Director for the Social Sciences; and Dr. Charles B. Fahs, Director for the Humanities.

At the same meeting several new appointments of officers were made for the various programs. All of these persons had previously been members of the Foundation's staff or associated with it as consultants. The new appointments were: Dr. John M. Weir, Associate Director for Medical Education and Public Health; Dr. Robert B. Watson, Associate Director for Medical Education and Public Health; Dr. John Maier, Assistant Director for Biological and Medical Research; Dr. Richard Bradfield, Regional Director for Agriculture in the Far East; Dr. Robert P. Burden, Assistant Director for Agriculture; Kenneth Wernimont, Assistant Director for Agriculture; Dr. Kenneth W. Thompson, Assistant Director for the Social Sciences.

Dr. Andrew J. Warren, former Director of the Division of Medicine and Public Health, retired on March 31, 1955. Dr. Warren's contributions to the fight against yellow fever and to the development of improved public health services in many countries were outstanding.

On June 30, 1955, Miss Mary Elizabeth Tennant retired as Assistant Director of the program in Medical Education and Public Health. Miss Tennant had been a

valued member of the staff of the former International Health Division since 1931 and had directed the Foundation's work in nursing education since October 1, 1938.

OTHER OFFICERS AND STAFF

Dr. Robert H. Kokernot, who in 1954 was a temporary staff member of the Division of Medicine and Public Health, was appointed, on October 1, 1955, a regular staff member of the Biological and Medical Research Program. Dr. Leo A. Thomas was named a temporary staff member of that program for one year beginning October, 1955, and Dr. Joseph L. Melnick, of the Department of Microbiology at Yale University, was appointed a temporary staff member to assist in the work of the Virus Research Centre in Poona, India.

In October, 1955, Dr. Robert W. July, formerly an Assistant Director of the General Education Board, was named Assistant Director for the Humanities.

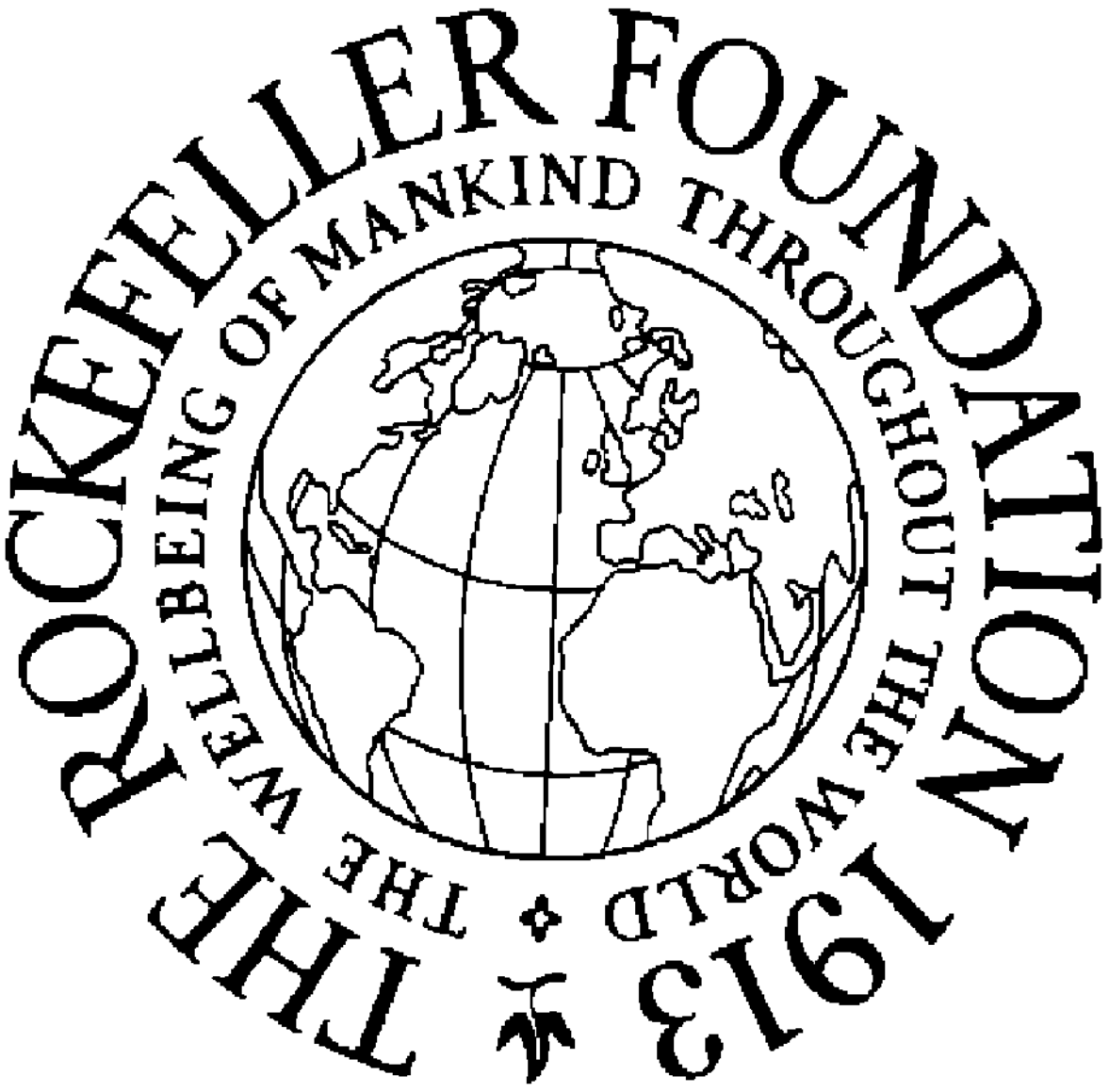
Several new staff members joined the program in Agriculture in 1955. To the Foundation's Mexican Agricultural Program were added Dr. Delbert T. Myren as Assistant Extension Editor, Dr. William R. Young as Assistant Entomologist, Dr. Kenneth O. Rachie as Assistant Plant Geneticist, and Dr. John A. Pino as Associate Animal Scientist. Dr. Loy V. Crowder and Dr. James M. Fransen were assigned to the Colombian Agricultural Program as Associate Agronomist and Associate Animal Husbandman, respectively. Dr. James E. Halpin joined the Agricultural Program as Assistant Agronomist with initial assignment to Colombia.

Illustrations

Photograph Excised Here

DR. ALAN GREGG

Vice-President of The Rockefeller Foundation, retired.



Photograph Excised Here

Louisiana State University's experimental farm at Crowley is one of the leading rice stations in the world. Its program includes many phases of rice research, only one of which, drying and storage, is illustrated here. At the left, air velocities in the duct of a bin-type rice drier are being measured with a pitot tube and a micromanometer. Below, two ICA trainees, from Brazil and Thailand respectively, make moisture determinations on rough rice with the Steinlite Electric Moisture Tester.

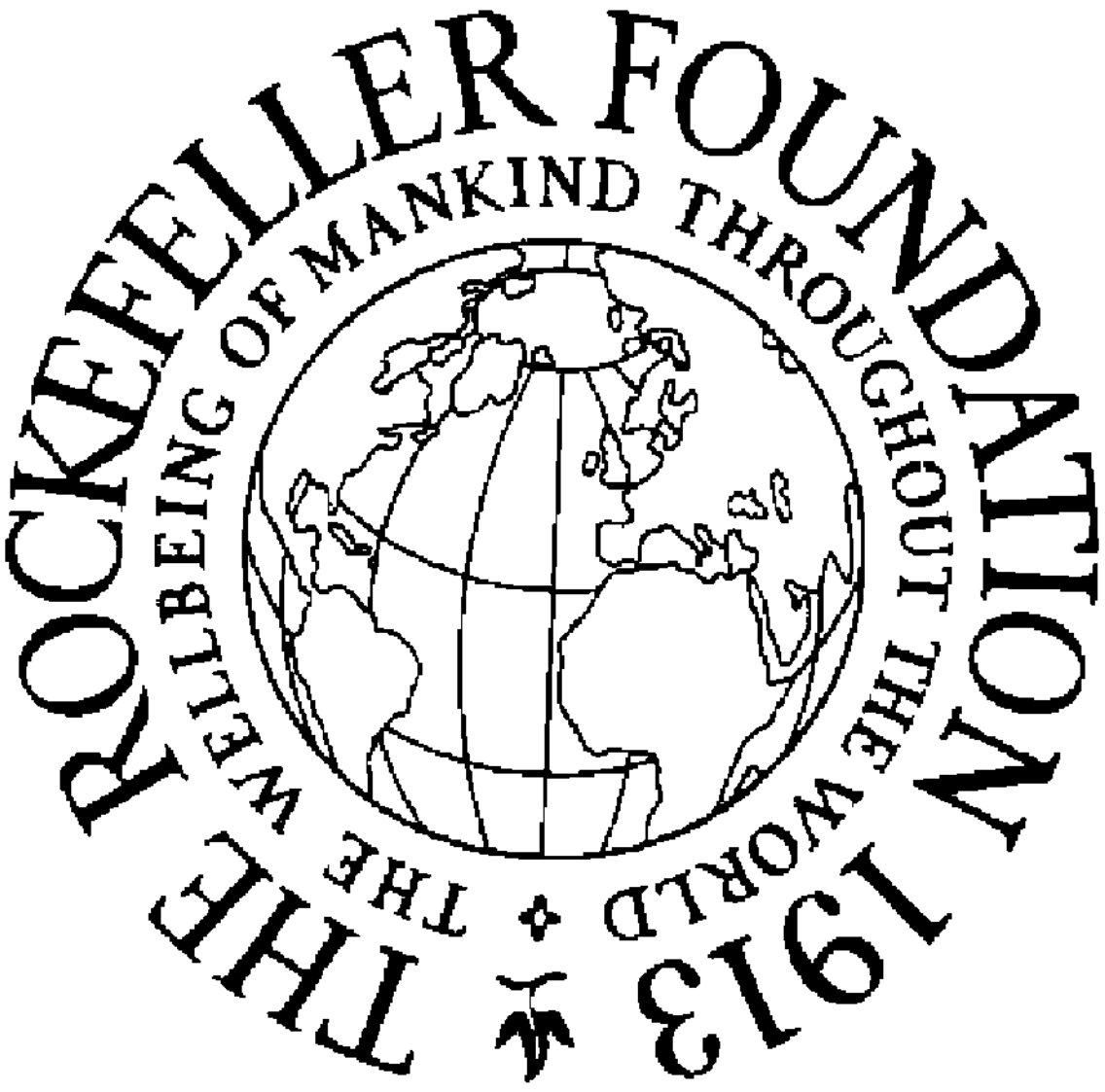
Photograph Excised Here

Among the specialized research equipment purchased by the Institute of Chemistry of the National University of Mexico with funds from the Foundation is a Perkin-Elmer double beam infrared spectrophotometer.

Photograph Excised Here

Photograph Excised Here

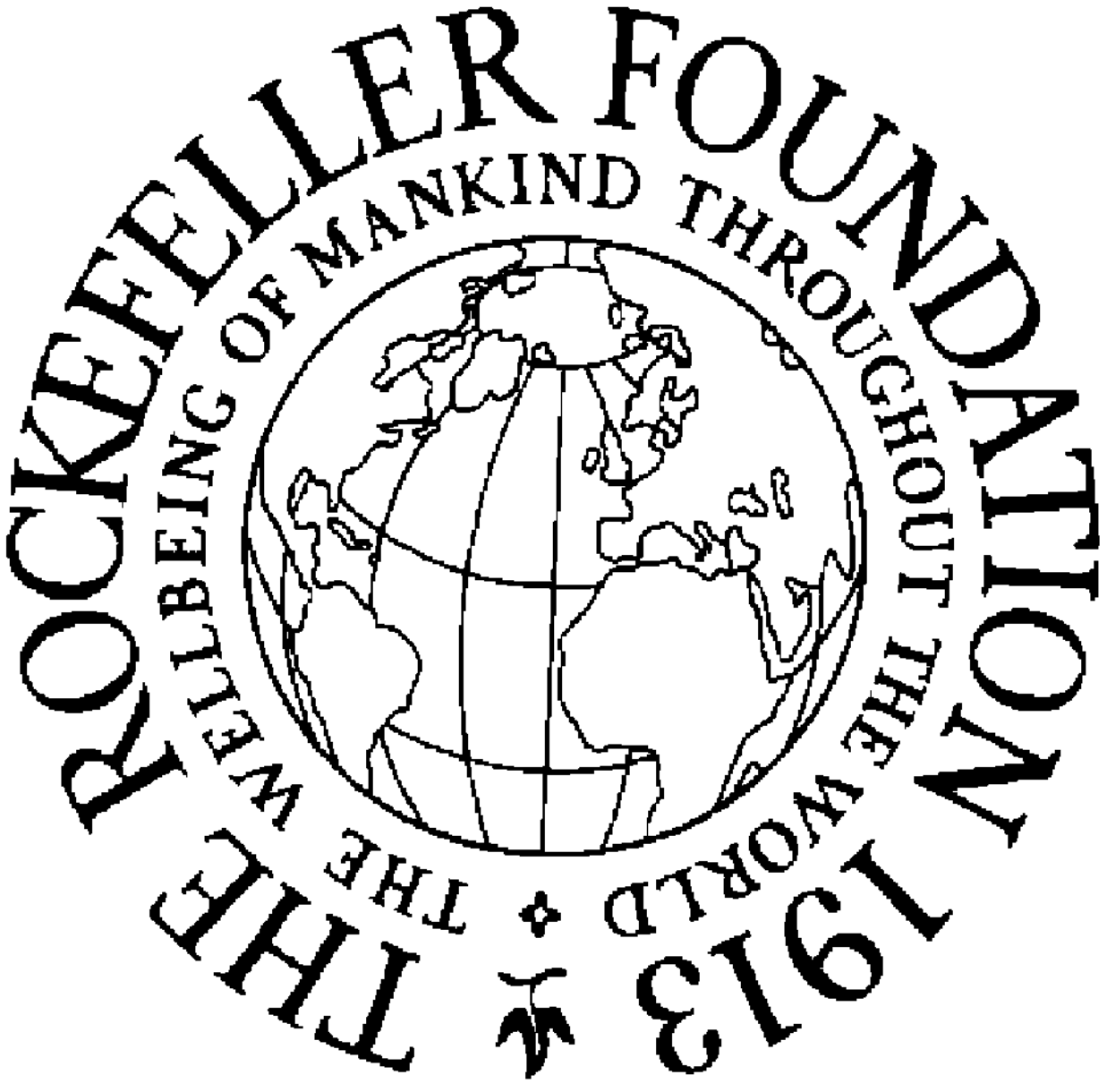
A view of one of the Institute of Chemistry's laboratories where research is conducted on the chemistry of natural products of Mexican plants and fruits.



Photograph Excised Here

The Belem Virus Laboratory is studying arthropod-borne neurotropic virus diseases in man and animals in Brazil. The laboratory's first isolation of a viral agent was made from a "sentinel" monkey in the Uriboca Forest. These monkeys are placed in cages and then raised by steel wires and pulleys to a height of 15 to 20 feet from the ground, in a clearing so as to prevent attacks from animals of prey. The monkeys are fed and watered each day and twice a week are bled and their sera tested by mouse inoculation.

Photograph Excised Here



Photograph Excised Here

Photograph Excised Here

Because it was found that people associated with deep forest were likely to have protective antibodies, the Belem laboratory arranged to take periodic blood samples from workers who were clearing virgin forest for a rubber plantation. One of the stations for collecting samples is shown above. On daily visits to homes in the area, the temperature was taken of anyone who complained of headache and blood samples were obtained from those who showed fever. At the time of the visit to the family at the left, the mother was grinding the day's coffee supply and the children had been in the forest gathering wild fruit.

Photograph Excised Here

Photograph Excised Here

THE RHINOCEROS BEETLE, *Oryctes rhinoceros* L.

In the Central and Southern Pacific Islands this beetle is an economically serious pest of coconut and other palms, sugar cane, and pineapple. Its threat to the coconut palm is especially serious because coconuts are the major subsistence crop and also the source of copra, the area's most important export product. The coconut palm shown at the left has undergone such frequent and extensive attacks by adult Rhinoceros beetles that its embryonic tissue is largely consumed and it will die. The South Pacific Commission is presently conducting a survey of the parasites and diseases of the beetle which it is hoped will lead to an effective program of biological control.

Photograph Excised Here

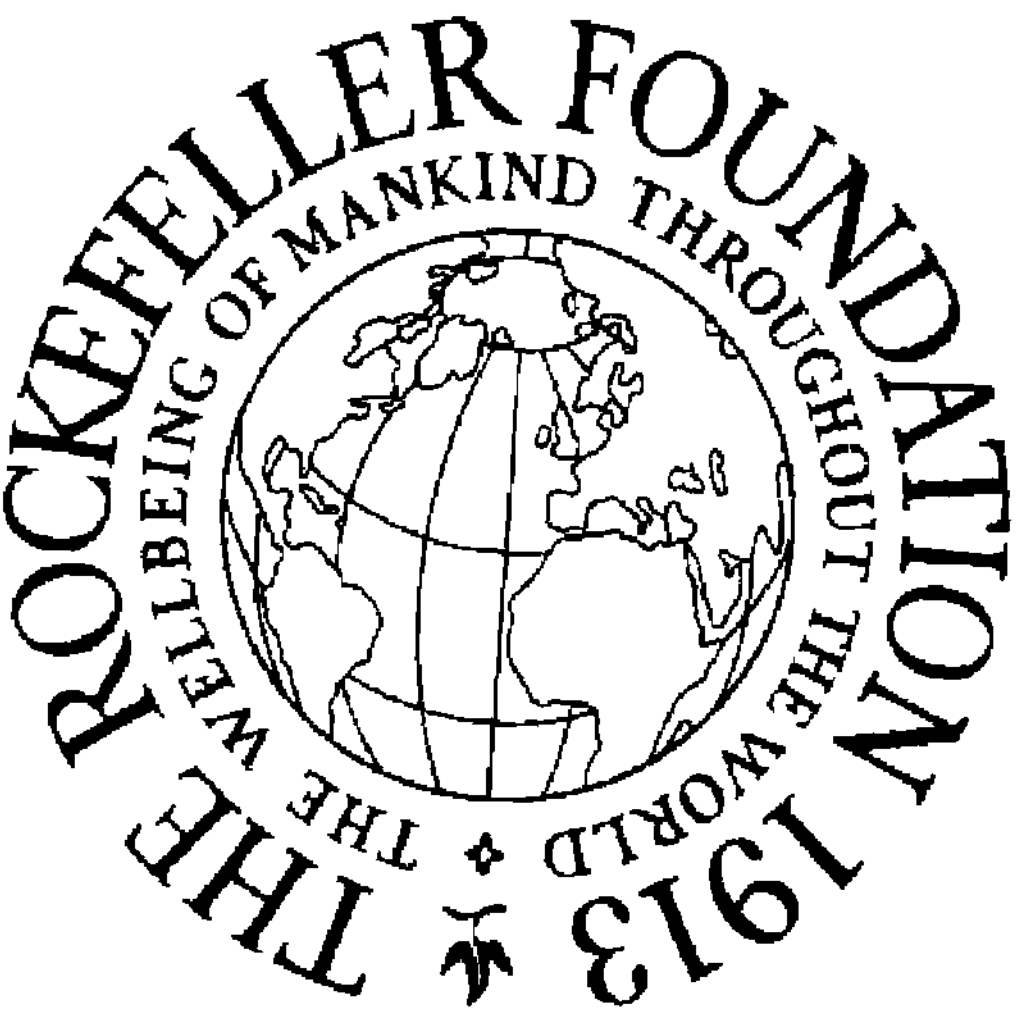
As part of their continuing researches on the behavior of bees, Professor Karl von Frisch and his colleagues at the University of Munich are experimenting to see whether bees have a "word" for the direction "upward."

Photograph Excised Here

Photograph Excised Here

Above left is a feeding table suspended from the top of a 60-meter-high cliff so as to hang next to the hive at the cliff's base. When some of the bees (all of which are numbered) have been attracted to it and have grown accustomed to the location, the table is raised by pulleys to the summit of the cliff. Its position is signalled by a team member on an adjoining peak. As the table ascends, a careful watch is kept to see whether the bees can explain the table's location to the rest of the hive.

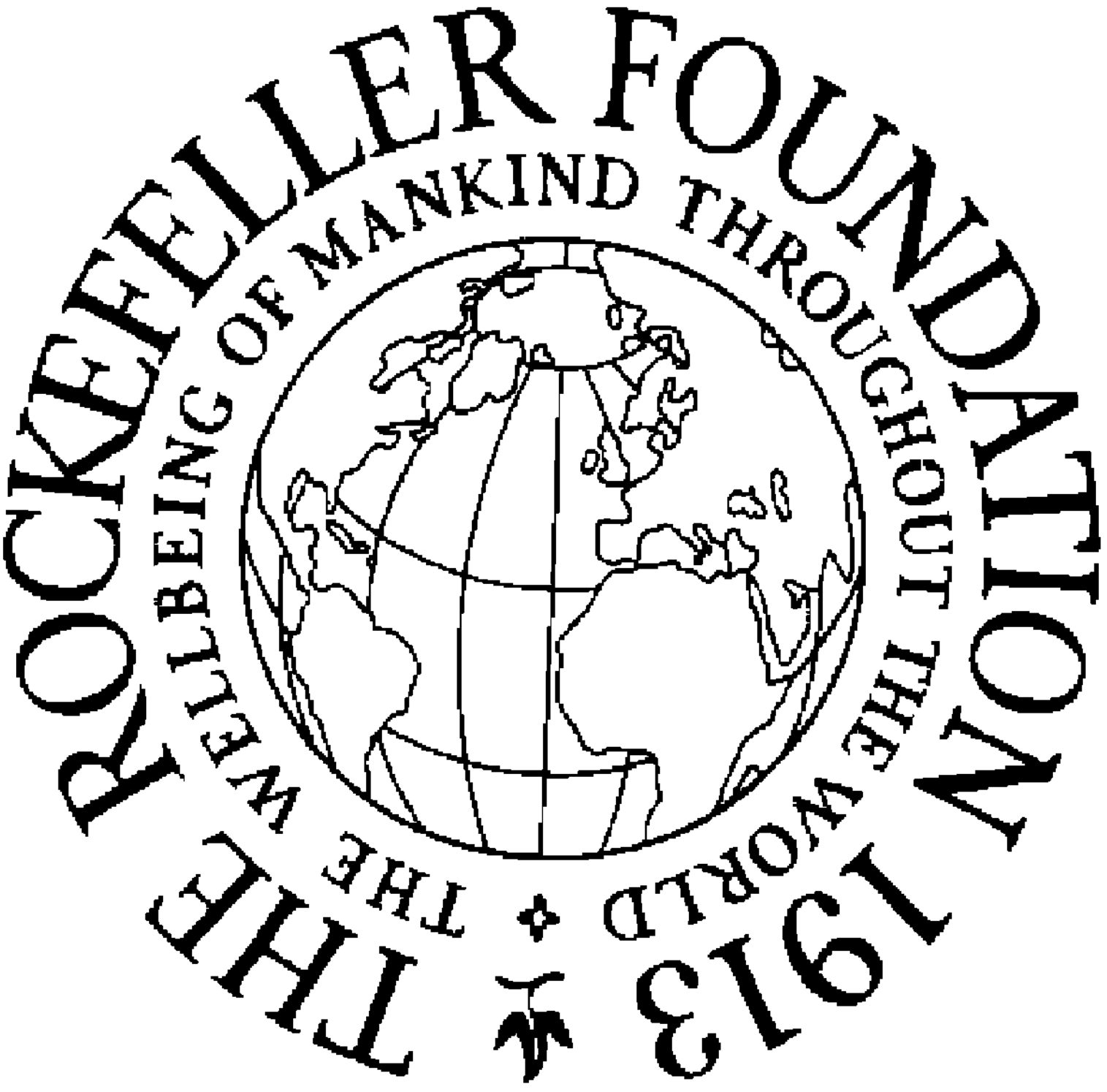
The International House of Japan, in Tokyo, was established in 1952 for the purpose of encouraging cultural and intellectual exchange between Japan and other countries. At that time the Foundation contributed $676,000 toward the center's building program and activities. In August of 1955 International House was formally opened. The buildings, which were designed by Japanese architects, include residential facilities, a library, meeting rooms, and offices.



Photograph Excised Here

Photograph Excised Here

The Philippine Studies Program of the University of Chicago is undertaking field research in agricultural and fishing communities in the Tagalog region of central Luzon, with the purpose of gathering data of a cultural-anthropological kind and also of studying the socio-economic situation of the villages. In this picture, villagers are rafting coconuts to the copra processing centers.



Photograph Excised Here

P. G. Miller

This aerial view of the west shore of Laguna de Bay, central Luzon, shows the fish corrals which the villagers use to catch silver grunts and catfish for Manila, San Pablo City, and neighboring towns. At the left are rice fields.

One of the purposes of the health survey of Puerto Rico being made by the Island's Department of Health and the medical school of the University of Puerto Rico, is to study ways in which existing health services can be improved through regionalization. As part of a larger program, the survey committee has presented a plan for converting the Ruiz-Soler Sanitarium (designed by Isadore Rosenfield, Architect and Hospital Consultant) at Rio Piedras to a district hospital which can be expanded into a base medical center.

Photograph Excised Here

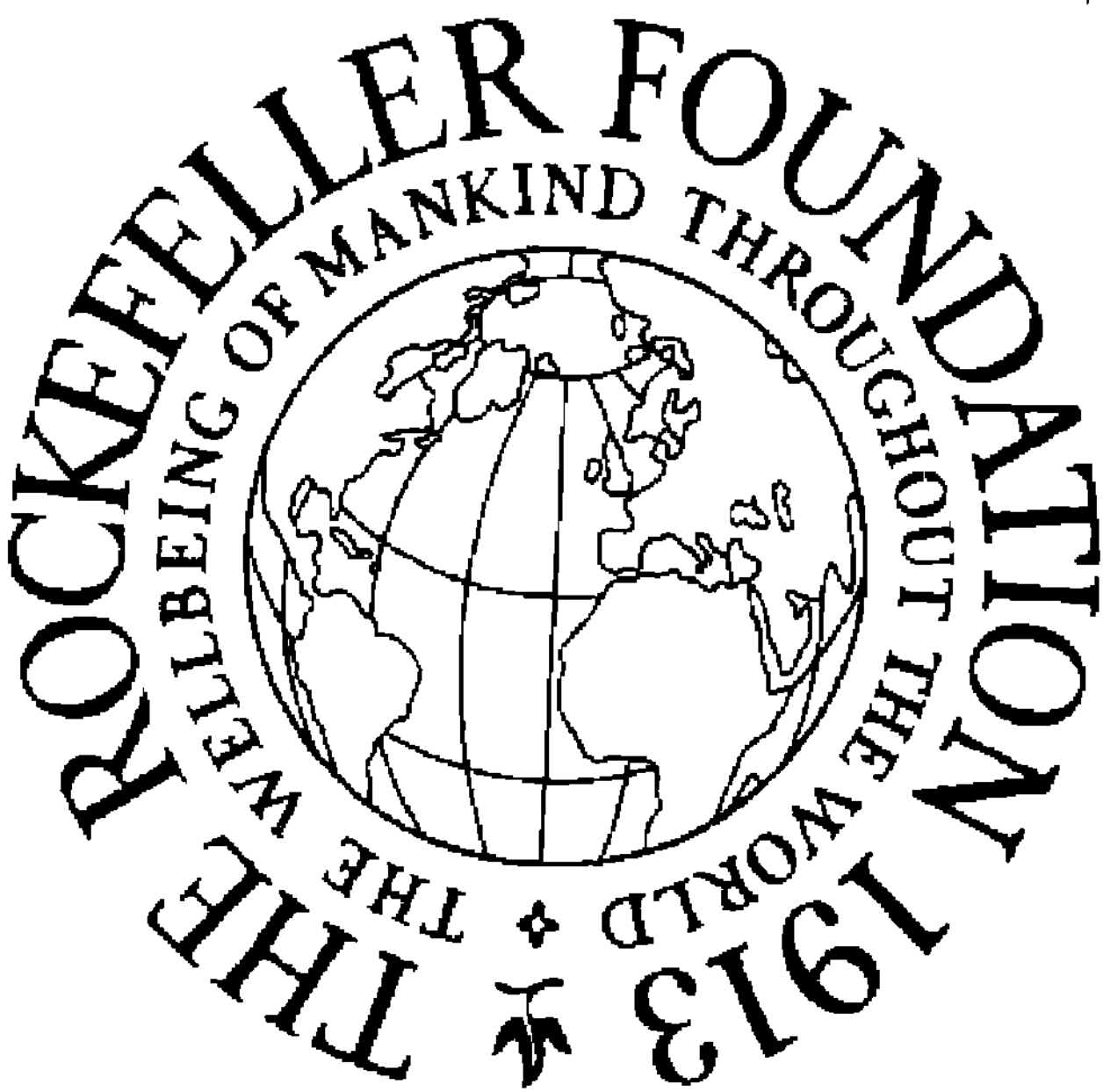
Photograph Excised Here

The students in the photograph above are working in the pathology laboratory in the Medical Faculty at the University College of the West Indies, Jamaica. The program developed by the Faculty combines both medical education and research, and at present is directed particularly toward the health needs of the area. It is now planned to expand the program to include field training at an out-patient clinic and also to extend medical services to the other islands in the British West Indies. To help make this possible, the Foundation contributed $314,000 in 1955.

Photograph Excised Here

Professor Hugo Theorell, recipient of the Nobel prize in medicine in 1955, examining apparatus for measuring magnetic susceptibility at the Medical Nobel Institute in Stockholm. The Foundation's current grant of $45,000 to Professor Theorell's researches in enzyme chemistry continues support which began in 1933.

The Institute of Andean Biology has been one of the most substantial contributors to modern knowledge of the physiology of living organisms under low oxygen conditions. This photograph was taken at the branch laboratory at Morococha, 14,900 feet above sea level, during a study on high altitude physiology.



Photograph Excised Here

Photograph Excised Here

Photograph Excised Here

The Foundation and the governments of El Salvador, Honduras, Nicaragua, Guatemala, Costa Rica, and Panama are cooperating in a program for improving corn production in the Central American region by strengthening the existing corn programs, coordinating research, and creating a system for the exchange of information and planting materials. At the left, agronomists inspect seed of the single crosses for the hybrid Mexico H-501 sent to Guatemala for yield trials. The corn shown above is the hybrid Cuba M-11, being tested in Nicaragua.

Photograph Excised Here

In its research on forage grasses and legumes, the Mexican Agricultural Program is investigating the adaptability of selected species grown under irrigated and rainfall conditions, and also giving increased emphasis to seed production. The picture above shows grass seed being threshed at Chapingo.

In addition to field days for farmers, the Mexican program holds meetings of regional extension workers at each of its research centers, where the men can learn about the program's current studies and also discuss problems they encounter in the field. The meeting shown below was held at La Piedad, Michoacán.

Photograph Excised Here

At the Tulio Ospina Experiment Station near Medellin, Colombia, land to be used in the bean breeding program is prepared by ridging. Bean plants have a very low tolerance of excess moisture, and ridging provides for a rapid run-off of surface water and drainage of the soil around the roots. Several of the lines developed in the program give excellent promise of being placed in commercial production in the near future.

Photograph Excised Here

Photograph Excised Here

Until a blight resistant potato can be developed for Mexico, potato fields must be sprayed with fungicides, as shown above. The potato improvement program is continuing its basic research studies on this problem and has obtained some outstanding selections which combine a high degree of resistance with acceptable commercial characteristics. These selections are being increased as rapidly as possible for more extensive tests.

Photograph Excised Here

In Mexico the work of developing improved hybrid corns for high-altitude regions is carried on at the Chapingo station. Tests are made here of hybrids adapted for irrigated plantings in March and April, and also of hybrids and synthetics to be grown with seasonal rainfall alone. Above, a portable irrigation system being used to prepare land for yield trials.

The Colombian program is continuing its experiments with chemical weed-killers in corn. Of the materials tested, pre-emergence treatments of DN-PE and 2,4-D amine have given the best results. The cost of these materials is high, however, in comparison with that of mechanical cultivation, and practical recommendations for farmers cannot be made as yet.

Photograph Excised Here

As a preliminary stage in the improvement of native grasses, the Mexican program has established nearly 1,000 samples of native grass seed in nurseries, where the material will serve as a basis for selection and seed improvement. A taxonomic study will be made and also a classification of the different types of natural grasslands according to botanical formations.

Photograph Excised Here

Photograph Excised Here

The yield trials of corn planted at Las Delicias (above) and four other locations in Costa Rica, as part of the Central American corn project, showed that the hybrid Mexico H-501 was well-adapted to the coastal regions of that country and yielded considerably more than native varieties.

Photograph Excised Here

The new wing recently added to the Virginia Museum of Fine Arts in Richmond includes an attractive theatre, seating about 550 persons, in which the Museum trustees with Rockefeller Foundation assistance are developing a community drama program having professional guidance but relying chiefly on voluntary participation. Above is a scene from *Liliom*, given in December.

MEDICAL EDUCATION AND PUBLIC HEALTH

THE YEAR 1955 has been a transitional one in medical education as well as public health. While continuity with past programs has been maintained through project support to various institutions at home and abroad, an internal review has been under way which has resulted in a number of specific concepts of future significance.

These studies have been needed especially because of the rapid change in the character of our public health problems during this decade. Infectious disease as a cause of death and disability has been undergoing a marked decline in the more advanced countries of the world. As a result, the composition of the populations concerned is being modified markedly.

Concurrently with these changes, there has been introduced into our industrial and social complex the completely new factor of nuclear energy, which has already had a profound effect upon national and international thought. The base of development in this field in the foreseeable future will be of such a magnitude as to tax both our scientific knowledge and our technical ingenuity in insuring public safety, entirely apart from the military problems involved. Both our philosophy of medical care and our objectives in public health must be reoriented to meet the new factors that have entered upon the world scene.

The programs that the Foundation is supporting in medical education in various parts of the world are predicated on the concept that the academic structure for medical education will differ appreciably among the various cultures and national patterns that exist today. Notwithstanding these differences, which are inevitable and reasonable, all sound medical curricula are in harmony with the general thesis that medical diagnosis and therapy must rest upon modern scientific development. Not only must the medical student enter his professional training with adequate scientific preparation, but the objective character of scientific observation and the experimental approach to biomedical problems must color his entire professional life.

In the general support of medical schools in various countries, the objectives of The Rockefeller Foundation have been: to encourage the development of faculties with strong scientific orientation and a devotion to the responsibilities of teaching; to extend the scientific method into the clinical training of the student, with emphasis upon the integration of clinical disciplines and the development of a sympathetic understanding of the patient and his problems. In extending its assistance to the improvement of the quality of instruction in medicine and public health, the Foundation has recognized the inseparability of teaching and research and has encouraged the evolution of departments where the close interplay of these most fundamental aspects of academic life would have the greatest prospect of full development.

Programs have meaning only in terms of people. One of the most essential activities of the Foundation is its provision for the advanced training of outstanding persons who may be expected to exhibit leadership in the educational systems of their respective countries. The numerous fellowships and travel grants provided contribute to the development of the professional personnel upon whom the entire expectation of a steadily improving medical care and pub-

lic health practice must depend. Special studies in the United States have been supplemented on occasion by visits of the Fellow to other countries in order that he may apply to his own problems the most relevant methods and concepts.

Professional Education

MEDICAL

UNIVERSITY OF CHILE

FACULTY OF MEDICINE

The University of Chile's medical school in Santiago was originally established in 1738, about 150 years after the university itself was founded. It is currently responsible for seven classes of approximately 160 persons each, 90 per cent Chilean and ten per cent from other Spanish-speaking countries, and it trains most of the physicians who enter the National Health Service in Chile.

Facilities for clinical teaching include about 3,400 hospital beds, 1,400 under immediate university control.

A fire destroyed the physical plant of the school in 1948. In 1949 it was reestablished in temporary quarters in various Santiago hospitals, and has remained in these quarters since that time pending construction of a new building. Construction of the building, planned after a study of representative medical schools in the Western world, was started late in 1954, but the medical school faculty, especially in the preclinical sciences, is still working under exceptionally difficult conditions.

Since 1942 The Rockefeller Foundation has appropriated $145,600 to the University of Chile for the Faculty of Medicine. Continuing this support through the current

transition period, the Foundation in 1955 made a five-year grant of $379,000 for additions to the staff, increased salaries, teaching and research equipment, and for the travel expenses of professors visiting from abroad for three months or more while the medical school is in session.

UNIVERSITY OF MINAS GERAIS

FACULTY OF MEDICINE

The Faculty of Medicine of the University of Minas Gerais, Belo Horizonte, is centrally located in the capital of one of the largest and potentially one of the richest of the Brazilian States, Minas Gerais. Founded in 1911, it is the fourth oldest faculty of medicine in the country. Minas Gerais depends on it for its principal supply of physicians.

The Belo Horizonte medical school has, for the past several years, been carrying through major organizational changes. A 150-bed teaching hospital and a new building to house most of the preclinical science departments were added to its facilities in the last three years. During the next two years the older buildings of the school will be remodeled for the remaining departments, and an addition to the library, doubling its available space, has also been planned.

The school expects to establish positions in all preclinical science departments on a full-time basis as soon as possible, and as a first step is now making all personnel full-time in the Departments of Anatomy, Pathology, and Biochemistry. The Department of Biochemistry is a national training center for teachers and research workers in biochemistry.

To help the school bridge the period of financial stringency attached to these projects, the Foundation has appropriated 9,222,000 cruzeiros and $155,000 (approximately $339,000) to the University of Minas Gerais for use through December 31, 1959.

UNIVERSITY OF SÃO PAULO

RIBEIRÃO PRETO AND SÃO PAULO
FACULTIES OF MEDICINE

The Foundation gave assistance in 1955 to both the São Paulo and the Ribeirão Preto Faculties of Medicine of the University of São Paulo, Brazil.

The Ribeirão Preto school was organized as a step toward meeting the special needs of Brazilian rural areas. As in other countries, medical care in Brazil is more readily available in the industrial and urban population centers than in the agricultural areas.

About 200 miles northwest of São Paulo, the Ribeirão Preto school is situated in one of the State of São Paulo's richer agricultural districts, near the border of the State of Minas Gerais. Drawn from the States of São Paulo, Minas Gerais, and to a lesser extent Matto Grosso to the west, students are accepted on the basis of merit alone but preference is given to applicants from adjacent rural areas. Student admissions are limited to eighty a year.

The Ribeirão Preto school departs from general practice in Brazil in having only one department of medicine and one department of surgery, with a single head of each department over the representatives of specialties in each field. Also unusual is the emphasis placed upon clinical psychiatry in clinical teaching. With the aim of teaching preventive medicine as a dominant point of view, the school includes courses in this field throughout the curriculum after the first year.

The Ribeirão Preto school received a three-year grant of $278,000 from the Foundation in 1955 for equipment and supplies for all departments.

An older branch of the University of São Paulo, the medical school in São Paulo city was constructed in 1928-29 and equipped through financial assistance amounting to approximately $1,000,000 from the Foundation. A state-sup-

ported institution, subsidized in recent years by the federal government, it attracts students from all over Brazil. Its entire faculty for the preclinical years is full-time and until recently was unique in Brazil in this respect.

The São Paulo Faculty of Medicine has received approximately $55,000 from the Foundation since 1950 for the Department of Histology and for the development of a laboratory for work with radioactive isotopes. In 1955 a further one-year grant of $35,500 was made for the Departments of Histology, Anatomy, and Physiology.

UNIVERSITY OF OXFORD

SCHOOL OF MEDICINE

The beginning of medical teaching at the University of Oxford dates from 1883 when the Waynflete Professorship of Physiology was established. During the next thirty years departments in the basic sciences were built and raised to world eminence by such outstanding scientists as Burdon Sanderson, J. S. Haldane, and Sir Charles Sherrington.

Although the groundwork for clinical departments at Oxford was laid in 1936 by Lord Nuffield, who endowed professorial chairs in medicine, surgery, obstetrics and gynecology, anesthetics, and orthopedic surgery, it was not until World War II, when the clinical facilities of London were disrupted, that a full clinical school was developed in Oxford at Radcliffe Infirmary.

The university is now broadening its facilities for clinical research and teaching by building new laboratories in Radcliffe and by the purchase of new laboratory equipment. Professor G. W. Pickering, formerly of St. Mary's Hospital, London, has been appointed Regius Professor of Medicine. Dr. Pickering and his research associates at St. Mary's, some of whom will come with him to Oxford, have been conducting research on hypertension in man. They will continue these studies at Oxford and at the same time develop

the new clinical school as an important training center in academic medicine.

In 1955, to help develop the research and teaching program in the clinical sciences, The Rockefeller Foundation awarded the university a further grant of £52,000 (approximately $156,000) for the use of the Regius Professor of Medicine toward the cost of research laboratory facilities and equipment.

CAMPAIGN FOR THE IMPROVEMENT OF HIGHER EDUCATION PERSONNEL, BRAZIL

Ten new medical schools have been established in Brazil since 1950 in an effort to satisfy a demand for medical education which could not be met with existing training facilities. The Roman Catholic Church, São Paulo State, and the University of Rio Grande do Sul were among the groups participating in this effort. In addition to the ten new schools already operating, two more will be opened in 1956, and plans have been laid for at least another two by 1960.

These new schools have created an unprecedented demand for teachers. In part to deal with this problem, the Campaign for the Improvement of Higher Education Personnel (CAPES), Rio de Janeiro, was established by the Brazilian Government in 1953. Since it was founded, CAPES has developed advanced training centers in a wide variety of fields, including medicine; it also awards fellowships for study in these centers.

In support of its medical fellowships program, the Foundation in 1955 made a two-year grant to CAPES of 6,211,500 cruzeiros (approximately $124,000).

About 50 one-year fellowships for study in Brazil will be awarded from the grant to teachers in medical schools assured of positions after training or to persons being prepared for specific guaranteed posts. Candidates, who will

be sought in part through visits to medical schools by representatives of CAPES, will be interviewed personally before awards, based on merit, are made.

CATHOLIC UNIVERSITY OF CHILE

MEDICAL EDUCATION

Organized in 1930, the Medical School of the Catholic University of Chile, in Santiago, is the youngest of the country's three medical schools. It occupies two of the university's eight faculty buildings and an adjacent teaching hospital of 190 beds, and until recently admitted an average of 27 Chilean students a year. In 1954, 35 students were admitted, but since larger classes would mean curtailment of the tutorial teaching emphasized at the school, no further increase is now contemplated.

Of 25 professorships at the school, 13 in 1955, as opposed to two in 1940, were full-time chairs. This is only one of many changes planned and effected since the school was founded.

Under the leadership of Director Luis Vargas, the Departments of Anatomy, Histology, and Embryology have all been combined in a single Department of Morphology in the past several years. Teaching and research in the functional sciences, physiology (including neurophysiology, a separate chair), biochemistry, and pharmacology have been closely integrated. Clinical teaching in medicine and surgery, formerly organized into seven courses, is now combined in a single general subject.

Toward the expenses of preclinical teaching and research in the Faculty of Medicine, The Rockefeller Foundation has appropriated $123,600 to the Catholic University of Chile for use through June, 1958. Approximately $40,000 was given by the Foundation for similar uses in earlier years.

CORNELL UNIVERSITY

ELECTRON MICROSCOPY

Research in general pathology has lost some of its momentum in recent years because the lack of effective techniques blocked visual study of the cellular changes, secondary to disease processes, occurring in morbid tissues. To a degree pathologists were diverted into a fruitful investigation of the physiological alterations associated with cellular change, but this extension of their interest in many instances only increased the need for the direct visualization of cells.

The introduction of the electron microscope, with powers of resolution and definition far greater than those of conventional microscopes, promised to overcome one of the prime difficulties in the way of general pathologists, but methods for embedding and sectioning tissues of extreme thinness, so that they could be examined effectively under the electron microscope, were at first lacking. These methods have now been developed, cytologists are making detailed studies of normal cellular structure, and the time seems ripe for use of the electron microscope in cellular pathology.

The Foundation has made a five-year grant of $95,000 to Cornell University under whose auspices a program for the application of electron microscopy to the teaching of pathology and to the study of cytological changes in disease has been undertaken. Dr. John G. Kidd will direct the program in the Department of Pathology at Cornell Medical College, New York City.

UNIVERSITY OF SAN MARCOS

HIGH ALTITUDE PHYSIOLOGY

Research on various aspects of human physiology at high altitudes at the University of San Marcos, Lima, Peru, has received part of its support from The Rockefeller Foun-

dation since 1934. The Institute of Andean Biology, where this research is carried on, has its principal laboratories in the university Medical School in Lima, but its unique feature is the possession of two branch laboratories at 10,700 feet and 14,900 feet above the sea, one at Huancayo, the other at Morococha, 90 miles from Lima in the high Andes.

Among other interesting features, the research being conducted at the institute on such subjects as respiration and circulation under low oxygen conditions has importance for the operation of aircraft at high altitudes.

The institute has in the past provided training at the graduate level, both for young Peruvians and for visitors from other countries, in the physiology of respiration and circulation. But its presence in the Medical School offers an opportunity for enriching the program of undergraduate instruction there which has not yet been fully explored.

Under the direction of Dr. Alberto Hurtado, the staff of the institute includes four associate and seven assistant professors and two instructors. This group of high altitude physiologists is experienced in the physiology of respiration and circulation in their broadest aspects, including such matters as the formation of the blood cells and the biochemistry of the energy systems in tissue cells. Thus their work has direct application to such different clinical states as anoxia arising from heart failure and the curious multiplication of the red blood cells known as polycythemia vera.

The Institute of Andean Biology is a section of the Department of Pathological Physiology. The University of San Marcos now plans to integrate further the teaching and research activities of the department with the program of undergraduate instruction in normal physiology. Toward the costs of this reorganization, and in further support of the institute's research program, The Rockefeller Foundation has made a two-year grant of $90,000. Previous Foundation support to the university for related purposes totaled $124,889.

SANTA CASA DE MISERICORDIA

INTERN AND RESIDENCY PROGRAM

The Santa Casa de Misericordia of Rio de Janeiro, a charitable society founded in 1580, maintains six hospitals in Brazil, the largest of which is the Central Hospital. To aid the society in developing a graduate training program for interns and residents at Central Hospital, The Rockefeller Foundation has made a grant of 2,856,000 cruzeiros (about $57,000) for a three-year period.

The grant will provide partial support for the remodeling of the necessary living quarters for the resident staff and for the administrative expenses of the new program. The objective of the project is to demonstrate the feasibility and educational value of general rotating internships and residency training in medical and surgical specialties under circumstances of such facilities in Brazil.

UNIVERSITY OF CHICAGO

STUDY OF THE INTEGRATION OF NEGROES IN MEDICINE

In recent years, and particularly since the end of World War II, the position of Negroes in all fields of medicine appears to have improved to a marked degree. An understanding of how and why this improvement has occurred, its rate, and its further potentialities is important in planning the future development of medical training facilities, and even more important in relation to how problems of segregation are solved.

National Medical Fellowships, Inc., published *Negroes in Medicine* in 1952 as a six-year report of the progress of Negro integration in medicine. The information contained in the report led this group and the Department of Sociology of the University of Chicago to plan a study which would permit an analysis of the forces and processes lead-

ing to the growing role of Negroes in medical care and science. Toward the costs of the study, which will be directed by Dr. Dietrich C. Reitzes, the Foundation in 1955 made a one-year grant of $38,100 to the University of Chicago.

STATE MEDICAL COLLEGE HOSPITAL

MODEL TEACHING WARDS

The Foundation has appropriated $35,000 for one year to the State Medical College Hospital, a general medical and surgical hospital in Trivandrum, Travancore, India, to equip and supply two model teaching wards. The hospital serves as the main clinical teaching field for the Medical College and Nursing School in Trivandrum. Founded in 1951, the college is one of India's newer medical schools.

The Indian Government is providing the additional staff and the structural alterations required for the wards, where the importance of modern clinical care will be demonstrated for students in the college and the nursing school. The project will be developed under the direction of Dr. R. Kesavan Nair, hospital superintendent.

UNIVERSITY OF THE REPUBLIC

FACULTY OF MEDICINE

A one-year grant of $32,500 was awarded to the University of the Republic, Montevideo, Uruguay, in 1955 for teaching and research facilities in three departments of the Faculty of Medicine.

The first, the Department of Physiology, is divided into research sections devoted to endocrinology and enzymatology, neurophysiology, vegetative functions, and physiological obstetrics. These units all maintain research laboratories and are also concerned with teaching undergradu-

ate and graduate students. The physiological obstetrics section is internationally known for research contributions in its field.

The second department receiving assistance, the Department of Biophysics, is collaborating with the neurophysiology section of the Department of Physiology in a program of research involving radioactive isotopes and microdissection techniques.

The third department, Histology and Embryology, also divides its time between teaching and research, and in the past two years has published twenty-four papers on scientific subjects.

OTHER GRANTS

University of Bahia, Faculty of Medicine, Brazil: equipment and supplies for the Department of Pathology; $9,130;

University of Michigan, Medical School, Ann Arbor: for the exchange of two basic science teachers and one clinical teacher between the Medical School and the Faculty of Medicine of the University of Antioquia, Medellín, Colombia; $8,500;

Christian Medical College, Vellore, India:

Purchase and installation of equipment for use in the Department of Thoracic Surgery; $8,000;

Travel by four members of the staff and Governing Body to the American University of Beirut, Lebanon, to observe its educational policies, methods, and pattern of organization; $4,600;

University of Antioquia, Faculty of Medicine, Medellín, Colombia:

Equipment for the Department of Physiology; $8,000;

Dr. Bernardo Jimenez, professor of microbiology; to observe recent developments in the teaching of microbiology in the United States; $2,675;

Dr. Alberto Gomez Arango, chief professor, Surgical Clinic; to visit the Department of Surgery, Medical School, University of Michigan, to study organization and teaching methods: $2,550;

Dr. Jesús Pelaez Botero, head, Department of Biochemistry; to observe the teaching of biochemistry in the United States; $2,200;

Dr. Alfredo Correa-Henao, head, Department of Pathology; additional travel in the United States; $775;

Postgraduate Medical Institute of the Massachusetts Medical Society, Boston: toward a program of continuing education for the practicing physician; $7,500;

University of Heidelberg, Germany: toward support of the teaching program of the Physiological Institute, under the direction of Professor Hans Schaefer; $7,500;

Gajra Raja Medical College, Gwalior, Madhya Bharat, India: equipment for the Anatomy Department; $5,600;

University of Valle, Cali, Colombia:

Purchase of basic reference and teaching texts for the medical library of the Faculty of Medicine; $5,000;

Professor F. Carlos Lehmann V., Faculty of Medicine; additional training in the United States in the field of virus research work and the collection of vertebrates and other animals for laboratory use; $2,300;

Dr. K. Ponnamma, Department of Obstetrics and Gynecology, Medical College, Trivandrum, India: to observe recent developments in obstetrics and gynecology, and in medical and nursing education, in the United Kingdom and the United States; $4,100;

Albany Medical College of Union University, New York: purchase of two-way radio transmission facilities for postgraduate education programs under the direction of Dr. Frank M. Woolsey, director, postgraduate education; $4,000;

Dr. Norio Shimazono, professor of biochemistry, Tokyo University, Japan: to visit medical schools in the United States to observe recent developments in the teaching of biochemistry; $3,750;

Dr. Teisho Aoki, professor of pathology, Medical School, Keio University, Tokyo, Japan: to visit medical schools in the United States to observe recent developments in the teaching of pathology; $3,475;

Dr. Izzet Kantemir, head, Pharmacological Institute, School of Medicine, Ankara, Turkey: to visit the United States to observe new techniques in pharmacology and new developments in medical education; $3,230;

Ministry of Health, New Delhi, India: preparatory expenses in connection with the general conference of Indian medical educators; $3,000;

Dr. Percival C. C. de Silva, professor of pediatrics, University of Ceylon, Colombo: to observe methods of teaching pediatrics in the United States and the Caribbean region with special reference to current developments in preventive medicine; $2,850;

Professor C. Bruce Perry, Department of Medicine, University of Bristol, England: to visit medical schools in the United States; $2,800;

Professor Ihsan Dogramaci, head, Department of Child Health and Pediatrics, Faculty of Medicine, University of Ankara, Turkey: to visit departments of pediatrics and institutes of maternal and child health in the United States and Mexico; $2,750;

Dr. Edith L. Potter (Meyer), Department of Obstetrics and Gynecology, University of Chicago, Illinois: to observe and lecture at centers of obstetrics and gynecology in the Far East, the Middle East, and Europe; $2,500;

Dr. Hermann Rahn, associate professor, Department of Physiology, School of Medicine and Dentistry, University of Rochester, New York: to study high altitude physiology at Morococha and Lima, Peru; $2,400;

Dr. David A. Rytand, executive, Department of Medicine, Stanford University, California: to visit recognized centers of medical teaching and research in Europe; $2,350;

Dr. Bishnupada Mukopadhaya, lecturer in orthopedic surgery, Prince of Wales Medical College, Patna University, India: to visit orthopedic surgery centers in the United States; $2,325;

Dr. Michael Heidelberger, professor of immunochemistry, College of Physicians and Surgeons, Columbia University, New York: to give a series of lectures at the Faculty of Medicine, Tokyo University, Japan; $1,900;

Dr. Julio Ornelas K., director, Medical Faculty, University of Chihuahua, Mexico: to observe the organization and operation of medical schools in South America; $1,900;

Dr. Juan Arturo Guedea Larios, assistant director, Faculty of Medicine, University of Guanajuato, León, Mexico: to observe the organization and operation of medical schools in South America; $1,800;

Sydney John Patrick, senior lecturer, Department of Physiology, University College of the West Indies, Jamaica: to study liver metabolism research techniques and to observe teaching programs in the United States; $1,500;

Dr. Hassan Misbah Idriss, associate professor of pediatrics, American University of Beirut, Lebanon: to observe recent developments in the fields of pediatrics and medical education in the United States; $1,400;

Dr. Ewen Thomas Taylor Downie, senior general physician and dean, Alfred Hospital Medical School, Melbourne, Australia: to observe modern trends in undergraduate medical education and family care programs in the United States and Canada; $1,000;

University of Brazil, Faculty of Medicine, Rio de Janeiro:

Dr. José Rodrigues da Silva, associate professor of tropical medicine; to visit the United States to observe modern trends in the teaching of tropical medicine and clinical medicine; $1,000;

Dr. Julio Studart de Moraes, assistant professor of clinical medicine; to study in the United States; $920;

Dr. Dimas Prajeres de Campos, medical assistant, Orthopedic Service, Santa Casa de Misericordia Hospital, Rio de Janeiro, Brazil: to accept a residency in orthopedic surgery at the University of Wisconsin Hospitals; $1,000;

Dr. Stephen Wilhelm Thesleff, assistant professor of pharmacology, University of Lund, Sweden: to visit recognized centers of research in neuropharmacology in the United States; $825;

Dr. Juan Sanchez Salcedo, Jr., professor of biochemistry, School of Medicine, University of the Philippines, Quezon City: to observe new developments in biochemistry and nutrition in the United States; $600;

Dr. Hiroshi Miyake, professor of surgery, Kyushu University, Fukuoka, Japan: to visit medical schools in the United States; $600;

Dr. Leslie O. S. Poidevin, director of obstetrics, University of Adelaide, Australia: to visit recognized centers of gynecological pathology and obstetrical teaching and services in the United States; $525;

Dr. Alfred Alvin Angrist, professor and chairman, Department of Pathology, Albert Einstein College of Medicine, Yeshiva University, New York: to observe teaching techniques in undergraduate education in the United States; $525;

Dr. Shankar Karunakar Menon, dean, Faculty of Medicine, University of Rajputana, and principal, Sawai Man Singh Medical College, Jaipur, Rajasthan, India: additional expenses of visits to medical centers in the United States to observe new methods of medical education and medical school and hospital administration; $427;

Dr. Thure von Uexküll, chief assistant in internal medicine, University of Munich, Germany: additional expenses of attendance at the European Symposium on Medical Education held in Nice in 1953; $17.

NURSING

UNIVERSITY OF EDINBURGH

NURSING TEACHING UNIT

A new postgraduate program for the training of teachers and administrators in nursing is currently being developed by the University of Edinburgh in cooperation with the Scottish branch of the Royal College of Nursing.

The new Nursing Teaching Unit, ultimately to be housed wholly on University of Edinburgh premises, will be the first of its kind within the framework of a university in Great Britain. Its head and most of its teachers will be regular members of the university staff, responsible to the Faculty of Medicine. Candidates for the Nurse-Tutor Certificate offered under the program will be full students of the university and will enjoy the advantages of close contact with general university life throughout the course.

Toward support of the new unit The Rockefeller Foundation has appropriated £30,000 (approximately $90,000) to the University of Edinburgh for use during the five-year period ending June 30, 1960.

UNIVERSITY OF VALLE

NURSING EDUCATION

The University of Valle, Cali, Colombia, was created about ten years ago as a regional institution of higher learning for the Cauca Valley. Its medical center is training personnel for a health program especially adapted to the area, still largely rural, and as part of this activity developed a nursing school in 1952.

From the beginning the university has been concerned with preparing nurses for broad community responsibilities beyond the duties of service within hospital wards, and courses in the Nursing School are now being broadened to

include training in community health through coordination with the curriculum of the Medical Faculty related to public health. The recently established Department of Preventive Medicine and Public Health in the Medical Faculty will furnish the technical structure for this training.

For the Faculty of Medicine, The Rockefeller Foundation previously appropriated a total of $513,000 to the University of Valle, and in support of the expanded Nursing School program made an additional five-year grant in 1955 of 110,000 Colombian pesos (about $46,200).

OTHER GRANTS

The Brazilian Nursing Association, Rio de Janeiro:

An appraisal of nursing resources and needs in Brazil; $10,000;

Miss Haydee G. Dourado, Special Health Service, Ministry of Health; to study techniques for appraisal of nursing care in the United States; $2,525;

National Institute of Nursing, Lima, Peru: teaching equipment; $10,000;

National Postgraduate School of Nursing, Seoul, Korea: equipment and support of teaching activities; $10,000;

Miss Alma F. Lara, instructor in pediatric nursing, College of Nursing, University of the Philippines, Quezon City: to visit schools of nursing in the United States and Canada to observe research work and graduate programs in nursing; $5,100;

Equipment and supplies for the use of Miss Lillian A. Johnson, temporary Rockefeller Foundation staff member, in connection with her assignment to the School of Nursing, Trivandrum, Travancore, India; $5,000;

Mrs. Masae Hirai, supervisor, public health nursing, Tokyo Central Health Center, Japan: to study trends in public health nursing and comprehensive medical care programs in the United States; $3,675;

Miss Ingrid Nielsen, matron, Oringe Mental Hospital, Vordingborg, Denmark: to observe developments in psychiatric nursing programs in Canada and the United States; $3,050.

PUBLIC HEALTH

UNIVERSITY COLLEGE OF THE WEST INDIES

FACULTY OF MEDICINE

The Faculty of Medicine of the University College of the West Indies in Jamaica has, during the past seven years, developed a highly coordinated program of research and teaching focused on the diseases and health problems peculiar to that colonial area.

For some time, however, the faculty has wished to expand its studies to include a larger part of the population, and now plans to establish an outpatient clinic at a government-owned health center built recently in the area of Mavis Bank, Jamaica. These conveniently located facilities serve a selected population of about 5,200 persons whose health problems will be studied in connection with direct observations of their diet, customs, and social conditions. In addition, the faculty's Department of Obstetrics plans to initiate a home delivery service and facilities for training midwives in conjunction with medical students to create a team relationship.

The University College is also eager to extend medical services to the other islands of the archipelago and to provide for an exchange of personnel between the University College and individuals in the outlying areas who might wish to do postgraduate work in their special fields.

Representing a cooperative effort of the United Kingdom and the several governments concerned, the West Indian college was founded in 1946 to provide higher education for Barbados, British Guiana, British Honduras, Jamaica, the Leeward Islands, Trinidad, and the Windward

Islands. Although affiliated with the University College of London, it is controlled by an autonomous board composed of representatives of the British West Indies and selected personnel from the United Kingdom.

To aid in the teaching and research program, the establishment of the clinic, and the extension of medical services to the other islands of the British West Indies, The Rockefeller Foundation in 1955 made a five-year grant of $314,000 to the University College.

UNIVERSITY OF LONDON

OCCUPATIONAL HEALTH

One of the most highly industrialized areas in the world, the United Kingdom is also one of the areas most harried by public health problems in connection with its industry. The rates of lost time and disability among industrial workers are high, and the effects of air pollution in the general population are occasionally very serious.

With the increasing complexity of industrial processes, including the use of atomic energy, the situation is steadily becoming worse, and in some parts of the country the need for an immediate attack on industrial health hazards is urgent.

The London School of Hygiene and Tropical Medicine of the University of London for the past several years has offered to a limited number of students an elective in occupational health. But neither at this school nor elsewhere in the United Kingdom has a center been developed where the methods of physics, medicine, engineering, and other arts and sciences are brought together on a major scale for training and research in this field. Such a center is now to be established at the London School in a new Department of Occupational Health.

The department will be associated closely with such existing Departments of the school as Epidemiology and

Vital Statistics, Applied Physiology, and Public Health, and with the Medical Research Council Unit on Environmental Hygiene housed at the school. For salaries and for additional research and teaching equipment, The Rockefeller Foundation has appropriated £15,000 (about $45,000) to the University of London for use during the next five years.

CHRISTIAN MEDICAL COLLEGE

PREVENTIVE AND SOCIAL MEDICINE

Among the present objectives of the Department of Preventive and Social Medicine at the Christian Medical College, Vellore, India, is the establishment of a health center to serve the college field area—about 11 square miles with a total population of 30,000.

The center will give medical and nursing students at the college the opportunity to participate in a comprehensive rural medical program, revolving around maternal and child health, health education, public health nursing, environmental sanitation, and related aspects of social medicine. Limited medical care for the inhabitants of the field area will be offered, and research on significant problems of preventive medicine and public health will be carried on.

Plans for the project have been approved by local and state officials and will be put into execution during the next several years. Toward the general expenses of the Department of Preventive and Social Medicine during this period of expansion, the Foundation in 1955 appropriated 154,900 rupees (approximately $34,100), in addition to an earlier grant of $4,800, the combined sums to be available through July 31, 1959.

OTHER GRANTS

University of the Philippines, Institute of Hygiene, Quezon City:

Exchange of faculty with the School of Hygiene and Public Health

of Johns Hopkins University, Baltimore, Maryland; $12,200 for a three-year period;

Dr. Hilario Lara, professor and dean; to observe new developments at the Johns Hopkins School of Hygiene and Public Health and other schools of public health in the United States; $3,500;

Johns Hopkins University, School of Hygiene and Public Health, Baltimore, Maryland: exchange of faculty with the Institute of Hygiene of the University of the Philippines, Quezon City; $12,000 for a three-year period;

The American-Korean Foundation, New York: salary of a Health Consultant to represent that foundation in the Republic of Korea; $10,000;

Christian Medical College, Ludhiana, India: promotion of preventive medicine teaching and research in the Department of Preventive Medicine; $8,500;

Tokyo University, Faculty of Medicine, Japan: studies of the health hazards of radioactive dusts and vapors; $6,500;

Dr. Harold A. Thomas, Jr., associate professor of sanitary engineering, Division of Applied Science, Harvard University, Cambridge, Massachusetts: to observe recent developments in sanitary and hydraulic engineering in Europe and Latin America; $5,500;

The Public Health Research Institute of The City of New York, Inc.: investigation of the effects of certain types of stress on susceptibility to tuberculosis; $5,000;

Christian Medical College, Vellore, India: Department of Public Health and Preventive Medicine; to promote teaching and research in preventive medicine and to develop village medical service, under the direction of Dr. LeRoy Allen; $4,800;

Dr. Jehangir Kaikhashru Adranvala, Department of Preventive and Social Medicine, B. J. Medical College, Poona, India: to observe methods of teaching preventive and social medicine in the United Kingdom, the United States, and Puerto Rico; $4,225;

Dr. Juan Antonio Montoya O., head, Pilot Health Center, Medical School, University of Valle, Cali, Colombia: to visit medical schools and medical care centers in South America and the United States; $2,750;

Professor Pieter Muntendam, director-general of public health, the Netherlands: to visit medical schools and schools of public health in Great Britain and the United States; $2,625;

Dr. Velimir B. Vouk, acting director, Institute of Industrial Hygiene, Yugoslav Academy of Sciences and Arts, Zagreb: to observe in the United States methods of research and training in industrial medicine and industrial hygiene; $2,625;

George Graham Don, lecturer in public health, School of Hygiene and Tropical Medicine, University of London, England: to observe the organization and practice of environmental sanitation in the United States; $2,575;

Dr. Ray Elbert Trussell, executive officer, School of Public Health and Administrative Medicine, Columbia University, New York: to visit centers of administrative medicine and public health in the United States; $1,500;

Stephen Moosai-Maharaj, health education officer, Department of Medical Services, Port-of-Spain, Trinidad: to visit centers of health education and disease prevention at federal and state levels in the United States; $1,000;

Dr. Kiyoshi Saito, head, Department of Maternal and Child Health, and vice-director, Institute of Public Health, Tokyo, Japan: to visit schools of public health in the United States; $925;

Dr. Charles Augustus Roberts, principal medical officer, Mental Health and Health Insurance Studies, Department of National Health and Welfare, Ottawa, Canada: to observe medical care programs in the United States; $600;

Government of India, New Delhi: The Hon. Rajkumari Amrit Kaur, Minister of Health; additional expenses of visits to medical centers and public health agencies in the United States, Canada, and Puerto Rico; $406;

Professor Franco Cambi, director, Institute of Sanitary Engineering, Institute of Technology, Milan, Italy: additional expenses of visits to sanitary engineering centers in the United States; $318.

Medical Care

UNIVERSITY OF NORTH CAROLINA

SURVEY OF MEDICAL PRACTICE

The Division of Health Affairs at the University of North Carolina in 1955 completed a field study of the family doctor as he practices in the villages, towns, and cities of the State. Through this study of a representative sample of general practitioners, an effort was made to identify some of the strengths and weaknesses of the system of medical education under which they were trained. The project was undertaken with a view to guiding the future development of the university's medical school.

One of the most important conclusions was that training in internal medicine for periods longer than three months, during either the internship or hospital residency of a young M.D., leads to better performance in his later years as a general practitioner. No other factor was found to be more consistently correlated with good performance. The Rockefeller Foundation made a grant of $80,600 in 1955 to enable the Division of Health Affairs to study further this finding and its significance for medical education, and to complete three related projects during the next two years.

OTHER GRANTS

University of California, Extension Division, Berkeley: to continue the development of a certificate course in medical care administration; $6,000.

Field Service

The field services in medical education and public health of The Rockefeller Foundation, conducted by a professional staff with headquarters in New York City and with five field offices in foreign countries around the world, will be supported in 1956 by an appropriation of $321,250.

The field offices are located in Mexico City, Mexico; Rio de Janeiro, Brazil; Santiago, Chile; New Delhi, India; and Tokyo, Japan.

The field offices are maintained to provide close association with developing medical and public health problems in the areas of special interest. The functions of the staff assigned to these field offices vary somewhat depending upon the character of specific projects, but all have certain functions in common. An area representative is able to give personal attention to major institutional and governmental projects with which The Rockefeller Foundation is associated, and he is in a position to serve as an informal adviser to the national authorities in many problems within the area of his personal competence if requested to do so. This somewhat intangible activity in some instances may exceed in ultimate value the grant program itself. The area representative also assists in the selection of qualified individuals for postgraduate study abroad under the well-defined terms of the Foundation's fellowship program.

General

INDIAN COUNCIL OF MEDICAL RESEARCH

NEW OFFICE BUILDING

Working closely with various government departments and with the Indian States, the Indian Council of Medical

Research in New Delhi exercises an advisory role in determining broad public health and scientific policies and in setting standards for medical research and education. It also awards research grants and fellowships, gives financial support to certain research laboratories, and performs a number of special services including support of scientific journals, publication of scientific reports, provision of reference and information services, and sponsorship of scientific meetings.

Matching sums available from Indian sources, The Rockefeller Foundation has appropriated 225,000 rupees (about $49,500) for a two-year period toward construction of an office building for the council. A building site has been donated by the All India Institute of Medical Sciences, to whose scientific, library, and other facilities the council will have ready access in its new location.

OTHER GRANTS

Fund for grants of amounts not exceeding $500 for allocation under the supervision of the Director; $5,000;

Dr. R. B. Corey, Department of Structural Chemistry, California Institute of Technology, Pasadena: to visit chemical laboratories in Europe and to attend conferences in Italy and Australia; $2,500.

BIOLOGICAL AND MEDICAL RESEARCH

AS HAS BEEN NOTED ELSEWHERE in this report, the past year saw a regrouping of the Foundation's interest in agriculture, public health and medicine, and their related biological sciences. One result was the consolidation of research activities in the fields of medicine, biology, and biochemistry. No organizational scheme can be completely logical, but there is some satisfaction in calling attention to the fact that the Foundation's long-standing interest in genetics is no longer split arbitrarily between the genetics of man and the genetics of lower animals. As a concrete example, the grants made last year to the Galton Laboratory in London and to the University of Naples for work in human genetics are listed side by side in this report with aid for population studies on fruit flies in Brazil.

Of more far-reaching significance perhaps is the fact that the Foundation's operating program for the investigation of virus diseases has now been brought into close association with grant-making activity in microbiology and the biochemistry of macromolecules. The operating program is currently devoted almost exclusively to a study of insect-borne virus diseases affecting man. Its general scope has been presented previously and recent progress is summarized in the following pages of this report. The work in the Foundation's own laboratories raises many questions which can only be solved by the application of specialized techniques beyond the scope of any single laboratory. For

example, there is increasing reason to believe that our understanding of the biology of viruses will be greatly enriched by advances in the knowledge of protein and nucleic acid structure. In previous years, the former Natural Sciences Division of the Foundation contributed a large share of its funds to laboratories engaged in such studies. Several current additions to this series of grants are briefly described in the following sections of this report. The recently reported fractionation and recombination of Tobacco Mosaic virus carried out independently during the past year in two laboratories receiving aid from the Foundation help to confirm the long-held hope that the biological and medical aspects of virus infections will ultimately find precise explanation in physico-chemical terms.

Grants to outside laboratories also serve to extend the Foundation's interest in virus into other fields which cannot conveniently be pursued by its own laboratory staff. Thus substantial help was given to the Johns Hopkins School of Hygiene for investigation of respiratory viruses. The general effects of these agents, the irritating personal inconvenience, the lost time, the not infrequent severe illness and occasional deaths, are all well known to everyone, but accurate knowledge of their characteristics as biological organisms has been curiously hard to come by. Part of the difficulty stems from the fact that only a few of them will grow satisfactorily in lower animals, but the recent rapid development of tissue culture methods offers a convenient alternative. For years the small number of competent virologists who possessed the courage to work on the problem at all were concerned with isolating the causative agents of the diseases they already knew about. Almost overnight, the tables have been turned and they are now in effect searching for the diseases which may be caused by the new viruses which turn up in their tissue cultures.

Another group of grants represents the continuing interest of the Foundation in what is termed the biological

basis of behavior. Broadly speaking, all the physical and chemical events in the body contribute in some way to an organism's behavior, but there is an important difference, at least in degree, between the investigation of processes that are largely inside the cells of the body and those larger adjustments which the whole organism makes to the environment around it. The analysis of the internal biological economy is concerned in large part with how organisms produce or convert energy; and the early development of biology proceeded hand in hand with the development of the physical sciences of mechanics and thermo-dynamics.

The biological study of behavior as the term is used here is concerned primarily with the patterning of the flow of information from the environment to the organism, its processing within the organism and the control of the responses ultimately elaborated as a result. Neurophysiologists are finding it helpful, for example, to familiarize themselves with the functioning of computer mechanisms. Psychologists are employing improved mathematical and physical techniques for the measurement of stimulus and response. Quite recently, it has begun to look as though electro-physiological signs can be found to correlate with the establishment of the psychologists' "conditioned reflex." There seems every reason to pursue on this level a Foundation interest in behavior which in the past was expressed in a long program of grants for the development of psychiatry and its related basic sciences, and in part underlies its continuing activity in the Humanities and Social Sciences.

The Biological Basis of Behavior

YERKES LABORATORIES OF PRIMATE BIOLOGY

The Yerkes Laboratories of Primate Biology in Orange Park, Florida, were established in 1925 as a division of Yale University under the direction of Dr. Robert M.

Yerkes. Since 1942 Harvard University has shared responsibility for the laboratories with Yale, but a new plan whereby neighboring Southern universities would assume responsibility is presently under consideration.

During the first seventeen years, Dr. Yerkes and his associates solved the many problems involved in breeding and rearing a captive colony of chimpanzees, and accumulated much valuable information on their growth, development, and adult behavior. Experimental work on monkeys, utilizing refined techniques of neurosurgery, anatomy, and experimental psychology, was introduced in 1942 as the result of the interest of the new director, Dr. Karl S. Lashley, in the cerebral physiology underlying the psychological functions of sensation, perception, and discrimination. The chimpanzee program was continued, however, by the associate director, Dr. Henry W. Nissen, and his group.

Dr. Nissen, who will succeed Dr. Lashley as director in 1956, and his co-workers will concentrate during the next few years on an experimental analysis of socio-emotional behavior, motivation, and psychopathology, utilizing the peculiar advantages of the chimpanzee for controlled studies of inferences derived from clinical observations of human beings. Previous observation of infants and children suggests that early environmental influences are critically important for the development not only of normal behavior, but of such fundamental psychological functions as perception, intelligence, and learning ability. During the next five years Dr. Nissen and his associates will test the behavior and psychological functions of several groups of chimpanzees reared in a series of differing but carefully controlled environments.

Foundation aid to the laboratories has totaled $1,232,000 since 1925. To help meet budgetary requirements during the next five years, The Rockefeller Foundation in 1955 appropriated $50,000 to the Yerkes Laboratories of Primate Biology.

DARTMOUTH COLLEGE

RESEARCH IN CELLULAR BIOLOGY

For several years Professor Roy P. Forster, director of the Department of Zoology at Dartmouth College, has been conducting research directed toward determining how secretory cells, especially those of the kidney, select and then excrete certain substances from the blood. The over-all results of this process have been studied and are reasonably well understood, but the details of the mechanisms by which individual cells utilize oxidative energy to move metallic ions and organic substances, like urea, across cell boundaries are still undetermined.

In 1952 The Rockefeller Foundation made a grant in aid of $10,000 to Dartmouth College toward a program of research in cellular physiology under Dr. Forster's direction, and another grant in aid of $10,000 in 1954 toward an interrelated program of research in cellular physiology under Dr. Forster and in microbiology under the direction of Dr. Raymond W. Barratt. In 1955 the Foundation gave Dartmouth College a four-year grant of $50,000 to continue this work.

KAROLINSKA INSTITUTE

RESEARCH IN NEUROPHYSIOLOGY

The Nobel Institute for Neurophysiology of the Karolinska Institute, directed by Professor Ragnar Granit, is not only a top-ranking research laboratory, but enjoys, as well, world eminence as a training center for senior research students. The Foundation has supported Professor Granit's work since 1931.

Professor Granit and his associates have been responsible for many contributions to present-day knowledge of the function of nervous receptors, and his long experience in

this general field has demonstrated the importance of combining investigations of peripheral sense organs with concomitant electrophysiological studies of the brain. He now plans to enlarge his research program and to participate more actively in a nation-wide expansion of basic brain research in relation to mental illness being developed by the Swedish National Research Council. For these purposes the laboratory requires the use of electroencephalographic equipment. In 1955 The Rockefeller Foundation appropriated 120,000 Swedish crowns (about $23,400) to the Karolinska Institute to provide Professor Granit with the equipment he needs.

UNIVERSITY OF BRUSSELS

RESEARCH IN NEUROPHYSIOLOGY

One of the outstanding laboratories in Europe for neurophysiological research is located at the University of Brussels under the direction of Professor Frederic Bremer. The laboratory is not only internationally renowned for its research, but is a training center for young neurophysiologists from all over the world.

Dr. Bremer, who for many years has occupied the chair of general pathology at the university, is aided by about ten visiting scientists and graduate students as well as by a permanent group of six investigators. His research program deals with almost every phase of the physiology of the nervous system, emphasizing the transmission of impulses along neural pathways and the effects of their experimental disconnection.

Grants made by The Rockefeller Foundation in support of Dr. Bremer's laboratory have totaled $66,650 since 1939. In 1955 the Foundation awarded a further grant of $30,000 to the University of Brussels to be used toward the expenses of the laboratory over the next five years.

UNIVERSITY OF MUNICH

STUDIES IN ANIMAL BEHAVIOR

In a long and distinguished career Professor Karl von Frisch, director of the Institute of Zoology of the University of Munich, has made spectacular contributions to scientific knowledge of the behavior of bees: the means they use to find food, the methods they utilize to communicate this information to the hive (the "language" of the bees), and their responses to sight, sound, and smell.

As a teacher and guide, Professor von Frisch directs at Munich a large group of younger workers who assist him in these studies and who are extending the range of the investigations. Among the newer projects are subjects such as the response of various arthropods to polarized light, the sense of smell in fish, the physiological chemistry of insect blood and insect foods, the orientation behavior of ants, the response of bats to high-frequency sounds, the psychological behavior of swarm fish, and the zoö-psychological questions involved in the behavior of voice-gifted crickets, grasshoppers, and other insects.

The Foundation's first grant to the Institute of Zoology was made in 1930 when Professor von Frisch was a member of the institute, and the first for his particular use was made in 1948. In 1955 a new award of $20,000 was made for his work, to be available over a three-year period.

OTHER GRANTS

University of California, Berkeley: support of the White Mountain Research Station; $15,000 for a three-year period;

University of Lund, Sweden: research in endocrinology, under the direction of Professor Georg Kahlson, Department of Physiology; 68,000 Swedish crowns (about $13,260) for a two-year period;

University of Edinburgh, Scotland:

Biochemical equipment for research in experimental biology in the Department of Zoology; $12,000 for a two-year period;

Dr. Henry Matthew Adam, Department of Pharmacology; to visit recognized centers of teaching and research in pharmacology in the United States; $900;

Tokyo University, Faculty of Medicine, Japan: tissue culture studies in the Department of Anatomy; $9,500;

University of London, University College, England: equipment for biological research in the Department of Zoology; $8,500;

National Center for Scientific Research, Paris, France: equipment for neurophysiological research; $7,500;

University of Paraná, Curitiba, Brazil: research on the bionomics of neotropical bees, under the general direction of Professor Jesus Moure, Department of Zoology; $7,000;

Dr. and Mrs. Julian Huxley, London, England: to visit the United States in connection with a proposed book on evolutionary biology; $6,250;

National Academy of Sciences, Washington, D. C.: expenses of foreign delegates invited to participate in a Symposium on Cytodifferentiation, held during the summer, 1956; $6,000;

Roscoe B. Jackson Memorial Laboratory, Bar Harbor, Maine: expenses of foreign scientists invited to participate in the Decennial Tissue Culture Conference, to be held during October, 1956; $5,000;

University of Toulouse, France: Department of Physiology; research in neurophysiology, under the direction of Agrégé Professor Yves Laporte; $4,000;

University of Michigan, Ann Arbor: Department of Zoology; program of research in population studies, under the direction of Dr. Lawrence B. Slobodkin; $3,600;

University of Bologna, Italy: Institute of Comparative Anatomy; equipment and supplies for research in embryology and histology, under the direction of Professors Pasquale Pasquini and Silvano Leghissa; $3,500;

University of Parma, Italy: equipment for physiological research, under the direction of Professor Bruno Schreiber, Institute of Zoology and Comparative Anatomy; $3,000;

University of the Republic, Montevideo, Uruguay:

Dr. Roberto Caldeyro-Barcia, Faculty of Medicine; to study advances in the field of obstetrical physiology in the United States and Canada; $3,000;

Dr. Washington Buno, Department of Histology and Embryology, Faculty of Medicine; to visit research centers in the United States; $2,250;

Professor Pedro Ferreira Berrutti, director, Institute of Pathological Anatomy, Faculty of Medicine; to study at Columbia University, New York; $1,125;

University of Cambridge, England:

Dr. William Albert Hugh Rushton, reader in physiology; to study methods used in the investigation of retinal and visual physiology in the United States and Canada; $2,675;

Professor Oliver L. Zangwill, head, Psychological Laboratory; to visit centers of neurological and psychological research in the United States; $2,250;

Dr. Alf Brodal, professor of anatomy, University of Oslo, Norway: to visit centers of neuroanatomical and neurophysiological research in the United States and Canada; $2,400.

General Biology

UNIVERSITY OF NAPLES

GENETICS OF MICROCYTHEMIA

The high incidence of microcythemia, an inherited blood disease, in certain areas of Italy constitutes a serious public health problem, and provides unusual opportunities for studies of importance to the development of human genetic theory.

Twenty per cent of the inhabitants of certain villages in the Po Valley carry the gene causing microcythemia. One marriage in every 25 will bring together two carriers of the gene, one in four of whose children will die of Cooley's anemia, the fatal form of the disease. The wide prevalence of microcythemia, and the fact that carriers of the gene are easily identifiable, make it a particularly favorable subject for theoretical studies.

Professor Giuseppi Montalenti of the University of Naples has conducted research on the genetics of microcythemia for many years. Certain important problems remain unsolved, one being the reasons for the peculiar geographical distribution of the gene. Professor Montalenti and his co-workers will extend and intensify surveys in order to obtain the data necessary for investigation of this and other questions. Extension of the surveys would allow case registers to be established in the villages, and provision is now being made to furnish genetic counseling to people in the affected areas.

In continued support of the studies on microcythemia being carried on at the University of Naples, The Rockefeller Foundation has made a supplementary grant of 23,500,000 lire (about $42,500), available during a three-year period.

UNIVERSITY OF LONDON

GALTON LABORATORY

Under the leadership of Dr. L. S. Penrose, the Galton Laboratory of the University of London has continued in the brilliant tradition established by its founder, Sir Francis Galton. Its present program involves research on all aspects of human genetics, and includes investigations in statistics, biochemical genetics, blood group serology, and chromosomal cytology.

Directed toward increasing understanding of the mechanism of human heredity, the research at the Galton Laboratory now follows three main lines. A major part of the program is in the rapidly developing field of biochemical genetics. Also in progress are studies of human gene linkage, and of such conditions as mongolism, psychoses, and malignant disease in which environmental effects play an important etiological part.

In 1955 The Rockefeller Foundation renewed its long-standing support of research at the Galton Laboratory with a grant of $30,000 to the University of London to be used toward research expenses during the next five years.

UNIVERSITY OF SÃO PAULO

POPULATION GENETICS

Since 1940 the Department of General Biology of the University of São Paulo has increasingly intensified and expanded its researches on population genetics. The Rockefeller Foundation has supported this program since 1942.

On two past occasions the department has sponsored collaborative research projects in which scientists and trainees from other Brazilian universities and from a number of other countries have participated. Another such cooperative effort on a broader scale was begun in June, 1955. Scientists at São Paulo, Rio de Janeiro, Pôrto Alegre, and

Curitiba in Brazil are carrying out coordinated investigations with the participation of investigators from at least five other countries. The several groups are holding periodic meetings and conducting ecological surveys in a number of distant, diversified regions of Brazil.

Toward the travel expenses of the scientists from Australia, Chile, Denmark, Italy, and the United States invited to participate in the program, The Rockefeller Foundation contributed $17,000 at the beginning of 1955.

UNIVERSITY OF SÃO PAULO

LABORATORY OF CELL PHYSIOLOGY

The Laboratory of Cell Physiology at the University of São Paulo, Brazil, has developed, under the direction of Professor Luis Carlos Junqueira, a former Foundation fellow, into one of the outstanding Latin American centers for research in histology and embryology, and has been officially selected as the Brazilian training center for teachers in this field.

The chief research interests of Dr. Junqueira and his associates are cell secretion of the pancreas and the submaxillary gland, nucleic acid chemistry, and the physiology of the mast-cell, a leucocyte especially numerous in leukemic blood and in foci of chronic inflammation. In the excellently equipped laboratory, the research program is being conducted with methods which include tracer techniques, chromatography, radioautography, microspectrometry, freezing-drying methods, and tissue culture. A Spinco preparative ultracentrifuge has been made available through a recent Foundation grant.

Foundation aid to Professor Junqueira's research has totaled $48,600 since 1948. As a contribution toward the expenses of the research program in the Laboratory of Cell Physiology during the next five years, The Rockefeller Foundation in 1955 appropriated $40,000 to the university.

OTHER GRANTS

Indian Cancer Research Centre, Bombay: operation and expansion of its laboratory for studies on human variation; $14,500 for a four-year period;

University of Parma, Italy: research in human genetics, under the direction of Acting Professor L. L. Cavalli-Sforza; $10,000;

University of Oslo, Institute of Genetics, Norway: establishment of a register of hereditary diseases, under the direction of Dr. Jan Mohr; 63,000 Norwegian crowns (about $9,450);

Yale University, New Haven, Connecticut: toward the development of research in pollen analysis; $5,000;

Smith College, Northampton, Massachusetts: research in genetics at the Genetics Experiment Station; $4,200;

Hospital Rosales, San Salvador, El Salvador: Department of Cardiology; equipment for the use of Dr. Maria Isabel Rodriguez; $3,500;

Long Island Biological Association, Cold Spring Harbor, New York: to enable five European and two Japanese geneticists to travel further in the United States during a visit to attend a Symposium on Quantitative Biology held at Cold Spring Harbor in June, 1955; $3,500;

Dr. Philip V. Tobias, Department of Anatomy, Medical School, University of Witwatersrand, Johannesburg, Union of South Africa: to visit research centers in the United States; $3,200;

University of Zagreb, Yugoslavia: Institute of Plant Breeding and Genetics; equipment for use in genetics research, under the direction of Professor Alois Tavcar; $3,000;

Research Institute of Biological Sciences, Montevideo, Uruguay: research in genetics, under the direction of Dr. Francisco Saez; $2,500;

University of Utrecht, Netherlands: equipment for research in genetics; $2,500;

University of Pavia, Italy: toward the expenses of maintaining a collection of *Musca domestica* in connection with the development in the Institute of Zoology of a new program for the genetical study of fly resistance to insecticides, under the direction of Assistant Professor R. Milani; 720,000 lire (about $1,300);

International Association for Plant Taxonomy, Utrecht, Netherlands: travel and living expenses of two American members of the Editorial Committee invited to attend meetings of the association during November, 1955; $1,300;

Professor Newton Freire-Maia, Faculty of Philosophy, University of Paraná, Curitiba, Brazil: to visit centers of genetics research in the United States; $700;

Dr. Robert W. Pennak, Department of Biology, University of Colorado, Boulder: to attend a meeting of the International Association of Theoretical and Applied Limnology, held in Helsinki, Finland, during the summer, 1956; $500.

Biochemistry

KAROLINSKA INSTITUTE

RESEARCH IN BIOCHEMISTRY

In 1955 the Foundation made two grants to the Karolinska Institute, Stockholm, for the support of research programs in biochemistry directed by Professor Einar Hammarsten and by Professor Hugo Theorell. These continue a series of grants for the researches of these two men which began in 1933.

For nearly two decades Professor Hammarsten has devoted a major portion of his research effort to the study of nucleotide synthesis, with increasing emphasis in recent years on the way the living cell builds up, accumulates, and utilizes the nucleic acids so intimately associated with its metabolic and reproductive activity. An expert in the uses

of isotope tracer techniques, he has made many distinguished contributions to his chosen field and to the broader area of protein synthesis. A grant of $29,000 in 1955 provides continuing support of his work for three years.

An appropriation of $45,000 was also made to the institute in further support over five years for the research in enzyme chemistry directed by Professor Theorell. Trained by Hammarsten and for many years his close research associate, Theorell was appointed head of the newly created Department of Biochemistry of the Medical Nobel Institute in 1938. In this excellent new laboratory he continued his studies of porphyrins and of haem-containing compounds, and was able to venture into new areas of research which have earned him an international reputation for his contributions on the chemistry and metabolism of cytochrome C and on the nature of various enzyme-coenzyme systems. In the autumn of 1955 he was awarded the Nobel prize in medicine.

UNIVERSITY OF LONDON

STRUCTURE OF NUCLEIC ACIDS

Since 1947 the Foundation has been giving financial support for the program of research in biophysics and biomolecular structure which is being carried on at King's College of the University of London under the direction of Professor J. T. Randall. Aimed at the application of the most exacting techniques of physics to such biological problems as cell division, the submicroscopic anatomy of the cell, the nature of plant and animal fibers, and the response of the living organism to its physical environment, this program has included in recent years a special emphasis on the structure and distribution of nucleic acids within the cell.

The research begun by Wilkins and his collaborators Stokes and Wilson at King's College several years ago on the X-ray crystal analysis of deoxypentose nucleic acid led

them to propose in early 1953 the probable helical nature of the nucleic acid molecule, a finding which was almost immediately confirmed by Watson and Crick at the Cavendish Laboratory in Cambridge. These latter investigators, in turn, then suggested that the structure of the salt of deoxyribose nucleic acid would follow the pattern of two helices coiled around the same axis. The importance of these contributions—to the chemist who is concerned with the structure of this basic molecule and the problems of protein synthesis in general, to the biologists who see it as the principal organic moiety within the cell nucleus, to the geneticist who looks upon it as possibly the chief "stuff" of inheritance—has stimulated scientists all over the world. To the group of biologists, biochemists, and physicians who are searching the kingdom of chemical compounds for suitable agents in cancer chemotherapy, these discoveries are of outstanding significance.

To enable Dr. Wilkins and his group to devote most of their research activities to the further study of nucleic acid structure, to make possible the continuing improvement of methods for the isolation, separation, and purification of these acids, and to provide financial aid for the laborious task of confirming by every conceivable means the facts and theories which have already been accumulated, The Rockefeller Foundation has made an additional grant of $35,000 over three years to the University of London for research on the structure of nucleic acids under the general supervision of Professor J. T. Randall and the immediate direction of Dr. M. H. F. Wilkins in the Department of Physics at King's College.

HASKINS LABORATORIES

RESEARCH IN BIOCHEMISTRY

At the Haskins Laboratories, in New York City, Dr. Seymour Hutner directs biochemical researches in which

special emphasis is placed on protozoa, in the belief that the protoplasm of certain protozoa is more like that of higher animals than the protoplasm of bacteria, and that therefore protozoa may furnish a more dependable guide to mammalian biochemistry.

The work of Dr. Hutner and his associates is concerned with the nutritional requirements of protozoa and other microorganisms. One topic under particularly active study involves an investigation of the common pathways in the biosynthesis of vitamin B_{12} and the chemical substances known as the purines.

Another recent development in the group's work which has attracted wide attention is a gratifying confirmation of the faith that microbiological scientists can eventually contribute to the food supply problem. Due to their researches, it now appears safe to say that in wide areas, and over wide intervals, most of the phytoplankton organisms at the base of the food pyramid in fresh water bodies and in the ocean require vitamins. These findings have led to a great increase in related activities in laboratories, especially in the United States and in England, concerned with marine biology.

Microbiology is presently of especial interest to The Rockefeller Foundation both because of its basic relationship to the program in experimental biology and because of its potential long-range relation to the problems of the world's food supply. In 1955 the Foundation appropriated $60,000 for the work of Dr. Hutner and his group, to be available over a three-year period.

UNIVERSITY OF UPPSALA

RESEARCH IN BIOCHEMISTRY

The development of more exact methods and equipment for the fractionating of organic substances is the central aim of the research program conducted at the Bio-

physical Institute of the University of Uppsala, Sweden, under the direction of Professor Arne Tiselius.

Other aspects of the work being done by Professor Tiselius and his associates include the study of biologically active peptides, the chemistry of bacteria and viruses, the use of zone electrophoresis and chromatographic methods for the isolation and characterization of peptides, polypeptides, protein fragments, and proteins. The significant results produced by this program have made the institute one of the outstanding study centers of Europe in the field of biochemical research and have brought increasing numbers of foreign investigators there for study.

In 1955 The Rockefeller Foundation made a grant of $60,000 to the institute toward the purchase of certain major items of equipment. This grant supplements a 1952 appropriation of $50,000, and the combined sums have been made available through September, 1960.

UNIVERSITY OF CAMBRIDGE AND THE UNIVERSITY OF BIRMINGHAM

RESEARCH IN BIOCHEMISTRY

Two British universities engaged in research on the chemistry and metabolism of proteins will each be furnished with an analytical ultracentrifuge through Foundation aid.

Under the leadership of Professor F. J. W. Roughton, the Department of Colloid Sciences at the University of Cambridge is studying proteins by the techniques of ultracentrifugation, electrophoresis, diffusion, osmotic pressure, and light scattering, with emphasis on the structure of gamma globulin antibody, the biophysics of various fractions of common grass pollens capable of inducing allergic reactions, and the behavior of bovine serum albumin and other proteins in solution.

At the University of Birmingham's Department of Experimental Pathology, Professor John Squire and his staff

are engaged in an extensive research program for the study of macromolecules, particularly proteins, their synthesis by plants, and their chemistry and metabolism as related to human physiology and to various disease processes.

To facilitate the finer separation of pure proteins from mixtures, however, an analytical ultracentrifuge has now become essential to the scientific faculties of both universities. To provide this equipment The Rockefeller Foundation, in 1955, awarded grants of $25,000 each to the University of Cambridge and the University of Birmingham.

NATIONAL UNIVERSITY OF MEXICO

INSTITUTE OF CHEMISTRY

An important research program of the Institute of Chemistry of the National University of Mexico concerns the chemistry of the natural products of Mexican plants and fruits and of several genera of cacti from Mexico and other countries which have been found to be good sources of pharmacologically active compounds. Part of this program is conducted in cooperation with the Department of Chemistry of Wayne University, Detroit, where the spectrometric analyses are made.

Early in 1954 the institute moved into excellent laboratories in the new University City where with quadrupled space this program and all the activities of the institute could be given increased impetus. Under the leadership of Dr. Alberto Sandoval, the director, the work of the institute has been extended by the addition of several specialized branches, and by the invitation of professors from foreign countries to work in the laboratories. The permanent staff has been augmented and provided with increased support.

The Rockefeller Foundation made its first grant to the institute in 1941. In 1955 $30,000 was appropriated for use during the year for the purchase of specialized research equipment, in consideration of provision by the university

of $20,000 for the same purposes and an increase in the operating budget of the institute.

COLUMBIA UNIVERSITY

ENZYME RESEARCH

Dr. John V. Taggart and his colleagues in the Department of Medicine at the College of Physicians and Surgeons of Columbia University have in the past eight years made important contributions to knowledge of the biochemistry of kidney function. They have done numerous *in vitro* experiments with kidney slices and whole organs to elucidate the transport mechanisms responsible for tubular excretion of various organic acids, to examine the role played by coenzyme A in this process, and to study the transport of sodium and potassium ions against concentration gradients in kidney tissue.

To help with this program of applying the techniques of enzymology to the problems of renal physiology, a five-year grant of $35,000 was made in 1955 to Columbia University for the use of Dr. Taggart and his associates.

PHILIP UNIVERSITY

INSTITUTE OF PHYSIOLOGICAL CHEMISTRY

Under the leadership of the director, Professor Theodor Bücher, the Institute of Physiological Chemistry of Philip University, Marburg, Germany, has embarked on two biochemical research programs centering on enzyme systems, their origin, duplication, and function.

One group, directed by Professor Bücher, is studying the comparative morphology of enzymes from a physical-chemical point of view. A second group, led by Professor Bücher's assistant, is investigating free nucleotides with energy-rich phosphate bonds, emphasizing such points as a

comparison of the nucleotide pattern of tissues, and the *in vivo* synthesis of nucleotides.

To enable Professor Bücher to purchase such items of apparatus as fraction collectors, a recording spectrophotometer, and a set of automatic counting equipment for isotope work, The Rockefeller Foundation has appropriated $22,000 to Philip University, available during a two-year period.

OTHER GRANTS

Queen's University of Belfast, Northern Ireland: equipment for use in the Department of Chemistry; $16,500 for a two-year period;

University of Adelaide, Australia: equipment for research in biochemistry, under the direction of Dr. Geoffrey M. Badger; $15,000 for a two-year period;

Federal Technical Institute, Zurich, Switzerland: research on the chemistry of physiologically important compounds, under the direction of Professor Vlado Prelog; $15,000 for a three-year period;

University of London, St. Mary's Hospital Medical School, England: equipment for research on protein metabolism and enzymology, under the direction of Professor Albert Neuberger, Department of Chemical Pathology; $13,000;

University of Bologna, Institute of Biochemistry, Italy: equipment and installation of facilities for microbial assay work, to be used in biochemical research under the direction of Professor Giovanni Moruzzi; $12,500;

University of Stockholm, Sweden: research in biochemistry at the Wenner-Gren Institute, under the direction of Dr. Gösta Ehrensvärd; $12,000 for a two-year period;

University of São Paulo, Faculty of Medicine, Brazil: research in enzyme chemistry in the Department of Physiological Chemistry, under the direction of Dr. Isaias Raw; $10,000;

Columbia University, College of Physicians and Surgeons, New York: expenses of a group of American scientists invited to attend the Second International Neurochemical Symposium, held in Europe during the summer, 1956; $10,000;

University of Edinburgh, Scotland: Department of Biochemistry; equipment for use under the direction of Professor G. F. Marrian; $7,500;

University of Pretoria, Union of South Africa: research in plant biochemistry, under the direction of Professor Margaretha G. Mes, Plant Physiological Research Institute; $7,500 for a two-year period;

Norwegian Radium Hospital, Oslo: equipment for biochemical research in the Norsk Hydro's Institute for Cancer Research; $7,500;

University of Paris, France: equipment for research in biochemistry in the Laboratory of Biological Chemistry of the Faculty of Sciences; $6,500;

University of Uppsala, Sweden: equipment for research on the chemistry of biologically active molecules, under the direction of Professor Einar Stenhagen, Institute of Medical Chemistry; $6,000;

Johns Hopkins University, Baltimore, Maryland: research in the field of protein biochemistry, by Professor Emeritus E. V. McCollum; $5,000;

National University of Mexico, Institute of Chemistry, Mexico City: to enable Dr. O. H. Wheeler to spend a second year in research on the physical-organic chemistry of natural products; $5,000;

Professor Rolf Huisgen, University of Munich, Germany: to observe research in organic chemistry in the United States; $3,600;

University of Oslo, Faculty of Sciences, Norway: research on the chemistry of nucleic acids, under the direction of Dr. Sören G. Laland; $2,000;

Professor Nathan Lifson, Department of Physiology, University of Minnesota, Minneapolis: to spend a sabbatical year at the University of Oxford, England, with Professor H. A. Krebs; $2,000;

University College of the West Indies, Jamaica:

Professor C. H. Hassall, Department of Chemistry; to visit the Institute of Chemistry of the National University of Mexico, and laboratories in the United States and Canada; $1,950;

Eccleston Alphonso Kean, lecturer in biochemistry, Department of Physiology; to observe research techniques on protein metabolism in the United States; $1,250;

Dr. W. E. van Heyningen, Sir William Dunn School of Pathology, University of Oxford, England: to visit biochemical research centers in the United States; $650;

University of Glasgow, Scotland: further contribution toward purchase of a time-lapse cinemicrograph apparatus for the use of Dr. John Paul, Department of Biochemistry; $300.

Biophysics

POLYTECHNIC INSTITUTE OF BROOKLYN

RESEARCH ON PROTEIN STRUCTURE

In 1950 Dr. David Harker of the Polytechnic Institute of Brooklyn, New York, began a long-range study of protein structure utilizing X-ray diffraction methods. In their research Dr. Harker and his group have concentrated on a single protein, ribonuclease, an enzyme involved in the formation of the essential cellular constituents known as nucleotides which form an important part of the mechanism for transmitting genetic information during the process of cell division.

The work of the Protein Structure Project falls into four categories: the design, construction, and use of apparatus for collecting X-ray diffraction data from crystalline proteins; the preparation and acquisition of protein crystals; the study of the chemical and physical properties of protein crystals; and the interpretation of the X-ray diffraction data obtained from protein crystals. A Geiger counter spec-

trometer for use with single crystals of proteins, and counting devices for determining the intensity of the refracted X-ray beams, are already in use.

A more fully automatic device is under construction and should be completed late in 1956. This instrument should be able to set the crystal to each required orientation in relation to the X-ray beam, measure the diffracted intensity, punch this information on an I.B.M. card, and then move on to the next orientation to repeat the process. Automation is of particular advantage because the preparation of three-dimensional maps of ribonuclease will requre observation of approximately ten crystals, with about 20,000 different X-ray reflections to be recorded in each case.

The excellent progress in the techniques for crystallizing ribonuclease and the advances expected in automation give promise that the group will be able to elucidate the structure of the protein within the next few years and eventually identify the position of all the atoms except those of hydrogen.

Foundation support for the Protein Structure Project since 1950 has totaled $266,115 through the period ending June, 1958. In 1955 The Rockefeller Foundation made a further grant of $65,000 to the Polytechnic Institute of Brooklyn for support of the project during the two-year period beginning July, 1958.

UNIVERSITY OF CAMBRIDGE AND THE ROYAL INSTITUTION OF GREAT BRITAIN

RESEARCH IN BIOPHYSICS

The oxygen-carrying protein molecule, hemoglobin, is of central interest in two collaborative research programs in England aided by The Rockefeller Foundation during 1955.

One program is carried on at the Davy Faraday Research Laboratory of the Royal Institution of Great Britain,

in London, under the direction of Sir Lawrence Bragg, Nobel laureate in physics. Dr. Max F. Perutz, in association with Dr. J. C. Kendrew, leads the second at the Cavendish Laboratory of the University of Cambridge.

Studies of the complex structure of hemoglobin by means of X-ray techniques, on which the two laboratories are engaged, were begun at the Cavendish Laboratory more than 16 years ago. Associated with the hemoglobin investigation are others on the structure of myoglobin and of nucleic acids, using a number of different techniques in addition to X-ray crystallography.

Foundation aid to the two laboratories has amounted to $32,470 since 1939 toward support of research in X-ray crystallography at the Cavendish Laboratory, and $15,000 in 1954 to the Royal Institution. In 1955 The Rockefeller Foundation made two further grants, totaling $70,300, to support research on the structure of protein molecules. The Davy Faraday Research Laboratory of the Royal Institution of Great Britain will receive $9,000 and £7,100 (about $30,300) for expenses during the next three years, and $40,000 for use over a four-year period will go to the Cavendish Laboratory at the University of Cambridge.

UNIVERSITY OF UPPSALA

RESEARCH IN BIOPHYSICS

Professor Torsten Teorell, biophysicist at the Institute of Physiology, University of Uppsala, Sweden, has worked for many years on the behavior of membranes, particularly from the standpoint of the chemical and electrical permeability forces involved in many kinds of cellular activity.

He and his colleagues are now conducting a series of studies involving a wide variety of physiological problems, all related to permeability, such as the mechanism of gastric juice secretion, transfer of electrolytes and transfer of

water, secretion and absorption in the renal tubule, and ion distribution across the envelope of the red blood cell.

For the purchase of equipment made necessary by recent advances in the application of radioactive isotopes to studies of the kind on which Professor Teorell is engaged, The Rockefeller Foundation has made an additional grant of $22,000 to the University of Uppsala for use during a two-year period. The first grant assisting Professor Teorell's research was made in 1936.

UNIVERSITY OF CAMBRIDGE

PHYSIOLOGICAL LABORATORY

A distinguished research program, long of interest to the Foundation, is that conducted by the Biophysics Research Group in the Department of Physiology headed by Sir Bryan H. C. Matthews at the University of Cambridge.

Directed by Professor Alan Hodgkin, the research group study problems of nervous conduction, the mechanism of muscular contraction and the relation between electrical and mechanical changes in muscle, and the active transport of cations across membranes in nerve and muscle fibers and in red cells. In their research the group employ all the techniques of electron microscopy and radioactive tracer measurement necessary for precise and exacting study.

Neurophysiological research at the University of Cambridge has received support from The Rockefeller Foundation since 1934. A further grant of £6,000 (about $18,000), made in 1955, will be used toward the purchase of equipment and other expenses of the Biophysics Research Group during the next five years.

OTHER GRANTS

University of São Paulo, Brazil:

Faculty of Medicine; research expenses in the Isotope Laboratory; $12,000 for a two-year period;

Polytechnic Institute; equipment and supplies for use in the Electron Microscopy Laboratory, under the direction of Mrs. Helena Souza Santos; $6,000;

Dr. Tede Eston, director, Isotope Laboratory, Faculty of Medicine; to visit Europe and the United States; $3,750;

Dr. George A. Edwards, Department of General Physiology, Faculty of Philosophy, Sciences, and Letters; to attend a Conference on Tissue Fine Structure and to visit research centers in the United States; $1,750;

University of Oslo, Norway: research in X-ray crystallography, under the direction of Professor Odd Hassel; $12,000 for a three-year period;

University of Rome, Italy: research in the X-ray crystallographic study of biologically significant molecules, under the direction of Professor Giordano Giacomello, Institute of Pharmaceutical Chemistry and Toxicology; 5,500,000 lire (about $10,000);

University of Texas, Southwestern Medical School, Dallas: research with and development of a monochromatic ultraviolet flying spot television microscope in the Department of Pathology; $10,000;

University of Oxford, England: research in crystallography, under the direction of Dr. Dorothy Crowfoot Hodgkin, Laboratory of Chemical Crystallography; £3,000 (about $9,000) for a three-year period;

University of Brazil, Rio de Janeiro: research expenses of the Institute of Biophysics, under the direction of Professor Carlos Chagas; $8,000 for a two-year period;

Dartmouth College, Hanover, New Hampshire: Dartmouth Summer Research Project on Artificial Intelligence; $7,500;

Massachusetts Institute of Technology, Cambridge: a program of research in X-ray crystallography, under the direction of Professor Martin Buerger; $4,000;

Research Institute of Biological Sciences, Montevideo, Uruguay: Dr.

Eduardo De Robertis; to study developments in the field of electron microscopy in the United States; $1,960;

Dr. Joseph Weiss, King's College, University of Durham, England: to visit laboratories of radiation chemistry in Europe; $1,700;

Dr. Keith Porter, Rockefeller Institute for Medical Research, New York: to direct a course on electron microscopy sponsored by UNESCO and the University of Brazil, held at Rio de Janeiro in mid-1955; $1,400;

Professor Arthur Wormall, St. Bartholomew's Hospital Medical College, London, England: to visit biophysical research centers in the United States; $700;

Professor Albert F. Frey-Wyssling, head, Botany Department, Swiss Federal Technical Institute, Zurich: to visit important centers of microscopy in the United States; $630.

Virology

JOHNS HOPKINS UNIVERSITY

SCHOOL OF HYGIENE AND PUBLIC HEALTH

The causes and the sometimes unpredictable behavior of such respiratory diseases as influenza, virus pneumonia, and bronchitis, among others, will be the subject of a five-year study at The Johns Hopkins School of Hygiene and Public Health under the direction of Dr. Winston Price. This study will include what appears to be a promising attack on the "common cold," although there is probably no such single entity and this term merely refers to milder forms of more serious respiratory infections.

Further knowledge of the natural history of respiratory diseases will not only throw light on the hitherto unclassified viruses which cause such infections, but should contribute toward understanding of the behavior of viruses in general during epidemics. Why, for instance, are some epi-

demics, apparently of the same disease, so much more severe than others? What causes the increase or decrease of virulence when a virus is passed through a series of animals or tissue culture? Why should a given virus lie low for months or years and then burst forth in a flaming epidemic?

To answer such questions, the School of Hygiene and Public Health has recently established a Division of Interepidemic Ecology under the leadership of Dr. Price, who also holds appointments in the Departments of Biochemistry and Epidemiology. Dr. Price and his team have made arrangements for studying four reasonably well-controlled populations: medical students and nurses; a small group of families in the outpatient department of the Hopkins hospital; another larger group of fishing families on an isolated island in Chesapeake Bay; and a series of patients confined permanently to a hospital for chronic diseases. The details of all the illnesses suffered by these individuals over a period of several years will be recorded. At regular intervals, even though there are no signs of illness, their nasopharyngeal washings and blood serum will be studied for the presence of viruses and changes in antibodies.

Several different viruses have already been isolated from patients with respiratory diseases and are being classified on the bases of their serological reactions and their behavior in living animals or in tissue culture. The best known are the influenza viruses. More recently described is the adenoidal-pharyngeal, conjunctival group. In many, if not most epidemics, however, the sufferers still fail to yield a virus which falls into either of these classifications. A great deal of work lies ahead before there can be anything like a complete picture of the causes of respiratory infections, but with recent advances in methods for handling viruses in the laboratory, Dr. Price and his team have high hopes of filling in important parts of the picture.

The School of Hygiene and Public Health has received since 1916 substantial support from The Rockefeller Foun-

dation for general development and specific projects. To help in this new study of respiratory diseases, the Foundation has given the school a five-year grant of $150,000.

QUEEN'S UNIVERSITY OF BELFAST

VIRUS RESEARCH

In 1955 a Department of Microbiology was created at the Queen's University of Belfast, Northern Ireland, under the direction of Professor G. W. A. Dick, a former Foundation fellow.

Professor Dick, who has done much work on the biology and natural history of viruses, is leading a research group in the investigation of such important but poorly understood aspects of viral biology as latency, life cycle, and infectivity, and the relation between viral and tumor activity. With the aid of the Regional Hospital Board, he also intends to establish a virus reference laboratory in order to study the epidemiology and ecology of virus diseases in Northern Ireland.

To enable Professor Dick to purchase such necessary equipment as a Spinco preparative ultracentrifuge and a refrigerated centrifuge, The Rockefeller Foundation has made a two-year grant of $21,000 to the Queen's University of Belfast for use in the Department of Microbiology.

THE VIRUS RESEARCH PROGRAM

The virus research program of The Rockefeller Foundation is concerned with the study of the insect or arthropod-borne virus infections of man and his domestic animals throughout the world. The program is a direct extension of the work followed by The Rockefeller Foundation in the study of yellow fever and, as such, calls for the cooperation of a number of scientific disciplines such as virology, entomology, and epidemiology.

Yellow fever was the first human infection shown to be caused by a virus. It was also the first virus disease shown to be transmitted by an arthropod. A second widespread human virus disease transmitted by an arthropod is dengue fever which, like yellow fever, is mosquito-borne. Phlebotomus fever, transmitted by small, biting flies commonly called sandflies, was the third virus disease of man in which an insect vector was incriminated.

The pioneer work on these three infections was limited as, in the absence of susceptible experimental animals, all work had to be done on human volunteers. The discovery that monkeys, and more particularly white mice, are susceptible to the virus of yellow fever may be taken as the beginning of the modern era of research on animal virus diseases. In quick succession, viruses were shown to be the causes of numerous infections of man and domestic animals. Many of these belong to the group of arthropod-borne virus diseases and include such well-known pathogenic agents as the causes of St. Louis encephalitis, Japanese B encephalitis, Western, Eastern, and Venezuelan equine encephalitis, and Russian encephalitis.

In addition, numerous virus strains were isolated from wild-caught mosquitoes, chiefly in tropical Africa and South America. Intensive study of these new agents revealed that they shared certain characteristics with some of the better-known viruses. Immunity surveys for antibodies in the blood of humans indicated that infection with some of the newly isolated agents was prevalent in the regions where the viruses were discovered. The similarity of many of these agents indicates, in all probability, the existence of groups of closely allied viruses rather than a large number of completely distinct agents. This observation was one of the determining factors which led The Rockefeller Foundation to undertake the present virus program.

It was soon realized that infection of man and his domestic animals was purely accidental. All the arthropod-

borne viruses probably exist in nature as agents of infection in wild animals. As man and his domestic animals are not essential for the maintenance of the viruses, their infection can occur only in regions where they can be bitten by arthropods, usually mosquitoes, which have become infected in nature. The primary virus cycles involve wild animals and birds. Thus, it has been clearly established that monkeys are of importance in the epidemiology of yellow fever. Various species of birds have been incriminated in a number of infections such as Eastern and Western equine encephalitis, Japanese B encephalitis, West Nile, and Sindbis infections. Thus, infection of man and his domestic animals is clearly related to the presence of virus cycles in nature. The virus program calls for the study of the distribution, incidence, reservoir hosts, and vectors of these infections of man in various parts of the world. It is basically a study of the infections of man and his domestic animals when exposed to various ecological environments.

To achieve the objective of the program, the work of The Rockefeller Foundation Virus Laboratories in New York is coordinated with that of field stations established in various parts of the world. At present five field laboratories are in operation. In the Far East a station at Poona, India, is operated jointly with the Indian Medical Research Council. In the Union of South Africa, at Johannesburg, a station is maintained in cooperation with the South African Institute for Medical Research. Two units are located in the South American region: one at Port-of-Spain, Trinidad, collaborative with the Government of Trinidad and the Colonial Medical Service; the other at Belém, Brazil, operated in conjunction with the Serviço Especiales de Saúde Pública. In Berkeley, California, a unit is working in cooperation with the State Department of Health. For the virus research program the Foundation made appropriations totaling $786,800 in 1955.

Of cardinal importance to the virus program is the

classification of the agents. The greatest aid has come from the recently developed haemagglutination techniques. It has been found that by the use of appropriate methods, many of these viruses can be made to clump or agglutinate chick red blood cells. An immune serum has the property of inhibiting agglutination (HI) of chick cells to a marked degree when an homologous virus is used, or to a lesser extent when an immunologically related agent is used. By this means two major groups of allied agents can be separated. To group A belong Eastern, Western, and Venezuelan equine encephalitis, Sindbis, Semliki Forest, Chikungunya, and Mayaro viruses. The last two are recently discovered agents of unusual interest.

During the epidemic of yellow fever in Trinidad in 1954 two viruses which were definitely not yellow fever virus were isolated from febrile humans. Haemagglutinating antigens could be readily prepared, and inhibition tests clearly revealed that the two agents were probably identical and belonged to group A. This virus was given the name Mayaro after the region in Trinidad where it was discovered. The Mayaro virus is clearly a new agent and is closely related to the Semliki Forest virus and the Chikungunya virus. Shortly after the immunological characteristics of the Mayaro virus had been established, an extensive epidemic among quarry workers occurred in Guamá, near Belém. During this epidemic six strains of virus were isolated from the blood of patients. These were identified as strains of Mayaro. The illness of the six patients was of short duration, the fever lasting from two to five days. There were no deaths. The infections were, in all probability, acquired by close contact with the Amazonian rain forest.

Previous studies in the Amazon Valley had shown that protective antibodies to the Semliki Forest virus were prevalent in the blood of humans. The close immunological relationship between this virus and the newly discovered May-

aro agent suggested that the results obtained with the Semliki virus were, in fact, due not to infection with this agent but to infection with the closely related Mayaro virus. That this hypothesis is, in all probability, correct, was shown by the fact that the individuals from whom Mayaro virus was isolated developed neutralizing antibodies to the Semliki Forest virus. We are, therefore, justified in interpreting the results of the protection test survey with the Semliki virus as giving us an indication of the extent of Mayaro infection in the Amazon Valley. This survey has been made at the beginning of the studies in the Amazon Valley in order to obtain information as to the prevalence of human infections with arthropod-borne virus diseases. The results of this survey showed that antibodies to the Semliki virus were very prevalent and widespread throughout the entire Amazon Valley. These findings thus clearly suggest that infection with the Mayaro virus is very widespread in tropical America.

Chikungunya virus is another new group A virus. During 1952 an extensive epidemic occurred in the Makonde region of Southern Tanganyika. This epidemic was studied and described by workers from the Virus Research Institute in Entebbe, Uganda. The clinical aspects of the disease were very similar to those of dengue. During the epidemic several strains of virus were isolated from the blood of patients. One of these strains was sent to New York for study by Dr. A. J. Haddow, director of the Entebbe laboratories. An haemagglutinating antigen was readily prepared. Haemagglutination-inhibition tests showed that this agent — the Chikungunya virus—was a member of group A and clearly a new virus. Its closest relations are the Semliki Forest virus and the recently discovered Mayaro virus. These findings are of unusual interest. The available evidence suggests that the Chikungunya virus was the cause of this epidemic as it was isolated from the blood of patients. Clinically, the disease resembled dengue with the typical fever and skin

rash. It will be recalled that a recent epidemic in Israel, with many of the clinical features of dengue, was shown to be caused by the West Nile virus. It is apparent that in making future diagnoses of dengue, great caution will have to be used until the etiological agent has been established. These findings also cast serious doubt upon past diagnoses of dengue, not only in East Africa but in other parts of the world as well.

A certain amount of information was obtained during the year concerning the other group A viruses. It has been definitely established that both the Venezuelan and Eastern equine encephalitis viruses are present in the Amazon Valley. Twelve strains have been identified as Venezuelan equine encephalitis virus. Three of these were isolated from man, five from sentinel monkeys, and four from mosquitoes. The fact that this virus is active in the Amazon Valley confirms the results of the protection tests of survey sera previously obtained. Two viruses which were isolated from the blood of sentinel monkeys were identified as strains of Eastern equine encephalitis. The presence of Eastern equine encephalitis virus infection in the Amazon Valley was suspected from the results of previous protection test surveys with human sera.

In India five strains of virus isolated from such diverse sources as bird spleens, Culex mosquitoes, and bird mites have been identified as strains of Sindbis virus. This virus was discovered in Egypt where it has been repeatedly isolated from Culex mosquitoes. Subsequently, this agent was found in South Africa. It evidently has a very wide distribution, but its importance as a cause of human infection is not known.

It has been shown that birds of several species are involved in the maintenance of Western equine encephalitis in nature. This infection is very common in the western parts of the United States, and the disease is highly seasonal in prevalence due to the great variation in numbers of the

mosquito vector, *Culex tarsalis*. It is not known by what means this virus overwinters, but it is possible that infected hibernating mosquitoes are involved. However, it may also be that birds migrating from the south introduce the virus each year. This possibility is being studied in California with particular reference to swallows. The isolation of Western equine encephalitis from barn swallows collected as nestlings shows that these birds are infected in nature and that they are one of the natural hosts. The Western equine encephalitis virus was isolated in August during the second breeding cycle but was not found in the first batch of nestlings after the birds arrived from the south.

The second group of viruses which has been separated by means of the haemagglutination techniques is group B. Here belong such important viruses as those that cause yellow fever, dengue, St. Louis encephalitis, Japanese B encephalitis, and Russian encephalitis. In addition, many of the more recently isolated agents belong in this group. In Africa, during the Rockefeller Foundation studies on the epidemiology of yellow fever, four agents, West Nile, Zika, Uganda S, and Ntaya were isolated and shown subsequently to belong to this group.

During 1955 two new group B viruses, which are at present unnamed, were discovered in Africa. Both were isolated in Tongaland in northern Zululand: one, TAR 94, from a pool of *Taeniorhynichus uniformis* mosquitoes; the other, H 177, from the blood of a mosquito catcher who was suffering from a febrile disease at the time. What is apparently the same agent as H 177 was also isolated from *Aedes circumluteolus* mosquitoes. Laboratory studies have shown that H 177 can be readily transmitted by the bite of the *A. circumluteolus*.

Preliminary surveys of immunity to this agent among humans and animals in Tongaland indicate that infection with H 177 is very prevalent. It is clear that this virus very frequently attacks domestic animals, especially cattle, goats,

dogs, and donkeys. Results of studies by scientists at the Onderstepoort Veterinary Research Institute indicate that the H 177 virus is, in all probability, identical with an agent which had recently been isolated from sheep in the Orange Free State during an epidemic of a disease causing abortion. It is apparent that infection with this newly discovered agent is very widespread in the Union of South Africa and that it is of economic importance. Very little is known concerning the role TAR 94 plays as a cause of disease in man or domestic animals, but the results of immunity surveys indicate that infection with this virus is obviously far less prevalent in Tongaland than infection with the H 177 virus.

There are indications that a subgroup of very closely related agents can be separated in the B group of viruses. For example, the viruses of St. Louis encephalitis, Japanese B encephalitis, West Nile, and Ilhéus are very close relatives, and infections with these occur over a large portion of the world. Although infections with the virus of St. Louis encephalitis were thought to be predominantly confined to the North American continent, it has been shown that this agent is probably also present in Trinidad. This conclusion is based on the results of antibody surveys in humans, as well as on the isolation from mosquitoes of a virus which appears to be a strain of St. Louis virus.

In portions of Trinidad human infection with the Ilhéus virus is very prevalent. Analysis of immunity surveys indicates that the infection is acquired by intimate contact with the forest. In spite of intensive work, however, no Ilhéus virus has been isolated from the blood of humans suffering from febrile diseases even though they live in the forested regions where the immunity surveys show infection to be very prevalent. That an infection with this virus can cause severe illness was demonstrated by the isolation of this agent from the blood of a patient in Port-of-Spain suffering from a severe encephalitis. It is believed that this

patient, though a resident of the city, did not acquire her infection there, as a short while previous to her illness she had visited the forested region of the island.

Japanese B encephalitis, as its name indicates, was discovered in Japan. Subsequent work showed that infection with this agent is very widespread in the East. Evidence has been obtained that this virus occurs in Korea, China, Malaya, and Borneo. In recent years a virus very closely related to Japanese B has been shown to be the cause of infection in Australia.

In the preliminary blood surveys for immunity to arthropod-borne viruses in India, evidence was obtained that possibly Japanese B virus was present there. During the past year the attention of the workers in the Virus Research Centre in Poona was drawn to an epidemic in which there were severe cases of encephalitis in children, with some deaths, in the North Arcot region of Madras State. Investigation proved that the cases, predominantly rural, were occurring over a very wide area. Laboratory studies with the blood from convalescent cases showed that, in all probability, the cause of this severe disease was the virus of Japanese B encephalitis. This finding extends the known distribution of Japanese B to the Indian sub-continent. It is thought that the epidemic may have been related to an unusual prevalence of mosquitoes due to exceptionally heavy rainfall. On purely epidemiological grounds, it is suspected that humans acquired their infection by the bite of *Culex vishnui*. This mosquito is closely related to *Culex tritaeniorhynchus*, the vector of Japanese B in Japan, and to *Culex gelidus* which has been incriminated in Malaya.

All these studies, extending over many years, lead to the conclusion that the arthropod-borne viruses are all primarily the agents of infection in wild animals. More and more evidence is accumulating that birds play an important part in the maintenance of infection in nature. However, the possible role of other animals is continuously being

investigated. In California bats of various species are being studied. During these investigations three strains of virus were isolated from the salivary glands of *Tadaria mexicana*, the Mexican freetail bat. It was suspected at first that these viruses were strains of rabies, as this agent has been previously found in the salivary glands of insectivorous bats in the United States. Conclusive evidence was obtained that at least one of these bat viruses was a new member of group B. This strain is apparently a new agent with some affinity to the St. Louis encephalitis virus and is the second group B virus to be discovered in North America. No evidence has been obtained concerning the distribution or incidence of this unusually interesting virus, nor is it known whether it can cause human infections.

In planning work in a region, the demonstration of the presence of arthropod-borne viral agents is approached first by the indirect method of an antibody survey on the human population. This survey shows the presence or absence of past infection with known viruses or others having certain antigenic relationships with the test viruses. The presence of viruses distinct from the known agents remains undiscovered by this method.

The search for the viral agents themselves is undertaken in several ways. One of the quickest methods of demonstrating their presence in a region is the examination at frequent and regular intervals of blood samples from susceptible animals recently introduced into the region. The Belém Virus Laboratory was fortunate in finding a source of nonimmune and susceptible monkeys on an island off the coast of Brazil. A number of these animals have been stationed at selected spots in the forest and bled for virus isolation at regular intervals. By this means the presence of both Venezuelan and Eastern equine encephalomyelitis viruses was first demonstrated in the Amazon forest. In addition to these well-known agents, numerous other viral strains have been isolated. The study of these is not com-

plete, but it is already obvious that at least two new closely related viral agents have been discovered. By means of the haemagglutination techniques it has been shown that these two, the Oriboca and Marituba viruses, bear no relationship to either the A or B group of arthropod-borne viruses. That human infections with the Oriboca virus occur has been demonstrated conclusively by the isolation of this agent from man. Moreover, protection tests in mice have shown that human immunity to the Oriboca agent is fairly prevalent in the Amazon region.

No immunity surveys have yet been undertaken with the Marituba virus and, hence, its importance as a cause of human infections is unknown. However, indubitable evidence that this virus can infect man has been obtained by the isolation of this agent from a human suffering from a febrile illness.

One of the most productive methods for determining the presence of a virus in a region is the systematic collection of mosquitoes and the isolation of virus by the inoculation of mice. This is routinely used in California during the mosquito season to determine the presence or absence of both the St. Louis and Western equine encephalitis viruses. These agents can often be isolated from *Culex tarsalis* mosquitoes even in the absence of manifest cases of infection in man. The productivity of this method is shown by the large number of virus strains isolated in various parts of the world. During one month's field study in Tongaland, South Africa, for example, 16 strains of virus were isolated. Thirteen of these are either identical with or very closely related to the previously described viruses, Bwamba, Bunyamwera, and Rift Valley Fever. The remaining three are apparently new. As mentioned above, two of these are new group B members.

In Trinidad 31 virus strains were isolated from mosquitoes during the past year. None of these agents has yet been identified. In a similar manner, the workers in Belém

have isolated 14 strains of virus; four of these were found to be yellow fever and four Venezuelan equine encephalitis. The nature of the remainder has not yet been determined.

OTHER GRANTS

Long Island Biological Association, Cold Spring Harbor, New York: development of a summer program for research on viruses; $5,000;

Dr. Robley C. Williams, Virus Laboratory, University of California, Berkeley: to study at the Virus Research Unit, Cambridge, England, and to visit laboratories in Europe; $4,500;

University of Wisconsin, Medical School, Madison: Symposium on Latency and Masking in Viral and Rickettsial Infections, held during August, 1956; $4,500;

Institute of Public Health, Tokyo, Japan: viral studies in the Department of Microbiology; $4,400;

Dr. Oscar Avendano, Bacteriological Institute, Santiago, Chile: to visit virus research centers in the United States; $3,400;

Dr. M. G. Raja Varma, Mavelikara, India: to visit virus research centers in the United States and Cairo, Egypt; $3,300;

Dr. Frits Dekking, conservator in bacteriology and public health, University of Amsterdam, Netherlands: to visit virus research centers in the United States and Canada; $2,500;

Dr. James Henry Hale, professor of bacteriology, Medical Faculty, University of Malaya, Singapore: to visit virus research centers in the United States; $1,350;

Dr. Khorshed Pavri, Bombay, India: to continue for three months her study of basic virus techniques at the New York State Department of Health, Albany; $1,350;

Miss Patricia Elsie Lee, Queensland Institute of Medical Research, Brisbane, Australia: to visit centers of encephalitis research in the United States; $1,300;

Dr. Jean Vieuchange, laboratory chief, Pasteur Institute, Paris, France: to observe recent developments in virus research in the United States; $682.

Special Projects

SMALLER GRANTS

Congress for Cultural Freedom, Paris, France: support of the program of its Science and Freedom Committee; $12,000 for a two-year period;

Kyoto University, Japan: support of the basic research program of the Research Institute for Fundamental Physics; $5,000;

Fund for grants of amounts not exceeding $500 for allocation under the supervision of the Director; $4,100;

Massachusetts Institute of Technology, Cambridge, Massachusetts: support of a journal devoted to the translation of languages with the aid of machines; $3,000;

University of Brazil, Rio de Janeiro: support of the teaching and research programs of Professor Hilgard O'Reilly Sternberg, Research Center of Brazilian Geography; $2,400;

Lionel J. F. Brimble, joint editor, *Nature*, London, England: to confer with editors and authors of scientific publications in the United States; $1,750;

Dr. Frank A. Beach, Department of Psychology, Yale University, New Haven, Connecticut: to visit European research centers; $1,000.

AGRICULTURE

DURING 1955 the agricultural program of The Rockefeller Foundation, which began with a single staff member in Mexico in 1943, became one of the five major areas of Foundation interest as a result of action by the Board of Trustees. The program in agriculture consists of operating programs, grants in aid, appropriations, and training activities directed toward improving world food supplies through international efforts in agricultural research and education.

The operating activities of the Foundation in agriculture are concentrated in Latin America with centers in Mexico, Colombia, and Chile, and extended efforts in Central America and numerous countries in South America. These have all now become essentially a single operation as a result of the similarity of the problems involved in the improvement of basic food crops, the free exchange of information and plant and animal materials, and the regular exchange of personnel, for both the purposes of training and of exchange of information and experience. This Latin American operation has recently become even more international in scope as increasing numbers of scientists from other areas have visited the several research centers in Latin America and have received information and genetic materials for trial in their own countries. Similarly, Rockefeller Foundation personnel have visited a number of countries in Asia and Europe with resultant mutual benefits. The extension of operating activities into the Orient is now being studied by the appropriate officers of the Foundation.

The training program in agriculture is considered to be of major importance. Experience has taught that it is not always possible or desirable to limit training activities to postdoctoral or even postgraduate levels, although these do play a major role in the entire training program. On occasion it is necessary to provide training opportunities for young agricultural scientists at undergraduate levels where this is an obvious need in the area under consideration.

At the present time, the training program in agriculture includes scholarships and fellowships for formal training in the United States or abroad, in-service scholarship appointments in connection with operating centers in Latin America, and one inter-area training program involving Indonesia and the Philippine Islands. Trainees have been drawn from all the countries of Latin America, several from Europe, and a considerable number from India, Japan, Thailand, and the Philippine Islands. In all cases appointees are trained for specific and guaranteed responsibilities in their own countries. These include positions in agricultural institutions as professors and investigators attacking fundamental problems of crop production through biochemistry, genetics, cytology, biophysics, plant pathology, microbiology, entomology, or other related sciences.

The grants and appropriations in agriculture are directed principally toward the support of fundamental research projects of potential long-range significance to agricultural production. These may be conventional in nature in that they support genetics, parasitology, veterinary science, agricultural education, soil science, or agricultural chemistry; or they may be nonconventional in that they aid research on the utilization of solar energy for agricultural purposes, all phases of water research with agricultural implications, marine resources as potential food supplies, and so on. Some grants have been made in connection with operating programs to supplement their research activities by the support of collateral programs in agricultural extension.

In all these activities the focus is on the improvement of the quality and quantity of world food supplies. Thus, such crops as corn, wheat, rice, potatoes, beans, vegetables, and forages have been selected for major emphasis along with certain phases of animal science including poultry and dairy and beef cattle. Each activity of the entire program, whether it be in the area of operation or training or grants, is directly or indirectly designed to contribute to this overall objective. It is believed that the operating programs themselves can make significant contributions through research to the improvement of food crops in those areas in which they are located. In the long run, however, the most important results will accrue from the activities of those individuals who have had various types of training in association with the Foundation's program in agriculture, and from the results of fundamental research supported under this program. Already past trainees are assuming leadership in fundamental research projects of importance to their own countries and in the development of departments and institutions to carry on significant research activities and the training of future leaders in agricultural science.

Aid to Research and Teaching

LOUISIANA STATE UNIVERSITY

RICE RESEARCH CENTER

Louisiana State University is one of the few institutions in this country where research in rice has been a longtime major interest. Increasing numbers of foreign specialists are coming regularly to Baton Rouge for study and consultation and, as a result, the institution has gained international significance for work in this field.

The University's experimental farm at Crowley, Louisiana, is one of the leading rice stations in the world. Work

is currently being done on the problems of mechanization and management, fertility, varietal improvement, and disease and pest control.

In order to make the Crowley substation more conveniently and efficiently available for training and service on a world-wide basis, the university will expand the farm's program. New equipment and personnel will be added, better facilities will be provided for the visiting technical personnel, and the scope of the research program will be broadened. The expansion will establish Crowley as an international training center for rice specialists, particularly for those from foreign countries where rice is the staple food. The center will be under the general direction of Dr. J. N. Efferson, head of the university's experiment station.

To aid in setting up this facility, The Rockefeller Foundation has appropriated $140,000 to Louisiana State University, the funds to be available over a five-year period.

UNIVERSITY OF THE PHILIPPINES

COLLEGE OF AGRICULTURE

The College of Agriculture of the University of the Philippines is a center of agricultural education not only for the Philippines, but also for other countries of the Orient. It is helping to produce a growing corps of agricultural scientists in a part of the world where they are vitally needed.

Located at Los Baños, Laguna, the college has an arrangement with Cornell University, Ithaca, New York, for the exchange of scientists in research and teaching positions. The recent and rapid growth of the student body, however, which currently numbers more than 3,000 students in residence, has made increased demands on faculty, laboratories, and other facilities.

In recognition of the need and opportunity, The Rockefeller Foundation has appropriated $40,000 to the Uni-

versity of the Philippines for the purchase of laboratory equipment and teaching materials for the College of Agriculture.

UNIVERSITY OF THE PHILIPPINES

AGRICULTURAL SCHOLARSHIPS

The first attempt to enable students from one Southeast Asian country to study in another country of the same region has been inaugurated with the establishment of twenty scholarships for Indonesian agricultural students at the University of the Philippines.

The purpose of these scholarships is to increase the number of trained agricultural scientists for research, teaching, and extension posts in the Ministry of Agriculture and at such institutions as the Faculty of Agriculture of the University of Indonesia at Bogor and its counterpart at Jogjakarta. The awards, which will provide travel, tuition, and living expenses for four years, will offer training to the students in an area where agricultural problems and practices are in large measure similar to those in Indonesia.

A two-year grant of $120,000, awarded in 1955 by The Rockefeller Foundation to the University of the Philippines, will finance the program.

UNIVERSITY OF SÃO PAULO

SCHOOL OF AGRICULTURE

In view of the growing importance of increased agricultural production in the economy of Brazil, the School of Agriculture of the University of São Paulo, Brazil, has been carrying on research directed towards the solution of basic agricultural problems in the State of São Paulo and elsewhere in the country.

Recognized as one of the strongest institutions for agricultural education in Brazil, the university has good facilities, a large farm, and a full-time staff of professors.

Projects currently in progress represent ten different departments and include subjects such as radioisotope and biochemical studies of a number of microorganisms of agricultural importance, the chemistry of the soils of the São Paulo region, genetic studies directed toward the improvement of food crops, and climatological factors of agricultural production.

For the expansion of the research program and the purchase of equipment, The Rockefeller Foundation in 1955 made a $120,000 grant to the University of São Paulo for use during a three-year period.

GAMMON INSTITUTE, BRAZIL

COLLEGE OF AGRICULTURE

The College of Agriculture at the Gammon Institute, Minas Gerais, Brazil, is a successful demonstration of the importance of private institutions in the service of Brazilian agriculture.

Respected throughout the country for the quality of its graduates, the agricultural school is located in a rural area, thereby attracting many students from farm families. The students participate directly in all phases of agricultural production as a part of their college experience and are prepared in both theory and practice. It is this combination which makes graduates of the school widely appreciated in Brazil.

In continued support of increased activities in research and for the purchase of new equipment, The Rockefeller Foundation has made a five-year grant of $60,000 to the Gammon Institute.

AGRONOMY INSTITUTE OF THE SOUTH

RESEARCH IN CEREAL IMPROVEMENT

Location in the southeastern part of Brazil, an area especially adapted to the production of cereal crops, places

the Agronomy Institute of the South at Pelotas in an excellent position to study how these key crops may be improved.

The institute's good basic equipment, its land, and its well-trained staff are further important assets. In addition to its central station at Pelotas, it has five substations situated in the several southern states of Brazil. It is a federal institution.

The institute now plans to expand and intensify its wheat improvement projects and to initiate a broad program of corn improvement. It will cooperate in this with the several state-supported experiment stations of its region, with the federal experiment stations of the Ministry of Agriculture, and with similar programs in other Latin American countries. The Ministry has designated Dr. Ady Raul da Silva of Pelotas as coordinator for wheat improvement throughout Brazil, and Dr. Americo Groszmann of the Central Experiment Station in Rio de Janeiro as coordinator for corn improvement.

Pelotas is strategically located with reference to certain wheat- and corn-growing areas in Uruguay, Argentina, and Chile, and the development of research projects on cereal crop improvement at the institute has for this reason a special regional significance, in addition to a very considerable national significance. The institute has been aided in its new program by a three-year grant of $60,000 from The Rockefeller Foundation.

NATIONAL INSTITUTE OF AGRICULTURAL SCIENCES, JAPAN

The National Institute of Agricultural Sciences in Tokyo, Japan, which has for some time conducted research on local food crops and livestock, now plans to expand its program into the more fundamental aspects of the production of rice, wheat, fruits, and vegetables, and, to some extent, into the animal sciences.

As Japan's principal agricultural center, the institute commands the services of the country's leading agricultural scientists, and the results of their work may well have great significance for similar areas in other regions.

To aid the program, The Rockefeller Foundation has appropriated $50,000 to the National Institute of Agricultural Sciences for the purchase of equipment during the next two years.

RURAL UNIVERSITY OF THE STATE OF MINAS GERAIS

SCHOOL OF VETERINARY MEDICINE

The Rural University of the State of Minas Gerais, Brazil, received renewed assistance from The Rockefeller Foundation last year for laboratory equipment and supplies for its School of Veterinary Medicine. Previously, in 1952, $30,000 was given to the university for the joint use of its Schools of Veterinary Medicine and Agriculture. New buildings were under construction for both schools at that time.

Additions have been made to the staff of the School of Veterinary Medicine, and its facilities, both for the training of students and for the research activities of the staff, are still being increased. Approximately 2,500,000 cruzeiros have been pledged to the school from Brazilian sources for the conversion of exhibition buildings into laboratories and for other basic needs during 1956.

The Foundation has appropriated $50,000 to the Rural University to supplement Brazilian aid during the period ending November 1, 1957.

GOVERNMENT OF UTTAR PRADESH, INDIA

HORTICULTURAL RESEARCH STATION

In an attempt to vary and improve the local diet, the Horticultural Research Station in Uttar Pradesh, India, has been conducting active research on a number of tropical and

subtropical fruits indigenous to that part of the country. The station is located in an area of approximately 1,500,000 acres planted with fruit trees, and the area is increasing annually.

Under the direction of Dr. L. B. Singh, the research staff has already found ways of increasing the yields of various fruits through management techniques, disease and pest control, and nutrition. Because of the lack of refrigeration, however, the consumption of the fruit remains seasonal and the prices fluctuate violently. To combat this situation, Dr. Singh and his associates are planning an intensive study of the problems of refrigeration and preservation and of the production of economically valuable by-products.

A two-year grant of $47,000 from The Rockefeller Foundation will be used for the purchase of additional laboratory and refrigeration equipment and modern library materials.

SOUTH PACIFIC COMMISSION

CONTROL OF THE RHINOCEROS BEETLE

The Rhinoceros beetle is a serious pest of the economic crop plants of the Central and Southern Pacific Islands—the coconut and other palms, sugar cane, and pineapple. It poses a serious threat especially to the coconut crop, the major subsistence crop of the region and the source of its most important export product, copra. The beetle has been known for many years in southern India, Ceylon, Burma, and other Southeast Asian territories, and was first introduced into the island area of the South Pacific approximately forty years ago.

The ravages of the beetle have stimulated many types of control campaigns employing both chemical and mechanical methods. None of these has proven satisfactory. The South Pacific Commission, with headquarters at Noumea, New Caledonia, is now initiating a coordinated interna-

tional research project which will attempt to lay the groundwork for an effective program of biological control throughout the island area.

Dr. Paul Surany of the State Natural History Survey of Illinois will direct research on the parasites and diseases of the coconut Rhinoceros beetle. The Bernice P. Bishop Museum of Honolulu and the Pacific Science Board of the National Research Council of the United States will cooperate. Toward support of the program The Rockefeller Foundation has made a three-year grant of $47,000 to the South Pacific Commission.

NATIONAL SCHOOL OF AGRICULTURE, PERU

POSTGRADUATE TRAINING AND RESEARCH

The increased student body, expanded facilities, and balanced curriculum of the National School of Agriculture at La Molina, Lima, Peru, have recently been extended by the establishment of a postgraduate curriculum in an effort by the school to provide more advanced training for Peruvian agricultural scientists.

Currently on the staff are a number of specialists directing studies in the fields of plant breeding, plant physiology, soil science, animal nutrition, and entomology. Grants from the Foundation for equipment, fellowships, and training scholarships for key personnel have assisted in the school's expansion. Research on cereals and other projects is being conducted by young Peruvian staff members whose training in Mexico and the United States has been aided by the Foundation.

To enable this institution to strengthen its research projects, particularly on cereals, and for support of the program of postgraduate instruction, The Rockefeller Foundation has supplemented earlier grants with an appropriation of $45,000, available during the next two years.

UNIVERSITY OF WISCONSIN

RESEARCH IN PLANT PATHOLOGY

Normal and abnormal growth and differentiation within plants and tissue cultures are the objects of a research program at the University of Wisconsin which has broad implications for the study of tumors in animals and man as well as in plants. Professor A. J. Riker directs the program. He and his associates have been studying the metabolic factors favoring or inhibiting the growth of diseased tissues for 25 years.

During the next five-year period, Dr. Riker and his group expect to compare cultures of tissues from diseased and healthy organisms for differences in fundamental physiology, and to use techniques involving isotopes and chromatography in tracing the metabolic pathways of substances which either inhibit or encourage growth. They further plan to explore the possibility that growth-inhibiting substances or compounds may combine chemically with readily available metabolites in such a way that the inhibitor may be produced by the diseased cells *in situ* during metabolism. In support of these and related projects, The Rockefeller Foundation has made a grant to the University of Wisconsin of $48,000 for use during a five-year period. In 1951 the Foundation contributed $45,000 to the program.

UNIVERSITY OF LUND

INSTITUTE OF GENETICS

The creation of Triticale, an interspecific cross of rye and wheat which is high in gluten, of good quality, and well adapted to sandy soils, is one of the important results of a research program conducted at the Institute of Genetics of the University of Lund in Sweden. Under the direction of Dr. Arne Müntzing, the institute has produced outstanding research in the field of basic plant genetics for 15 years.

Among the current investigations conducted by Dr. Müntzing and his associates are studies on the induction of polyploidy by means of nitrous oxide, on the negative effects which accessory chromosomes have on fertility and vigor, on inbreeding and self-sterility in rye, and on mutations and other cytological problems.

Foundation aid to the Institute of Genetics totals $55,000 since 1951. In 1955 The Rockefeller Foundation made a further grant of $40,000 to the University of Lund for use by the Institute of Genetics during the next three years.

UNIVERSITY OF THE REPUBLIC

COLLEGE OF VETERINARY MEDICINE

The College of Veterinary Medicine of the University of the Republic, Montevideo, Uruguay, serves an important function in relation to the country's chief agricultural industry. In the past few years, under the leadership of Dean Alfonso H. Gaggero, an expanded research program and improvements in teaching facilities have increased the institution's value to the region. Research and teaching in poultry pathology, a specialty of importance to the farmers of Uruguay, is the most recent addition to the curriculum.

In 1954 a grant of $10,000 from The Rockefeller Foundation aided in the establishment of the work in poultry pathology. A 1955 grant of $30,000 for an 18-month period is helping in the purchase of teaching and research equipment. One item of equipment of special importance which the grant made possible is a mobile clinical laboratory truck which is being used to give on-the-spot help to poultry and livestock raisers. The mobile unit also serves as a base for more effective field experience for the students.

INSTITUTE OF AGRONOMY, BRAZIL

PLANT VIRUS RESEARCH

Recognizing the significance of plant virus diseases to

crop production, the Institute of Agronomy at Campinas, Brazil, began studies of certain important virus troubles in 1939. The project has grown during subsequent years, and in 1954 a Section of Plant Virology was set up under the direction of Dr. Alvaro Santos Costa.

Dr. Costa has collaborated with a number of foreign virologists in work at Campinas on plant viruses of international significance. One of his major projects has been the "tristeza" (quick decline of citrus trees), which is of economic importance in many citrus-growing areas of this hemisphere.

For the purchase of two greenhouses to test plant stocks, and to obtain an ultracentrifuge, The Rockefeller Foundation has made a $30,000 grant to the Institute of Agronomy, bringing to $107,390 the amount contributed since 1949.

KASETSART UNIVERSITY

DEPARTMENT OF HOME ECONOMICS

To aid in the expansion of education facilities for rural women, Kasetsart University, near Bangkok, Thailand, has recently established a Department of Home Economics and has just completed construction on its campus of an excellent home economics building. Here the university hopes to train thirty or forty young women annually to serve in rural areas throughout the country. The new home economics course will not only enable the women of Thailand to take a more active role in the intellectual life of the community, but will be of great interest to neighboring countries.

During 1955 The Rockefeller Foundation appropriated $25,000 to Kasetsart University for the purchase of laboratory supplies and equipment and library materials for the Department of Home Economics.

OHIO STATE UNIVERSITY

PLANT SCIENCE

The biochemistry of seed germination, currently under study in the Department of Agricultural Biochemistry of Ohio State University, constitutes a relatively unexplored area in the nitrogen metabolism of crop plants.

The director of the research program, Dr. J. E. Varner, and his associates hope to obtain basic information on plant metabolism during the critical period from seed germination to the establishment of the seedling as an independent unit. In dealing with the nature and distribution of nitrogen compounds in germinating seeds, the group will study protease activity, the interconversion of amino acids, and the synthesis of new proteins in seedlings from reserve proteins of the seeds.

To aid Dr. Varner in his project during the next two years, The Rockefeller Foundation has appropriated $25,000 to Ohio State University to be used toward the purchase of a Spinco preparative centrifuge and other research expenses.

PURDUE UNIVERSITY

GENETICS RESEARCH

Although the spectacular results which can be achieved through the genetic effect known as hybrid vigor are visible in the modern cornfields of the United States, the genetic mechanisms involved in hybrid vigor are still not understood. No one knows how widely applicable the hybrid corn technique is or the extent of its perfectibility. Furthermore, it has been suggested that better methods of genetic selection can be developed. Several new methods have been proposed, and attempts are being made to evaluate them with economic species such as corn, poultry, swine, and even with dairy and beef cattle.

During the past five years, Professor Don C. Warren and his associates in the Department of Poultry Husbandry at Purdue University, Lafayette, Indiana, have compared four methods of genetic selection in their experiments with the fruit fly, *Drosophila melanogaster*: the method conventional for poultry and animal breeders, individual and family selection within a closed population; recurrent selection for specific combining abilities with an inbred tester; reciprocal recurrent selection for specific combining ability; inbreeding and hybridization as used in the production of hybrid corn. In the next few years, they will continue their experiments with *Drosophila melanogaster,* and initiate experiments with a different insect species as well.

Since 1949, The Rockefeller Foundation has assisted the genetics research program with appropriations totaling $37,500. A new grant of $22,500 to Purdue University will continue this support over the next three years.

UNIVERSITY OF UPPSALA

ROYAL AGRICULTURAL COLLEGE OF SWEDEN

As part of the advanced research on agricultural problems conducted by the Royal Agricultural College of Sweden, three institutes are carrying on investigations of such subjects as the biochemical genetics of higher plants, the identification of important and complex microbial metabolites and enzyme systems in bacteria, fungi, and viruses, and the conversion of nitrogen compounds in the soil.

To enable the Institutes of Microbiology, Genetics, and the National Agronomy Experiment Station to buy an infrared spectrophotometer, The Rockefeller Foundation has appropriated $25,000 to the University of Uppsala.

OTHER GRANTS

Catholic University of Chile, Faculty of Agronomy, Santiago: field and laboratory equipment and supplies; $10,000;

University of Chile, Faculty of Agronomy, Santiago: field and laboratory equipment and supplies and one special purpose vehicle; $10,000;

University of Caldas, Faculty of Agronomy, Manizales, Colombia: equipment, supplies, and library materials; $10,000;

National University of Colombia, Faculty of Agronomy, Medellín: a program of agricultural communication; $10,000;

University of Costa Rica, School of Agriculture, San José: equipment, supplies, and library materials; $10,000;

University of Salonica, College of Veterinary Science, Greece: laboratory equipment and supplies for the Department of Veterinary Physiology and Pharmacology; $10,000;

University of San Carlos, Faculty of Agronomy, Guatemala City: field and laboratory equipment and supplies and one special purpose vehicle; $10,000;

Okayama University, Japan: Ohara Institute for Agricultural Biology; laboratory equipment and supplies; $10,000;

Toward the cost of the International Wheat Rust Conference held in Mexico during March, 1956; $10,000;

School of Agriculture, Ciudad Juárez, Chihuahua, Mexico: laboratory supplies, equipment, and books; $10,000;

University of the Philippines, College of Agriculture, College, Laguna:

Books, periodicals, and supplies for the library; $10,000;

Miss Nona L. Calo, assistant instructor, Department of Agricultural Chemistry; to pursue graduate study in agricultural biochemistry at Ohio State University; $2,200;

Dr. Dioscoro L. Umali, research associate professor of plant breeding; to attend the Sixth Food and Agricultural Organization meeting of the International Rice Commission's Working Party in Rice Breeding, to be held in Penang, Malaya, and to visit West Java

in Indonesia to observe corn and rice breeding research and to collect promising plant materials; $750;

Pan American Sanitary Bureau, Washington, D. C.: Institute of Nutrition of Central America and Panama, Guatemala City; an expanded program of research on the nutritive values of corn varieties and possibly other food crops for Northern Latin America; $10,000;

University of Illinois, Urbana: general support of an international meeting of agricultural economists held in Helsinki, Finland, in August, 1955; $10,000;

University of Kentucky, Lexington: research on the nutrition of various plant-feeding mites; $10,000;

University of the Republic, Montevideo, Uruguay:

Faculty of Agronomy; construction of an insectary; $10,000;

Dr. Hebert Trenchi, Faculty of Veterinary Medicine; to visit laboratories of animal biology in Brazil, Peru, Chile, and Argentina; $1,300;

Inter-American Institute of Agricultural Sciences, Turrialba, Costa Rica:

Study of native food crops of tropical America: $7,500;

Teaching equipment for the Graduate School; $7,500;

Cooperative program of potato research; $4,500;

University of California, Berkeley:

A systematic investigation of the turpentine chemistry of the genus *Pinus,* under the direction of Dr. Nicholas T. Mirov; $7,300;

Dr. Charles M. Rick, professor of vegetable crops, College of Agriculture, Davis; to visit the Andean region of South America for studies on tomato genetics; $3,500;

Dr. Robert M. Hagan, chairman, Department of Irrigation; to visit the Rockefeller Foundation Agricultural Program in Mexico; $1,000;

University of Alaska, Alaska Agricultural Experiment Station, Palmer:

Dr. Alvo Kallio; to visit agricultural experiment stations and research centers in North America and Europe; $5,500;

To enable Dr. J. G. Leach of the University of West Virginia to assist in the development of a potato improvement program in Alaska; $3,500;

Department of Agriculture, Peradeniya, Ceylon: equipment and supplies for the laboratories of the Chemical Division; $5,000;

Bacteriological Institute of Chile, Santiago: equipment and supplies for tissue culture investigations on animal viruses, particularly of foot and mouth and Newcastle diseases, by Dr. Aldo Gaggero; $4,600;

Dr. Warwick E. Kerr, Luiz de Queiroz College of Agriculture, Piracicaba, Brazil: to visit the principal bee genetics laboratories in South Africa, Tanganyika, Mozambique, and Angola; $4,300;

Professor Fausto Lona, director, Botanical Institute, University of Parma, Italy: to visit research centers on algology and photosynthesis in the United States; $4,250;

Miss Adriana Ramirez, plant physiologist, Department of Agricultural Research, Ministry of Agriculture, Santiago, Chile: to visit Mexico and the United States; $3,100;

Dr. Jean W. Lambert, associate professor, Department of Agronomy and Plant Genetics, University of Minnesota, St. Paul: to visit agricultural experiment stations in Northern Europe; $3,050;

Dr. John H. Lonnquist, Department of Agronomy, University of Nebraska, Lincoln: to visit the Colombian Agricultural Program and to visit Piracicaba, Brazil, to review the corn breeding research program of the Luiz de Queiroz College of Agriculture; $3,050;

Dr. A. J. G. Barnett, University of Aberdeen, Scotland: to visit centers of animal husbandry research in the United States; $2,600;

University of Florida, Gainesville: Hugh Popenoe; field trips to

Central America to make studies of tropical soils, and soil fertility experiments and analysis; $2,500;

Miss Aurora C. Reyes, assistant chemist, Forest Products Laboratory, Bureau of Forestry, Los Baños, Philippines: to travel to the United States for study at Syracuse University, and return; $2,200;

Dr. B. J. Grieve, head, Department of Botany, University of Western Australia, Nedlands: to continue research on the water economy of sclerophylls at the Pasadena Laboratory, California Institute of Technology; $1,800;

Ing. Eduardo Chavarriaga, head, Corn and Bean Seed Increase Programs, Credit Bank for Agriculture, Industry, and Mines, Bogotá, Colombia: to visit commercial hybrid seed corn producers and agricultural research centers in the United States; $1,400;

Ing. Victor Bravo Ahuja and Ing. Leonel Robles Gutierrez, Technological Institute, Monterrey, Nuevo León, Mexico: to visit land-grant colleges and other agricultural research centers in the United States; $1,400;

Dr. G. F. Sprague, Department of Agronomy, Iowa State College, Ames: to visit the Colombian Agricultural Program; $1,300;

Dr. W. J. Zaumeyer, Horticultural Crops Research Branch, Agricultural Research Service, United States Department of Agriculture, Beltsville, Maryland: to visit the Colombian and Mexican Agricultural Programs; $1,150;

Dr. Karl Maramorosch, plant pathologist, Rockefeller Institute for Medical Research, New York: to visit the Mexican Agricultural Program; $800.

Operating Programs

INTRODUCTION

The Foundation supports three Latin American operating programs, of which the first was established in Mexico more than a decade ago, the second in Colombia in 1950,

and the third in Chile within the past year. These programs, and the Foundation's participation with six Central American countries in a corn improvement project, have gradually developed, through extensive intercooperation, into a single Latin American agricultural operation.

The primary purpose of this operation is to train scientists for Latin America who will eventually assume full responsibility for leadership in the improvement of agriculture in their countries. A valuable part of it has been a direct contribution to the improvement of basic food crops in the areas where operating centers are located. The important food crops are similar and training needs and opportunities are related throughout these areas.

The operation in every phase represents collaboration with the ministries of agriculture in the countries concerned. For the programs in Mexico, Colombia, and Chile, the respective governments allocate funds and provide professional personnel, facilities for laboratory and field research, land, and labor; the Foundation's part has been to contribute technical guidance, as well as financing, on a cooperative basis.

The Mexican program began with improvement work on wheat, corn, and beans, the country's major crops, and since that time has steadily expanded to cover many other food crops of the field and garden, soil management, and plant protection against insects and diseases. The Colombian program similarly began with research on wheat and corn, which have remained the objects of greatest attention, and the Chilean program has begun with wheat, the basic staple of the national diet.

The training objective of the program is accomplished under three plans. First, in the three countries where resident staffs are maintained, selected graduates of local agricultural colleges are assigned by the ministries of agriculture to work with staff members on research projects. As they progress they are given increasing opportunity and

responsibility for initiating researches of their own.

Second, the Foundation provides scholarships for work in the operating centers to graduates in other Latin American countries. Since 1945, $207,500 has been appropriated by the Foundation for scholarships to the Mexican program; currently appointments are being made at the rate of fifteen to twenty a year. In addition, in 1955 two students from Brazil and Peru went to Colombia for field research similar to that provided from the beginning for nationals of Colombia, and Latin American scholarships to the Colombian program will be increased in 1956.

Under the third training plan a series of scholarships and fellowships have been provided by which selected men and women who have had basic practical training in one of the operating centers can go to another country, usually the United States, for advanced study leading to the M.S. or Ph.D. degree.

Nearly 400 young men and women have had training under the various plans. The majority have returned to their own countries to continue in professional agriculture in government agencies, as teachers, or with commercial agricultural firms.

For the support of its Latin American operation during 1956, the Foundation has appropriated $1,284,250.

MEXICAN AGRICULTURAL PROGRAM

The number of Foundation staff members assigned to the Office of Special Studies *(Oficina de Estudios Especiales)* in Mexico has increased from one to 17 since 1943, when it was first organized as a joint venture of the Mexican Ministry of Agriculture and The Rockefeller Foundation. The office, which cooperates closely with several experiment stations of the state departments of agriculture and with a number belonging to the National Corn Commission, now operates four training and research centers,

at altitudes ranging from sea level to 7,200 feet, in important geographical regions of Mexico: the main one, at Chapingo, for the Central Mesa; La Cal Grande for the area known as the Bajío—sometimes called the nation's "breadbasket"—; a station opened in 1955 at Ciudad Obregón, Sonora, for the highly productive small grains region of the Pacific northwest; and a fourth, also opened in 1955, at Cotaxtla, Veracruz, for tropical zones.

Mexico's tropics represent one of its greatest opportunities to increase food production. Also in special need of agricultural research are the vast areas now being opened up by irrigation on the dry Pacific coastal plains of Sonora and Sinaloa. The new experiment stations in Veracruz and Sonora, established by the Office of Special Studies on land provided by the Ministry of Agriculture, will go a long way toward meeting the needs of these areas.

For the Veracruz project—including a substation on the peninsula near Campeche as well as the station near Cotaxtla—about 600 acres were purchased by the Ministry. Experiments with corn, beans, rice, vegetables, and forage crops were started as soon as the land became available, early in 1955, and carried on throughout the year as the densely vegetated sites were being cleared. Tropical conditions similar to those in Veracruz on the east coast exist in the States of Nayarit, Jalisco, Colima, and Michoacán on the west coast, and many of the results of research obtained at the new Veracruz station readily apply in these areas along the Pacific.

The tropical research program now getting under way in Veracruz should prove of interest around the globe where climates and problems are similar. Previous research on corn in Veracruz has yielded results significant not only to Mexico but also to Central America and the Caribbean area, and the new station is providing experimental and technical services for the Central American Corn Improvement Project.

For the Sonora research center about 250 acres of irrigated crop land were purchased by the Ministry on one of the principal paved roads leading out of Ciudad Obregón into the fertile Yaqui Valley. Research at Ciudad Obregón in the first year centered around major crops of the region—wheat, beans, sorghums, and vegetables—, fertilizers, and the control of insect pests.

In all the experiment stations progress continued during the year in corn improvement, work which has already met with such notable success that Mexico no longer must import corn for domestic requirements.

For the Bajío, where average yields have increased from 15 to 20 per cent since 1944, an outstanding new synthetic type was developed—Bajío VS-4. An open-pollinated variety, it should greatly simplify seed production and distribution in this important corn producing area.

In the valley of Toluca region, at 9,000 feet, the average corn yield has risen by four bushels to 20 bushels per acre in the past several years and continues to rise, as elsewhere in Mexico, with the increased use of fertilizer and the introduction of new varieties. Experimental tests of the outstanding varieties now available for high-altitude growing showed the further potentialities of the valley in 1955, with yields of from 112 to 128 bushels per acre.

As in the case of corn, wheat improvement work in Mexico has eliminated the necessity of importing wheat. During the past year seed of five new rust resistant varieties sufficient for the needs of the next crop season became available.

All the desirable quality characteristics are available in many of the improved wheats developed by the Office of Special Studies. Whether these qualities are exhibited by the harvested grain depends on its protein content, which in turn is greatly influenced by the availability of nitrogen in the soil during grain formation. One of the important current aims of the wheat improvement section is to en-

courage late applications of nitrate fertilizers, during the time of grain formation when they do not generally increase the yield but increase protein concentration.

During the year the wheat section continued to work on "composite" varieties—varieties composed of a number of visually indistinguishable but genetically distinct wheats, each of which incorporates a different factor or factors for resistance to rust. The expectation is that new races of rust, a constant threat to wheat all over the world, are not likely in any one year to attack all the different resistance factors in a field planted with a "composite" variety wheat. This new idea may eventually result in the permanent limitation of losses from rust.

The importance of the bean crop in Mexico, where beans are the primary source of protein in the national diet, can scarcely be overemphasized. The bean program seeks to weigh the nutritional values of various types; to develop new types; and to study the major bean diseases in Mexico—rust, anthracnose, and root rots—with the methods of combating them. A new variety of the popular Canario bean, Canario 101, was released for commercial increase by the bean program in 1955. Canario 101 is particularly well adapted to the Bajío, where beans are produced under irrigation between February and May.

During the year the vegetable crops program expanded to parts of northern Mexico and the Pacific northwest, where seed production problems are being studied. Also in 1955 the first outstanding tomato variety developed through breeding for winter tomato growing in the lowlands was released for commercial production. In addition to being productive, this variety, called Cotaxtla 1 after the new station in Veracruz, bears well-formed globed-shaped fruit more resistant to sun scald than the fruit of most other varieties and capable of withstanding long-distance transportation over rough roads.

Two highlights of the year's work in vegetables at the

Veracruz station were discoveries in the dry and cool seasons respectively. In the dry season it was found that most vegetables mature to market stage in this tropical area in less than half the time required in the Central Mesa. In the cool season Swiss chard prospered under climatic and soil conditions favorable to none of the other typical cool season crops—a fact of very considerable significance since leafy green vegetables are generally lacking in the tropics.

The program for the improvement of forage crops in Mexico completed its first two years in 1955. The collection of native grasses in northern Mexico, the development of several observation plots for these collections in the north, and the establishment of a new introduction garden for experimental and demonstrational purposes at Cotaxtla in Veracruz were features of expansion during the year. Attention is being focused in the forage crop program on alfalfa, which has shown excellent adaptability under irrigated conditions in various regions of Mexico and is one of the country's chief forage crops.

The section on forage crops was established originally as a first step toward the introduction of an animal husbandry program in Mexico. As a further step in the same direction a specialist on poultry husbandry was recently added to the staff.

Studies of fertilizer practices, weed control, and plant diseases and insect pests were continued. Economic ways to control insect pests in stored grain were among the problems studied. As a result of increased production, more grain is being stored in Mexico than ever before and each year the insects preying on it become more important.

The office collaborated in 1955 with the *Dirección General de Agricultura* of the Ministry of Agriculture in the establishment of a new journal, *Agricultura Técnica en México*. Published by the Ministry, the journal reports research results for state and federal extension workers, a group of trained agronomists who advise farmers through-

out the country on numerous problems and who seek to instruct them in the use of improved seed and better methods. The first issue of the new journal, including articles on fertilizers, sorghums, the control of aphids, wheat, and horticulture, appeared in July.

In 1955 scholarships and fellowships—some awarded by outside agencies—brought 30 young scholars from other Latin American countries to Mexico for study in corn, potato, bean, and wheat breeding, entomology, and horticulture. Brazil, Bolivia, Nicaragua, and Honduras were some of the countries represented.

COLOMBIAN AGRICULTURAL PROGRAM

The Colombian Office of Special Research *(Oficina de Investigaciones Especiales)*, with headquarters in Bogotá, was established in 1950. Like its Mexican counterpart, it is jointly staffed and supported by the national Ministry of Agriculture and The Rockefeller Foundation.

As in Mexico, climates in Colombia vary drastically from tropical regions to year-round cold, depending on altitude. Also as in Mexico, agricultural research facilities in Colombia are distributed with reference to these climatic variations. One central station, Tibaitatá (near Bogotá), and four substations serve for high-altitude research; two stations, supplemented by a third, smaller installation, are available for work in the intermediate altitudes; three stations are used for research in the tropics.

The Tibaitatá experiment station, constructed entirely at the expense of the Ministry of Agriculture, opened officially in January of 1954. As this large, well-planned station has come into full operation it has enabled the various sections of the office to increase the scope of their activities, especially the entomology, plant pathology, and soil science sections, whose field work can now be supplemented by more extensive laboratory and greenhouse research.

During 1955 major improvements on the farm at the Tibaitatá station were carried forward. More than five miles of new irrigation and drainage canals were built, about five miles of roads were constructed, bridges were built and improved, and over seven miles of existing canals were deepened and cleaned.

In the spring of 1955 all the research activities of the Ministry of Agriculture were integrated within a new administrative unit, the Department of Agricultural Investigations, and direction of the technical aspects of the department's work was assigned to the Office of Special Research. Also in 1955 the office was designated an international training center for the agricultural scholarship plan of the Foundation.

Nine agronomists associated with the Colombian program were awarded Foundation scholarships and fellowships for advanced study in Mexico and the United States during the course of the year. Some interchange of personnel among the various parts of the Latin American agricultural program also occurred. The director of the wheat improvement program in Colombia left to direct the new cooperative agency established in Chile by the Chilean Ministry of Agriculture in conjunction with the Foundation; a new director for the wheat program in Colombia arrived from the Office of Special Studies in Mexico; and a member of the Colombian corn improvement section left for Mexico to represent the Foundation in the Central American Corn Improvement Project.

As in previous years, the Office of Special Research cooperated in various international projects during 1955, including the Central American Corn Improvement Project and the International Corn Germ Plasm Bank to collect and preserve indigenous varieties of corn throughout Latin America. A collection of corn specimens in the bank at Medellín, the depository for the High Andean collection, increased by about 1,300 to a total of 4,900. The work of

analyzing and classifying these specimens by race is well under way.

The staff of the potato section again cooperated in the late blight studies sponsored by the American Potato Association and the United States Department of Agriculture, and the bean breeding section exchanged material with the United States Department of Agriculture and other agencies abroad, with the object of evaluating foreign varieties for use in Colombia and of contributing Colombian material for evaluation elsewhere.

Colombian corn lines have performed well in the Philippine Islands, and are furnishing sources of rust resistance in South Africa. As part of an effort to extend the application of Colombian research to other parts of the world, in 1955 plantings of Colombian as well as of Central American and Mexican corn were made in India for observation. At the invitation of the Indian Ministry of Agriculture, two Foundation staff members, one from Mexico, the other from Colombia, conducted a survey of corn breeding facilities in India.

Representatives of 23 countries and territories in the Western Hemisphere met at Bogotá in June for the third Latin American Conference of Phytogeneticists, Phytopathologists, Entomologists, and Soil Scientists, sponsored by the Colombian Ministry of Agriculture and the colleges of agriculture at Medellín and Palmira. One hundred and forty-nine technical papers and reports of research in progress were presented to the delegates, who made inspection trips to the experiment station at Palmira or the coffee research center at Chinchiná before moving to Medellín for the closing meetings. The conference was aided financially by The Rockefeller Foundation, as were the two held in previous years.

The various sections of the Office of Special Research continued to develop plant types suitable for the different areas of Colombia. In the lowlands around Valledupar, a

good crop for rotation with cotton, the principal crop, is badly needed. This district could become an important corn growing region if good varieties and hybrids could be developed for it. Around La Ceja (7,200 feet) and similarly around Popayán (5,900 feet), the corn varieties now being grown take from 11 to 13 months to develop and a quicker growing type is needed. The corn section conducted preliminary trials in all these places in 1955. Among the results, varieties from Bogotá which usually develop in a minimum of seven to eight months produced fairly good ears in less than six months in the Popayán area.

A series of maximum yield trials were started during the year by the corn section in cooperation with the sections on soil and entomology. Although the land available for the first trial, at Medellín, was not the best, and a drought occurred toward the end of the growing season, the yield was nearly three times that considered good by Colombian farmers and more than five times the national average. Col. H-203, the best yellow hybrid available for intermediate altitudes, was the first type tested.

Commercial increase and distribution of the corn section's improved varieties and hybrids are handled by the Seed Campaign of the *Caja Agraria*, the national bank for agricultural credit, which performs the same services with respect to all the improved seed developed by the office. In the two years since its establishment as part of the *Caja Agraria*, the Seed Campaign has expanded seed sales until it is nearly self-supporting. It opened two new sections for the production and distribution of seed in 1955 and plans in the near future to complete two more, on one of which work has already started.

In 1955 the Seed Campaign accelerated increase of a new wheat variety, Bonza, to replace Menkemen, which proved susceptible in 1954-55 to a new race of yellow rust which had become prevalent. Bonza, developed by the Office of Special Research, is not only more rust resistant

but also more adaptable than any of the varieties previously developed for Colombia. About 113 tons were planted on 65 farms during the year.

In an effort to minimize the hazards of shifting rust race populations, the wheat improvement section has transferred its main emphasis in the breeding program to the formation of "composite" varieties such as are being developed in Mexico.

The barley, bean, and potato improvement sections, and the soil science, pathology, and entomology sections are the other established phases of the Colombian program.

It takes time for breeding programs to yield results. For immediate results, and to select basic material for breeding, the Office of Special Research, like the Office of Special Studies in Mexico, undertakes a series of tests of existing native and foreign material simultaneously with a new breeding program. Superior varieties are usually selected for commercial increase before the breeding program has had time to develop. This has been the case with barley improvement. A selected barley variety, Funza, was increased for commercial use during the year to the extent that sufficient seed became available for barley growers in four states.

The work of the pathology section was concerned during the year with diseases of beans, corn, and Crotalaria. Among the year's results, sources of resistance to corn stalk rot and to the principal bean diseases were found.

Two sections, animal husbandry and forage crops, were added to the Colombian program in 1955. The breeds of cattle raised at present in Colombia could produce more milk and beef than they currently do. It also appears that with appropriate care a number of other breeds of cattle could do well in most areas of the country, and that some breeds of sheep, swine, and poultry which thrive in the United States may be successful there.

Pastures rather than grain feeds now furnish the

major portion of nutrients for all species of animals in the country. More efficient usage of pastures and legumes and their preservation for use during dry seasons as hay or as pasture offer promise for the improvement of the livestock industry. In addition, abundant local foods used mainly for human consumption might possibly be used as a source of nutrition for animals. Various types of fruit, such as the banana, and certain by-products of the brewing, sugar manufacturing, and rice industries offer possibilities as a source of carbohydrates and fats.

CHILEAN AGRICULTURAL PROGRAM

The program established in Chile in May of 1955 is the newest of the Foundation's agricultural operating programs and is not yet fully under way. Headquarters are in Santiago and experimentation and other technical work is done at three stations: Paine, about 45 miles south of Santiago; Temuco, in the heart of the winter wheat region; and Los Andes, about 80 miles northwest of Santiago.

Wheat and forage crops were selected as the first crops for study because of their critical importance in Chile, and a country-wide project on wheat was initiated in the first year. There is every indication that a concerted effort utilizing modern research methods will result in a significant increase in yields.

CORN IMPROVEMENT PROJECT: CENTRAL AMERICA

The Corn Imporvement Project was inaugurated early in 1954 with five Central American ministries of agriculture participating. Corn improvement programs in each of the member countries (now increased to six) are unified through the project under a central advisory office directed

by a Foundation staff member. Corn plays a dominant role in the national diets of all the countries concerned.

The aims of the project are to strengthen the existing programs in the individual countries, to encourage cooperation among them, and to maintain a system for the mutual exchange of information and planting materials. The training of young agronomists to help meet the current shortage of personnel in the six countries, and the purchase of necessary pieces of equipment when local funds are not available are important phases of project activity. Five short-term fellowships were granted to Central American agronomists under project auspices during 1955 for advanced training in the Colombian and Mexican programs and in the United States.

An annual meeting brought delegates from all the cooperating countries together at the Inter-American Institute of Agricultural Sciences, Turrialba, Costa Rica, in December of 1955. Guatemala, the new participant, joined Honduras, El Salvador, Nicaragua, Costa Rica, and Panama for a general conference on the "Breeding and Production of Corns for the Tropics." Special emphasis was placed on the problems of seed production to meet the needs of countries initiating seed increase programs.

The tropical corn breeding center established by the Mexican Agricultural Program at the new Veracruz experiment station is serving the Corn Improvement Project as well as Mexico. Its objectives are to obtain improved corns for the hot tropics of Mexico and Central America, to provide breeding materials for local programs in each of the countries cooperating in the Central American project, and to conduct research on the problems of corn culture in the tropics.

OTHER GRANTS

Latin American scholarships to Rockefeller Foundation agricultural

operating activities: supplementary funds for scholarships awarded in 1955, available with balance from previous appropriation through December 31, 1955; $35,000;

Mexican Agricultural Program: to permit completion of the publications program for 1955, available with balance from previous appropriation; 89,000 Mexican pesos (approximately $7,300).

Grants with Long-Range Relation to World's Food Supply

UNIVERSITY OF WISCONSIN AND THE STANFORD RESEARCH INSTITUTE

SOLAR ENERGY

The only renewable kind of energy for the earth is solar energy. It is available in great surplus—approximately 100,000 times the total present demand—and yet it is ineffectively used. At the same time there is a growing conviction that conventional sources of energy, and even possible atomic sources, may be inadequate to meet the needs of a rapidly increasing world population, especially in the underdeveloped areas.

Progress in the use of solar energy has had to await advances in related basic sciences. The total quantity of energy available, although tremendous, is diffuse, variable in intensity, and hard to capture.

In the last decade technological developments in solid state physics, experimentation with the forced culture of lower order plants and animals, increased understanding of organic and inorganic photosynthesis, and the development of many types of solar devices have made direct utilization of solar energy a much nearer objective.

A research program is now being undertaken at the University of Wisconsin, Madison, which will include studies in the pertinent basic sciences and the development

of simple, low cost equipment for utilization of solar energy. The development of such equipment, conceived as a means of improving living conditions in underdeveloped areas in the foreseeable future, will be among the immediate objectives.

Professor Farrington Daniels, chairman of the Department of Chemistry, will direct the program, assisted by Dr. John Duffie, and with the cooperation of about twenty faculty members representing ten departments of the university.

The program will stress solar engines and irrigation pumps, solar operated refrigerators, solar cookers, and solar distillation of salt water. Certain aspects of the mass culture of algae, particularly their harvesting and drying, are to be studied in addition to mechanical solar devices.

The longer-range program includes photochemistry, photosynthesis, photoelectricity, and the storage of electrical energy by methods which promise hope of large-scale utilization of solar energy for both nonindustrial and industrial areas.

Field experiments to test laboratory developments and to secure basic data will be an important part of the program. The Rockefeller Foundation has made an appropriation of $250,000 in support of the program during the next four years.

The Foundation supported solar energy studies also with a smaller, one-year grant of $26,000 to the Stanford Research Institute, Menlo Park, California, to assist in financing the attendance of foreign scientists at the first World Symposium on Applied Solar Energy.

To bring together the scientists, engineers, and others who can contribute to furtherance of solar energy studies, the Stanford Research Institute, in cooperation with the Association for Applied Solar Energy and the University of Arizona, sponsored the symposium at Phoenix, Arizona, from November 2 to 5, 1955.

UNIVERSITY OF CALIFORNIA

ALGAL STUDIES

In their search for a biological method to remove material from liquid wastes to permit re-use of the water fraction, a research group under the direction of Dr. H. B. Gotaas, at the University of California, in Berkeley, found that it is possible to grow the algae *Chlorella* in sewage. As a result of this discovery, they started a project on the culture of algae using waste products as nutrients.

The possibilities of producing large quantities of algae in sewage as a source of food and energy are now being studied by this group, which is also investigating the other usable by-products, such as fertilizer and irrigation or industrial water, that may result.

This research at the University of California has opened up new lines of investigation, as one of the results of which a practical way of mass producing such photosynthetic organisms as *Chlorella* may be demonstrated in the period just ahead.

For salaries, pilot plant expansion, supplies, and travel in connection with the project, The Rockefeller Foundation has appropriated $60,000 to the university for a two-year period.

UNIVERSITY OF MARYLAND

ALGAL STUDIES

The importance of marine and fresh water algae as a possible source for supplementing the world's food supply has emphasized the need for more training centers for scientists in this field. The laboratories of Dr. Robert Krauss in the Department of Botany of the University of Maryland have become a major center for research and one of the few places where students can go to acquire training in algal physiology.

Dr. Krauss and his associates are making a comprehensive study of the limiting factors in the inorganic nutrition of algae. They are attempting to produce new strains of algae in order to gain a basic understanding of their genetics, and to develop types ideally suited for production in mass culture. They are also analyzing algae biochemically for sterols, cortisone precursors, and other chemicals of medicinal or industrial use.

To support these and related research projects, and to extend the training program in the Department of Botany, the Foundation has made a $33,000 grant to the University of Maryland, available during a three-year period.

UNIVERSITY OF TEXAS

LABORATORY OF ALGAL PHYSIOLOGY

A program of basic research on the biochemistry and physiology of algae has been developing under the direction of Dr. Jack Myers at the University of Texas, Austin, since 1941. Special emphasis has been placed on the large-scale production of algae for food.

In the immediate future, Dr. Myers and his associates plan to investigate subcellular preparations of blue-green algae in an effort to achieve the complete carbon dioxide reduction of such preparations, to search for new algae with characteristics of possible experimental or economic importance, and to study algal metabolism with the partial objective of securing valuable intermediate metabolic products. Toward support of this research, the Foundation has appropriated $30,000 for use during a three-year period.

OTHER GRANTS

University of Arizona, Tucson: expenses of a group of scientists invited to participate in a conference on the problem of cloud physics research, held in Tucson during March, 1956; $10,000;

Harvard University, Cambridge, Massachusetts: Graduate School of Public Administration; preparatory study for the organization of a Water Resources Seminar; $10,000;

Professor Hiroshi Tamiya, director, Tokugawa Institute for Biological Research, Tokyo, Japan: to visit research institutions in the United States; $800.

Special Projects

BOY SCOUTS OF AMERICA

CONSERVATION OF NATURAL RESOURCES

Established by the Boy Scouts of America in 1954 to stimulate Scout and public interest in the importance and techniques of natural resources conservation, the "National Conservation Good Turn" program attracted over a million participants in its first year.

A report from the Scout troops involved at the end of 1954 listed as accomplished or in progress over 140,000 conservation projects, 40,000 exhibits, 58,000 meetings, and 300 television programs on conservation subjects. In addition, over 6,000,000 trees had been planted during the period covered by the report.

County agents, foresters, park rangers, and teachers, as well as radio and television stations and newspapers, cooperate in the program. Its potentialities, both as an educational program for the 3,500,000 members of the Scouts, and as a public information service, will be further explored in the next five years, when the "National Conservation Good Turn" idea will be continued and expanded. A five-year grant of $50,000 from The Rockefeller Foundation will help defray the costs of scientific advice for the project during this period.

OTHER GRANTS

Fund for grants of amounts not exceeding $500 for allocation under the supervision of the Director; $4,900;

University of North Carolina, Raleigh:

Professor G. W. Snedecor, Institute of Statistics; to visit the State of São Paulo, Brazil, to review the organization of a research and training center of statistics; $3,100;

Dr. Gertrude M. Cox, Institute of Statistics; to attend the International Symposium of the Biometrics Society, held in Campinas, Brazil, during July, 1955; $1,200;

National Catholic Rural Life Conference, Des Moines, Iowa: travel expenses of conference discussion leaders participating in a meeting held in Panama during April, 1955; $2,900.

THE SOCIAL SCIENCES

THE SOCIAL SCIENCES are primarily concerned with the scientific study of human societies, as a whole and by segments, with all their complexities and problems and in their relation to one another. Economics, political science, and sociology are the social sciences among the academic disciplines. This trilogy, however, is nowadays usually interpreted broadly to include international relations, economic history, demography and population, along with parts of mathematics and statistics, legal and political philosophy, cultural anthropology, and geography, in order to widen comprehension, sharpen the analysis, or achieve perspective. Moreover, what ancillary approaches and techniques can be usefully applied to the study of man in society change rather rapidly because, on the one hand, new advances in related fields occur frequently and because, on the other, man's conscious concern with his own social environment keeps changing as that environment changes. The consequence is that the social sciences have at once a high rate of progress and a high rate of obsolescence.

Notwithstanding all the ramifications that the scientific study of human society has come to assume in the present-day world, the Foundation's program in the social sciences must necessarily be somewhat restricted. Not all segments of the social sciences seem to be equally germane to the problems of today's world, to be equal in the feasibility or likelihood of their making significant advances, and, finally, to be

equally pertinent in their subject emphasis and geographical range to other programs of the Foundation. These considerations—along with due regard to the principle of the division of labor and the practical impossibility of being concerned with everything simultaneously—have largely determined the present program in the social sciences.

In the social as in other sciences, some of the most valuable work is commonly at the periphery of the disciplines, or at the uncertain borders where they spill over into one another and rush on into theretofore unknown fields. No less important, of course, is basic work at the heart of the central problems in any discipline. Such efforts, which call for the utmost in skill, imagination, devotion, and high intellectual competence with a certain flair, are rarely motivated by a concern with immediately "practical" problems. Yet the unfettered pursuit of knowledge without reference to its immediate application is central in the Western intellectual tradition and, over the long pull, has done more than anything else to improve our human lot. Consequently extensions of fundamental theory, the development of new analytical techniques, and the synthesizing, generalizing, and integrating of theory and fact in any one social science discipline or between and among different disciplines, all have a high priority in the program of the social sciences.

The economically (and sometimes politically) less developed countries, however, nowadays claim a larger share of the attention of all of us. The program in the social sciences endeavors, therefore, to assist in the development of social scientists and social science research in these areas themselves. These countries are confronted with political, economic, and social problems which probably can only be analyzed and dealt with by trained indigenous social scientists. At the same time, however, social scientists in the more developed countries can help in this process by their own researches and by offering training facilities to their confrères from the less developed countries. The social

science program is intended to assist where it can promote both purposes.

Notwithstanding the now special claims of the underdeveloped areas and the ever-present need for significant basic work in the social science disciplines, certain major problems confronting our own society seem to be so important that they cannot be omitted from even a restricted program. One such, surely, is how to preserve, vitalize, and extend the values for which Western society traditionally has stood while at the same time assuring that it evolves and adapts to the dynamic changes which are forever arising within it and impinging upon it from without. A second is how can Western societies cope with the problem of living in peace and harmony with one another and with other societies with a non-Western tradition so that man's ingenuity, knowledge, and skills can work towards improving his spiritual and material well-being instead of their nullification. No one supposes, of course, that these congeries of problems are solvable in the sense that a problem in machine design is solvable. All the same, the only known route to their possible alleviation is through research, analysis, and reflection by human beings, among them social scientists.

These, then, are the main strands of the program in the social sciences as the officers see it for the days immediately ahead.

The Social Sciences as Scientific Disciplines

UNIVERSITY OF MICHIGAN

SURVEY RESEARCH CENTER

Although Americans are deeply attached to democratic political institutions, too little is known about the actual workings of political democracy in a modern nation. Among the many efforts now being made to increase understanding

of democratic political processes, none, perhaps, is more important than that concerned with the electoral process, for here the citizens' interest and participation are most directly and widely engaged.

With the aim of developing a general theory of voting behavior based on observations of actual voting behavior and tested under varying circumstances, Professor Angus Campbell, director of the Survey Research Center of the University of Michigan, is planning to study the voting behavior of a national cross section of voters in the 1956 presidential election. Building on a similar study he made of the 1952 election with the sponsorship and assistance of the Social Science Research Council's Committee on Political Behavior, Professor Campbell will explore the underlying motivational factors which influence the political participation and partisanship of American voters. In addition to analyzing the relative importance of party identification, position on leading political issues, and attitude concerning candidates, he will examine the influence of political ideology, of identification with major economic, social, and religious groupings, and of certain personality characteristics.

During 1955 The Rockefeller Foundation made a grant of $110,000 to the University of Michigan to support this study for a three-year period.

PRINCETON UNIVERSITY

OFFICE OF POPULATION RESEARCH

The need for increased study of population problems in areas of great present or potential population pressure has been widely recognized. Increasingly determined and vigorous efforts to raise living standards in areas of dense population and slight industrial development are directing attention to relationships between population and resources, and especially to the need for better knowledge of the effects of social and economic change on human populations.

The Office of Population Research of Princeton University, established in 1936, has become one of the leading university organizations in the United States for the study of population problems, and particularly international demographic problems. During the next few years the office plans to direct its research interest primarily toward studies of relations between population and economic change, with special reference to underdeveloped countries.

In addition to its research program, the Office of Population Research publishes the bibliographical quarterly, *Population Index,* provides facilities and consultation to visiting foreign scholars and others concerned with population problems, and gives training and research supervision to younger men at both the pre- and postdoctoral levels. It serves as a clearinghouse for research workers in the field, and is the principal university center in this country for the training of foreign students and visitors in demography.

Since 1944 The Rockefeller Foundation has contributed a total of $358,200 to Princeton University for the program of the Office of Population Research. Continuing this long-term interest in population problems, the Foundation in 1955 appropriated $500,000 toward support of the office during the next ten years.

HARVARD UNIVERSITY

ECONOMIC RESEARCH

Since Professor Wassily Leontief originated the concept of input-output analysis in 1936, it has won wide recognition as a useful tool in economic research. There is now a large literature on the subject, and government agencies in the United States, Canada, Great Britain, the Netherlands, Norway, Italy, and India have undertaken input-output analyses of their economies. A number of other countries are planning to initiate similar studies in the near future.

Input-output analysis is based on the concept that in

any economy in which there is specialization of function or division of labor, each industry or economic unit draws its "inputs" (raw materials for its product, for example) from other segments of the economy, and disposes of its "outputs" (its product) to certain other segments. The concept permits the preparation of tables or matrixes of varying complexity, depending upon the number of economic units included, which show the fabric of the economy and how its parts are woven together by the flow of trade. These provide a useful method of examining the interrelationships between the different parts of a modern economy, and of tracing the effects of changes in any one part on all the other parts.

Professor Leontief and his associates have gone beyond the analysis of a single economy to studies of interregional economic analysis, toward a more careful analysis of the dynamics of technological change, wage changes, investment, consumers' expenditures, and other factors. A large part of their future research will be directed toward determining to what extent subsequent technical progress, changes in relative costs of inputs, and so on, affect the relationships in input-output analysis.

Although these studies are theoretical, it is possible to test the hypotheses developed against a wealth of empirical data and thus, as the work proceeds, theory is being brought into increasingly close conformity with the data.

A 1955 grant of $240,000 from The Rockefeller Foundation to Harvard University will support Professor Leontief's research during a three- to six-year period.

SOCIAL SCIENCE RESEARCH COUNCIL

FELLOWSHIPS

The Social Science Research Council's research training fellowship program, national in scope, is maintained exclusively for advanced training for research in the social

sciences, but is otherwise unrestricted as to disciplinary field, area of substantive interest, or the kind of training for which appointments may be made. It can, therefore, be administered with a view to offering each appointee the particular kind of opportunity which seems best calculated to advance his development as a research scholar.

In operation since 1925, the council's fellowship program is widely recognized to have been a major factor in the development in this country of a distinguished body of productive research workers in the social sciences. Because both the advancement of knowledge of human affairs and its effective application to social problems depend on the development of increasing numbers of well-trained social scientists for research and teaching posts, the importance of the program is as great as in earlier periods.

The Rockefeller Foundation in 1955 appropriated $485,000 to the Social Science Research Council to extend for an additional three years its support of the research training fellowship program. The Foundation and the former Laura Spelman Rockefeller Memorial have aided the program continuously since its establishment.

OTHER GRANTS

Japan Sociological Society, Tokyo: studies of social stratification and social mobility in Japan; $13,000 for a two-year period;

Harvard University, Cambridge, Massachusetts: Laboratory of Social Relations; advanced research training of especially promising young men in the laboratory; $10,000;

University of Vienna, Austria: Department of Sociology; studies of factors which contribute to the basic social, economic, and political views of major groups in Vienna, under the direction of Dr. Leopold Rosenmayr, Social Science Research Laboratory; $9,820;

University of Chicago, Illinois: study of adjustment during the middle years of marriage, under the direction of Professor Ernest W. Burgess; $8,500;

Fund for grants of amounts not exceeding $500 for allocation under the supervision of the Director; $5,000;

Australia-New Zealand Fellowship Committee: toward the expenses of this committee, which advises the Foundation on the selection of fellows in the social sciences from Australia and New Zealand; 1,200 Australian pounds (about $2,760) for a three-year period;

P. T. Bauer, lecturer in economics, University of Cambridge, England: to visit American universities and economic research centers; $1,400;

Ronald H. Barback, senior lecturer in economics, Canberra University College, Australia: to complete studies at Nuffield College, Oxford; 400 Australian pounds (about $900);

Osaka University, Japan: Dr. Shinichi Ichimura, Institute of Social and Economic Research; to visit research centers in econometrics in Italy, the Netherlands, England, and the United States; $900.

The Quest for Economic Development

COLUMBIA UNIVERSITY

EAST ASIAN INSTITUTE

The East Asian Institute of Columbia University began its work in 1949 with the twofold aim of preparing a limited number of graduate students as regional specialists on China and Japan, and advancing general knowledge and understanding of East Asia through an integrated program of teaching and research. Since that time a number of important studies have been published under the auspices of the institute, and 27 former students are working in government, teaching, or research posts concerned with the Far East.

The institute has emphasized in its program the development of research in the social sciences oriented toward the Far East, and has included in its curriculum work in history,

language, and literature. Far Eastern specialists from other institutions in the United States and the Far East have been brought to Columbia on visiting appointments to supplement the teaching and research activities of the permanent staff members.

During the next four years the institute plans to continue to strengthen its course offerings in the social sciences, to intensify its summer language program, and to continue its program of visiting professors and lecturers. It plans also to invite one or two young specialists to participate in research and teaching at the institute for a year as part of their own advanced training.

To assist the institute during an important period in its development, The Rockefeller Foundation in 1955 appropriated $95,000 which, with funds remaining from an earlier appropriation, will be available during the period ending June 30, 1959.

UNIVERSITY OF THE PHILIPPINES

INSTITUTE OF PUBLIC ADMINISTRATION

The Institute of Public Administration of the University of the Philippines was established in 1952 for the purpose of improving public administration within the Philippines, and of serving as a training center for other Southeast Asian countries faced with similar problems in public administration in connection with their development programs.

With vigorous leadership and the assistance of the Philippine and United States Governments and the University of Michigan, the institute has developed a full-scale academic program leading to both undergraduate and graduate degrees, the best library in public administration in the Far East, and a research and publication program which has produced a number of important works.

The institute began by giving intensive in-service training to some thousands of government employees. More recently it has shifted its emphasis toward the preparation of instructors within the government who will train other employees. Through a scholarship program, the institute is also training students from Burma, Indonesia, and Thailand.

For the further strengthening of its program, the Institute of Public Administration wishes to send two staff members to the United States for study for one year each, to bring two senior American specialists to Manila for one year each, and to purchase books and periodicals. A grant of $68,000 from The Rockefeller Foundation will be used for these purposes during the next two years.

NEW YORK UNIVERSITY

STUDY OF FOREIGN STUDENT ORIENTATION PROGRAM

In 1955 more than 35,000 foreign students came from all parts of the world to study in American colleges and universities. Of this number approximately 1,500 graduate students from countries of the free world were assisted by the International Exchange Service of the United States Department of State in their studies at American educational institutions.

For several years the service has provided for the students who come to the United States under its sponsorship an orientation program designed to facilitate the student's adjustment to life and work on an American campus and thereby make his study experience more rewarding. These programs are carefully prepared to meet the needs of the students in understanding their new environment.

Until recently there has been no means of accurately measuring the effectiveness of these programs. In 1954, however, Dr. Stuart Cook, director of the Research Center for Human Relations of New York University began a study of the ascertainable effects of the programs. During the course of this study he plans to compare a substantial

sample of the students who attended the State Department course with a closely matched sample of students who did not attend. The results of this study should prove of value to all agencies concerned with programs of foreign student exchange in this country. Toward the costs of this study The Rockefeller Foundation, in 1955, appropriated $15,000 to New York University.

GOKHALE INSTITUTE OF POLITICS AND ECONOMICS

The Gokhale Institute of Politics and Economics in Poona, India, is a major independent center for social science research and the training of young Indian social scientists. Under the leadership of its director, Dr. D. R. Gadgil, the work has been oriented toward the solution of India's present-day political and economic problems and toward the development of materials on Indian rural and urban life and institutions. The staff includes several younger social scientists trained at the institute, and a growing corps of technical assistants and field investigators.

The institute has pioneered in field investigations and analyses of a considerable number of factors which affect Indian development, including the economic effects of irrigation, agricultural marketing, land reform, farm accounting, and population. During recent years the National Planning Commission and other departments and ministries of the Government of India have turned repeatedly to the institute for research assistance on these and similar problems and for trained personnel.

The greatest present need of the institute is sufficient assured income to maintain a core staff and research program on a longer-range basis than is possible with temporary grants and contracts for specific projects. Dr. Gadgil is attempting to build up an endowment fund during the next few years to secure the stable income required for these purposes.

In 1955 The Rockefeller Foundation made an outright grant of $150,000 to the Gokhale Institute, payable as re-

quested through December 31, 1965, which it is hoped will provide the financial base needed for the development of a permanent staff and research program while the institute builds up its endowment income.

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

CENTER FOR INTERNATIONAL STUDIES

The Center for International Studies directed by Professor Max F. Millikan at the Massachusetts Institute of Technology has been engaged since 1952 on comprehensive studies of economic development in India, Italy, and Indonesia which have involved comparative economic analysis of such factors as investment plans and capital formation, development of an industrial labor force, and the relations between industry and agriculture. An equal amount of attention has been given the broad political problems associated with development in the three countries.

As the work at the center has progressed, it has become increasingly apparent that noneconomic factors arising from the value system and social structure are more important than was realized initially. Why, for example, is industrial development a continuing process in some societies while in others with comparable capital resources it is virtually absent?

During the next three years the center will undertake a study, under the direction of Professor Everett E. Hagen, of the factors which encourage the development and spread in a society of the motivations conducive to economic development—motivations which prompt people throughout the society to seek and to accept technological innovations, to save and to invest savings in industry, and to engage in entrepreneurial careers. The research group will examine existing theories, and then check these hypotheses against the historical experience of industrialized countries, the more recent experience of Japan and Russia, and the current experience of countries now bent on development.

In their work the group at the center will have the assistance of an advisory board of economic historians and specialists in cultural anthropology and sociology, and of a small number of scholars commissioned to do special studies of innovation and entrepreneurship as they are now appearing in India, Indonesia, Italy, and other countries.

In 1955 The Rockefeller Foundation appropriated $150,000 to the Massachusetts Institute of Technology to support the study during the next three years.

UNIVERSITY OF CHICAGO

PHILIPPINE STUDIES PROGRAM

The Philippine Studies Program directed by Professor Fred Eggan was established at the University of Chicago in 1953 for the purposes of accumulating research materials and data of a cultural-anthropological nature on the Philippines, and of training younger scholars, both Filipino and American, in cultural anthropology with special reference to the Philippines. The program will now undertake field studies at the village and regional level in several Philippine communities, designed to supplement its research program and also to reveal the social and cultural factors which are importantly related to plans and programs for the economic development of the Islands.

One part of the project will consist of studies concentrating on three Tagalog agricultural communities, with special reference to their social and cultural characteristics and differences, and their relationship to the central government. Also planned is a socio-economic study of a Bisayan fishing community, with the object of revealing the complex of activities in the area, the interrelation of these to the larger economy, and the ways in which they are changing under the impact of Western technology.

A grant of $20,000 from The Rockefeller Foundation to the University of Chicago will support the field studies during a three-year period.

OTHER GRANTS

Selection, purchase, and shipment of books in the social sciences to the Library of Political and Social History, Djakarta, Indonesia; $7,350;

University of Baroda, India: Department of Sociology; a study of Mahuva, a small coastal town in the State of Saurashtra; 33,220 rupees (about $7,315);

Northwestern University, Evanston, Illinois: Dr. Francis L. K. Hsu, professor of anthropology; to study in India the relations between Hindu values and way of life; $6,900;

Stanford University, California:

Nobushige Ukai, Tokyo University, Japan; to serve as visiting professor in the School of Law and the Department of Political Science during the calendar year 1956; $6,700;

Shinzo Kaji, professor of economic geography, Tokyo University, Japan; to serve as visiting professor for an additional six months; $2,500;

University of Lucknow, India: Dean R. U. Singh, director, Institute of Public Administration; to visit centers of public administration in Southeast Asia, the United States, Europe, and the Near East; $5,000;

Tokyo Institute for Municipal Research, Japan: Reiichi Kojima, chief of operations and acting chief of research; to study the organization and administration of municipal research and of large cities in the United States and Europe; $4,150;

Kobe University, Japan: Kinji Tanaka, professor of economics, School of Business Administration; to visit the United States; $3,225;

Keio University, Tokyo, Japan: interdisciplinary studies of problems of Japanese fishing villages; 1,000,000 yen (about $3,000);

University of Wisconsin, Madison: completion of a study of the economic development of Japanese agriculture with respect to land tenure from 1868 to 1953, by Professor Motosuke Kaihara; $2,300;

University of Calcutta, India: Amlan K. Datta, lecturer in economics; to study for three months in the United States; $2,125;

The American Society of International Law, Washington, D. C.: an

International Investment Law Conference, held in Washington during February, 1956; $2,000;

University of the Philippines, Quezon City: to bring an American sociologist to the university for two years of teaching and research; $1,600;

University of Ceylon, Colombo: Mr. and Mrs. Rudolph Wikkramatileke; to study in Western Europe problems of human and economic geography; £475 (about $1,425);

University of Melbourne, Australia: Miss Mary M. Bayne, senior lecturer in economic geography; study in Japan of problems of economic development; $1,000;

Purdue University, Lafayette, Indiana: Nathaniel B. Tablante, agricultural economist, Philippine Department of Agriculture and Natural Resources; to complete studies in agricultural economics at Purdue; $1,000;

University of North Carolina, Chapel Hill: Dr. Gordon W. Blackwell, director, Institute for Research in Social Science; to attend the International Conference on Regional Planning and Development at Bedford College, London, England, September 29 to October 2, 1955; $700.

Social Science Problems of Contemporary Western Society

COUNCIL ON FOREIGN RELATIONS, INC.

RESEARCH ON INTERNATIONAL RELATIONS

The Council on Foreign Relations, which has received financial assistance from the Foundation since 1928, seeks to bring the country's best intellectual resources to bear on contemporary international problems. During the last 25 years, through the efforts of a membership including responsible diplomats, business and professional men, former government officials, and established scholars, it has come to play a unique role in the field of its interest.

The council has developed important techniques for identifying emergent problems before they become matters for public policy. To throw light on these problems both before and after they are fully apparent, to seek their solution, and to facilitate on an international basis the exchange of ideas and opinions about them, are among its major objectives.

Through formal and informal discussion and study meetings, an important part of its program, the council helps to bridge the gap between scholars and men of affairs, giving scholars greater access to the practical knowledge and experience of leaders in government and business, and practitioners greater access to the counsel of academic authorities.

The council's publications include a quarterly journal, *Foreign Affairs, The Political Handbook of the World,* and an annual volume, *The United States in World Affairs.* Over the last 25 years it has published more than 40 special studies including Newton D. Baker's *Why We Went to War,* Henry L. Stimson's *Far Eastern Crisis,* and a two-volume history of United States foreign relations from 1939 to 1941, *The Challenge to Isolation* and *The Undeclared War* by Professors William L. Langer and S. Everett Gleason.

To aid the council's research program during the next decade, in part through a contribution to the costs of research leadership on a full-time basis, The Rockefeller Foundation made an outright grant in 1955 of $500,000.

HAGUE ACADEMY OF INTERNATIONAL LAW

CENTER FOR STUDY AND RESEARCH IN INTERNATIONAL LAW AND INTERNATIONAL RELATIONS

The Hague Academy of International Law, established shortly after World War I with substantial support from the Carnegie Endowment for International Peace, provides unique opportunities for study and research in the field. Be-

cause the Hague is also the home of the International Court of Justice, the academy has been able to number among its lecturers distinguished jurists, scholars, and publicists of international law. Available to students at the academy are the 300,000 volumes on public and private international and comparative law and international relations contained in the Library of the Peace Palace.

In past years the emphasis of the Hague Academy has been on the training of large groups of students in the fundamentals of international law through public lectures. Better to prepare able young scholars in international law, the academy now proposes, through the establishment of a Center for Study and Research in International Law and International Relations, to stress the intensive training and individual research of perhaps a dozen promising young scholars with advanced university degrees or considerable practical experience in international affairs. Under the supervision of two directors for studies, the group will explore both current issues in international law and the more fundamental problems involved in the search for viable norms for conduct in international relations.

In 1955 The Rockefeller Foundation appropriated $122,000 to the Hague Academy of International Law for use by the new center during a five-year period.

UNIVERSITY OF NOTRE DAME

COMMITTEE ON INTERNATIONAL RELATIONS

Two previous grants from the Foundation have helped the Committee on International Relations at the University of Notre Dame carry on a research program with special emphasis on cultural, political, and philosophical problems in international relations.

Under its first chairman, the late Dr. Waldemar Gurian, the committee focused on Soviet and East European

affairs in connection with its interest in the rise of political religions and their impact on the conduct of foreign affairs. At the same time, through symposia, visiting professorships, lecture programs, and special seminars, it has from the beginning tried to foster student and community interest in problems of international relations.

In addition to more than 50 articles, the five-man committee has published ten major books in the last five years. Its articles appear regularly in the *Review of Politics*, a journal devoted to the history and philosophy of international relations and characterized by Walter Lippmann as "having very few equals and no superiors in the English-speaking world in the serious discussion of international politics."

Recently the committee's work on the Soviet and Eastern Europe has been taken over by specialists on Eastern Europe working independently in a separate center at Notre Dame, and a new orientation for its own research in the next five years has been proposed. The dilemma of liberal and democratic governments in formulating and carrying out foreign policy, especially as reflected in the conduct of contemporary foreign policy, will be studied. The committee expects also to continue and bring to fruition cooperative research on the origins of World War II and on the political significance of military and diplomatic decisions in the war.

Dr. Stephen Kertesz, author of *Diplomacy in a Whirlpool,* will direct the program. A former Hungarian diplomat and scholar, Dr. Kertesz assumes the responsibilities carried on for a number of years by Dr. Gurian, while Dr. M. A. Fitzsimons, historian and analyst of British foreign policy, becomes the new editor of the *Review.*

The Rockefeller Foundation appropriated $100,000 in 1955 to the University of Notre Dame in support of the committee's work over the next five years.

LONDON SCHOOL OF ECONOMICS AND POLITICAL SCIENCE

FELLOWSHIPS IN INTERNATIONAL RELATIONS

Broader and more integrated training in international relations than has previously been given in any of its single departments will be offered by the London School of Economics and Political Science under a new program now being developed.

The school's work in international relations has been recognized throughout the world. Its resources for teaching in this field include a distinguished tradition associated with the names of Professor Hersh Lauterpacht, Sir Charles Webster, and Lord McNair; substantial course offerings in the Departments of International Relations, International Law, International Economics, and International History; and established work in the comparative study of governments in the Department of Government. Taken together, and coupled with the work being done at the school in related fields such as anthropology, sociology, and demography, these are the elements from which the new training program will be developed.

As a key part of the project, the London School in the next five years plans to award a limited number of predoctoral and postdoctoral graduate fellowships to promising young scholars who wish to broaden their training in international affairs across the boundaries of single departments. The Foundation has appropriated £18,400 (approximately $55,200) to support this fellowship program.

COLUMBIA UNIVERSITY

INTERNATIONAL LAW

To reappraise international law in the light of new social, political, and economic findings drawn from the study of international politics is the common object of three activities planned for an 18-month period by the Department of

Public Law and Government of Columbia University. The Rockefeller Foundation appropriated $24,000 to Columbia in 1955 for these activities.

Professor Julius Stone of the University of Sydney, Australia, will visit the Columbia campus during the academic year 1955-56. Professor Stone is a leader of the legal realism school of jurisprudence—sometimes characterized as sociological jurisprudence—which emphasizes not only the importance of law as a creative force, but also the importance of the nonlegal factors which obstruct or favor its effectiveness.

Sir Zafrulla Khan, recently appointed judge of the International Court of Justice, will also join the Columbia staff for a temporary period. A former foreign minister of Pakistan, his first-hand experience of international law in relation to the problems of new nations makes his perspective especially valuable.

The third part of the program involves research and travel by Professor Philip C. Jessup, who, following a period of public service, will devote himself to exploring further the fields marked out in his earlier books.

UNIVERSITY OF HEIDELBERG

POLITICAL SCIENCE

The University of Heidelberg has developed since the end of World War II one of the most active centers in Germany for teaching and research in political science. Under the direction of Dr. Dolf Sternberger, the university has organized a seminar and research program on parliamentary government with special attention to the structure and functioning of political parties in multi-party political systems. This work is now being focused especially on the legal status, political roles, and influence on legislation of opposition parties in various European countries and during different periods in Germany.

To strengthen and expand the research and teaching program, the university has appointed Dr. Sternberger to the post of Honorarprofessor in the philosophical faculty, and has invited Professor Carl J. Friedrich of Harvard University to offer advanced courses in political science in the Faculty of Law during half of each academic year until a suitable permanent appointment can be made.

The Rockefeller Foundation, which has assisted the political science program at the University of Heidelberg during the past three years, in 1955 renewed its support with a grant of $37,150, available during the period ending October 31, 1958.

UNIVERSITY OF WISCONSIN

STUDY OF TAX ADMINISTRATION

Major dependence upon income tax for public revenue in the United States places high importance on the effectiveness of tax administration. In 1952, for example, approximately 80 per cent of federal, and 60 per cent of total tax revenues — federal, state, and local — came from income taxes. Important questions of tax policy depend in part on the quality of tax administration, for the presumed equity of the income tax can be seriously impaired by its uneven administration with respect to such major segments of income as wages, farm and professional income, rent, interest, and dividends.

In the State of Wisconsin, which has had a long and full experience with income tax, Professor Harold M. Groves of the University of Wisconsin is conducting a two-year study of tax administration in Wisconsin with the close cooperation of the State Tax Department. The research includes detailed studies of the effectiveness of tax administration as regards major segments of income, an appraisal of present administrative procedures, and a study of the possibilities for their improvement.

Toward the costs of this program, The Rockefeller Foundation in 1955 granted $36,000 to the University of Wisconsin.

OTHER GRANTS

Vassar College, Poughkeepsie, New York: a study of foreign policy making in Ceylon, by Assistant Professor W. Howard Wriggins; $14,800 for a two-year period;

Columbia University, New York:

A study of British-Soviet-American relations from 1940 to 1947, by Dr. Herbert Feis; $10,000 for a two-year period;

A senior seminar in the theory of international politics; $9,500;

Continuation of research into the classical background of modern political theory, by Professor Robert D. Cumming; $5,850;

Completion of studies of Thomistic legal and political thought, by Professor Emeritus Dino Bigongiari; $5,400;

Study in the field of jurisprudence, during the summer of 1955, by a member of the Law Review staff; $500;

University of Michigan, Ann Arbor: continuation of studies in the field of jurisprudence in England and Germany, by Professor William B. Harvey; $10,000;

Johns Hopkins University, School of Advanced International Studies, Baltimore, Maryland:

Comparative study of the foreign policies of two recent Secretaries of State of the United States, by Professor John P. Armstrong; $9,400;

Conference on Nationalism and Progress in South and Southeast Asia, held during the 1955 summer session; $6,050;

Research in the area of ethics and foreign policy, by Professor Ernest Lefever; $5,000;

Additional expenses of research in international relations by Professors John P. Armstrong and Ernest Lefever; $4,000;

Dr. Victor W. W. S. Purcell, lecturer in Far Eastern History and

Extra-Mural Southeast Asia Studies, University of Cambridge, England; to serve as visiting lecturer during the first term, 1955-1956; $2,000;

Oberlin College, Ohio: study and research toward completion of his doctorate in international relations, by Professor Robert W. Tufts, Department of Economics; $9,000;

University of Virginia, Charlottesville: research on the history of limited warfare and the evolution of America's responsibilities in the Far East, by Professor Louis J. Halle, Jr.; $9,000;

University of Wisconsin, Madison:

Exploratory study of talent loss in the United States, by Professor William H. Sewell, chairman, Social Science Research Committee; $8,500;

A research seminar on problems in the law of land use control; $7,740;

Professor Jaroslav Mayda; continued study of Anglo-American law at the University of Chicago Law School; $2,500;

Research in the field of jurisprudence by the Law Review staff; $700;

University of the Saar, Saarbrücken: research on problems of Franco-American relations contributing to the establishment of a theory of foreign policy, by Professor J. B. Duroselle; 2,800,000 French francs (about $8,400);

Yale University, New Haven, Connecticut: research on "Power Politics and Peace Strategy," by Professor Arnold Wolfers; $7,500;

Pennsylvania State University, University Park: research into the role of Soviet ideology and national interest in the formulation of Soviet foreign policy, by Assistant Professor Vernon V. Aspaturian; $7,295;

University of Utah, Salt Lake City: research and writing in the field of jurisprudence, by Professor Edgar Bodenheimer; $6,900;

Ohio State University, Columbus: research on the problem of political power and political values, by Professor David Spitz; $6,830;

Harvard University, Cambridge, Massachusetts:

Professor Herbert L. A. Hart, University of Oxford, England; to serve as visiting professor of jurisprudence at Harvard; $6,000;

Law School; study of legal aspects of international trade and investment, by Kyu Dai Joe, former judge of the Seoul District Court, Korea; $2,400;

Studies in the field of jurisprudence by members of the *Harvard Law Review* staff; $1,400;

Lawrence College, Appleton, Wisconsin: continuation of research and writing on the political theory of Federalism, by Professor William H. Riker; $5,500;

Bryn Mawr College, Pennsylvania: completion of research on the origins of political realism in sixteenth-century Italy, by Professor Felix Gilbert; $5,400;

University of Oxford, Queen's College, England: continuation of research on causation in the law, by A. M. Honoré; $5,365;

University of Pennsylvania, Philadelphia:

Study of the British concept of the judicial function, by Professor Paul J. Mishkin; $5,100;

A study of the assumptions and goals of European criminal law, by Professor Louis B. Schwartz; $2,400;

University of Southern California, Los Angeles: comparative study of attitudes and policies of Great Britain and the United States toward contemporary Asiatic problems, by Professor Ross N. Berkes; $5,000;

Wesleyan University, Middletown, Connecticut: research on the role of parliamentary parties in foreign policy formation, by Professor Sigmund Neumann; $5,000;

New York University, New York: Robert B. Looper; research at Nuffield College, Oxford, England, on the legal problems of the welfare state; $4,500;

University of Missouri, Columbia: completion of a study of the rural church as a social institution in Missouri, under the direction of Professor C. E. Lively; $4,245;

University of California, Berkeley:

Comparative study of the party systems in Great Britain and Switzerland, by Professor Leslie Lipson; $4,175;

Neal N. Wood; continued study in the United Kingdom of academic Marxist thought in contemporary Britain; $3,800;

Dr. Yosal Rogat; supplement to previous grant for study of comparative private law at the University of Oxford, England; $800;

Foreign Policy Association, New York: program of discussions on recruitment for the United States foreign service, to be conducted by Henry M. Wriston, President Emeritus of Brown University; $4,000;

Princeton University, New Jersey: Center of International Studies, Woodrow Wilson School; translation by Professor Percy E. Corbett of Judge Charles de Visscher's *Théories et Réalités en Droit International Public* and its publication in English; $4,000;

University of Cambridge, England: Dr. Victor W. W. S. Purcell, lecturer in Far Eastern history; to visit Southeast Asia; $3,900;

University of Minnesota, Minneapolis: study of the development of the concept of total war in the period from the eighteenth century to the present, by Professor John Bowditch; $3,000;

Professor Jacques Freymond, director, Graduate Institute of International Studies, Geneva, Switzerland: to visit American universities, international studies centers, and libraries; $2,750;

Professor Takeo Horikawa, Hiroshima University, Japan: research in international relations in the United States; $2,700;

University of the South, Sewanee, Tennessee: continued research on the political writings of James Harrington, by Dr. Gilbert Frank Gilchrist; $2,230;

American Historical Association, Washington, D. C.: a meeting to discuss problems related to German war documents now in the United States, held in Washington during October, 1955; $1,500;

University of Chicago, Illinois: studies in the field of jurisprudence by members of the *Chicago Law Review* staff; $1,400;

Stanford University, California: studies in the field of jurisprudence by members of the *Stanford Law Review*; $1,400.

THE HUMANITIES

IN THE humanities, The Rockefeller Foundation is now mainly concerned with history, philosophy, linguistics, and the arts. For the purpose of reporting, grants are listed under four major headings: Intercultural Studies; Humanistic Research; The Arts; and Special Projects. Actually, grants which aim at intercultural understanding usually depend on historical, philosophical, and linguistic research and, except for the primacy of this aim, might as well be listed under the more general heading, Humanistic Research. Appropriations for 1955 totaled $3,239,601, of which $1,622,224 was for Intercultural Studies, $354,651 for other projects of Humanistic Research, $872,151 for the Arts, and $390,575 for Special Projects, mainly in the humane aspects of higher education.

INTERCULTURAL STUDIES

During the last decade, interaction among the people of the world has developed at a spectacular rate. As a result, each country is host to a profusion of impressions, presumptions, and attitudes regarding other cultures, nearby and remote. How to understand, how to judge, and how to deal with different peoples require as never before knowledge of the forces and ideas at work in all parts of the world. To contribute to such knowledge is the aim of the intercultural studies supported by The Rockefeller Foundation for more than two decades.

For such studies, the major universities of the world have evident advantages in the enduring character of their

effort, in their scholarly resources, in their established library services, and in the possibility of broadening and enriching their educational offering. In undertaking such studies they not only contribute to knowledge but train others for its pursuit. How widely universities are recognizing intercultural studies as an opportunity, and an obligation, is illustrated by grants made during 1955 in countries other than the United States including Canada, Great Britain, France, Turkey, Egypt, India, and Japan. Also observable is the growth of cooperation and effective communication among universities in countries distant from each other, with the result that new knowledge and perspectives are quickly shared.

These considerations are reflected in the Foundation's grant of $510,000 to McGill University in Canada for the work of its Institute of Islamic Studies. In its study of Islam as a religious and cultural phenomenon of the modern world, the institute deals with problems of theology, politics, and ethics which are the concern of millions from North Africa, through the Near East, to Pakistan and Indonesia. Selected scholars, older and younger, from those areas work at the institute, and there is a constant flow of information and insights between the institute and scholars in the field, Muslem and non-Muslem. The work of the institute since its establishment in 1951, despite its geographical distance from the Muslem world, has made it a respected and congenial center for the critical scrutiny of the problems of Islam.

During 1955 the Foundation continued to aid in the development of American studies in universities outside the United States with grants totaling more than $300,000. One such grant provides for cooperation in this effort between two Japanese universities at Kyoto—Kyoto University and Doshisha University—and the University of Michigan, which, for its part, has long maintained a program of Japanese studies. The emergence of inter-university

concern in the development of American studies is marked by grants to the German Association of American Studies, and for a summer conference held at University College, Oxford, at which the British Association of American Studies was organized.

The foregoing emphasis on university or inter-university enterprise implies no possible disregard for the contribution of the individual scholar or of small groups of scholars. Grants of this type represent a considerable range of subjects, including a comprehensive description of the Russian language, a study of the problems of linguistic policies, studies of modernization in the Arab States and in Turkey, a study of the cultural and literary history of Thailand, and a conference on historical writing on Southern Asia.

For the general development of intercultural understanding, there is probably no greater force than that of the press, and recently, more than ever, responsible journalists have been concerned with its fulfillment of this function. Two of their efforts to enhance the contribution of the press to intercultural understanding were aided by the Foundation during 1955. The International Press Institute, the establishment of which was aided in 1951 by the Foundation, received a further grant of $100,000 to expand its program of international conferences and the interchange of personnel. A grant of $94,000 enables the American Press Institute of Columbia University to include in its seminars editors from Latin America, the Near East, and Southeast Asia.

HUMANISTIC RESEARCH

Grants reported in this section reflect the continuing interest of the Foundation in what scholarly research in history, philosophy, and linguistics can contribute to the individual's better understanding of his past, his position in the world of thought, and his intercommunications with his

fellow men. Three major grants illustrate the range of this interest.

For years Professor Jean Piaget of the University of Geneva has worked on his now well-known studies of how knowledge comes to being in the minds of children. A grant, approved in 1955, to his university enables him during the next two years to study how the outcome of his earlier work relates to the development of knowledge in such fields as logic, linguistics, and mathematics, largely through the collaboration at Geneva with consultants whose approaches to this problem, while different, may prove parallel or convergent.

Studies of Kansas City, Missouri, by the Committee on Human Development of the University of Chicago came to the point where they needed the background which could be provided by a social, cultural, and economic history of the city. A grant to the university will enable a younger scholar, Dr. R. Richard Wohl, whose earlier work had prepared him for this task, to have the necessary time and assistance to carry it through. More generally, its outcomes should contribute substantially to a better understanding of the historical development which the emergence of cities of metropolitan character in the United States represents.

From time to time an institution emerges in which humanistic research assumes new dimensions and new penetration. Its influence comes to be felt not only in its publications, but in the training it affords. One such institution is the Italian Institute of Historical Studies, established in Naples by the late Benedetto Croce and now directed by his associate, Professor Federico Chabod. A grant of $55,000, approved in 1955, continues earlier support of its work.

The financial needs of humanistic research, while they may seem modest by comparison, for example, with those of the sciences, are no less crucial: typically, the scholar in the humanities needs time for research and writing, travel

to consult with others or to bring them to consult with him, library resources and a desk to work at, and, in some cases, the assistance of younger scholars who can, incidentally, learn by working with him. The problem for a foundation is to discover instances in which money can meet these needs, with reasonable promise of significant results.

THE ARTS

In the arts, the problem is somewhat different. For The Rockefeller Foundation, the aim is not patronage but assistance which will result in a broader enjoyment of the arts, and in a larger measure of public support for them after the necessarily limited period of Foundation aid.

For such an effort there appear to be few precedents. Such assistance as the arts have ordinarily received has been in the form of subsidy: in many countries, state support; in the United States, contributions to make up current deficits. The assumption seems to have been that the arts cannot survive without such subsidy. But all too rarely has an attempt been made to explore the contrary proposition, more often than not because funds to finance an experiment were lacking. Certainly, there is no over-all pattern for assistance which might help the arts to enhance their situation: the problems of each art are different, and differ further region by region and country by country. As grants reported under this heading indicate, the Foundation is still primarily concerned with how it can assist in the development of the arts in the United States, without disregard of promising opportunities elsewhere.

In the case of literature in the United States, there seems to be consensus on one strategic need, that for fellowships which may enable writers of promise, who have not yet won general recognition, to work toward its achievement. With the exigencies of publishing what they are, a

writer must apparently go further in the practice of his art than formerly before his work attracts a reading public. A three-year experiment with the award of literary fellowships through two literary reviews, *The Kenyon Review* and *The Sewanee Review,* seemed to show merit: the editors of such magazines are sufficiently close to coming writers to judge whose work would most benefit from an award in any given year; the decentralization of awards through several such agencies, all with high literary standards, but with somewhat differing points of view, seems to assure a fair allotment. Accordingly, the earlier grants to *The Kenyon Review* and *The Sewanee Review* were extended another three years in 1955, and similar grants were approved to *The Hudson Review* and to the *Partisan Review* early in 1956, providing for a total of 16 awards a year during this period.

Different needs in different arts are illustrated by three grants in music. A strategic need in music in the United States appears to be advanced training for conductors: the feasibility of arranging it is being tested under a grant to the American Symphony Orchestra League. To offer an enjoyment of music to more people, and to achieve a larger measure of public support, performing organizations must reach a larger constituency: a grant to the Little Symphony Society of Berkeley, California, will test the possibilities of its offering concerts in more communities of the Bay Region. Much of the larger audience for music comes as it gains young recruits: a grant to Young Audiences, Inc., will determine the extent to which its concerts in the schools can be expanded with this outcome. In this regard, two smaller grants in another art are noteworthy, those to the Art Institute of Chicago and to the San Francisco Museum of Art for an extension of their services in lending original paintings to the schools.

Finally, an art may develop in a new location, or in a new direction. A grant to the Virginia Museum of Fine

Arts in Richmond will help in discovering how a state institution devoted to the arts in general can bring drama within the scope of its activities. Though drama and religion have been closely linked, the larger possibilities of religious drama seem not to have been realized in the United States: a grant to the Union Theological Seminary of New York will allow an exploration of these possibilities by students, clergymen, and others concerned with radio, television, and the theatre.

As implied, the Foundation may be said to be learning its way in the arts, with few precedents for guidance. By this same token, the grants here reported cannot be regarded as precedents for other grants. In all probability only the general principles they embody are constant. The Foundation is keenly aware of broader needs in the arts, in the United States and elsewhere—and is keenly aware of the disparity of its resources and the magnitude of those needs. It is for such reasons that the assistance of The Rockefeller Foundation in the arts must remain relatively modest, strategic rather than remedial in character, selective rather than systematically inclusive as to recipients. The Foundation can hardly confront the apparent need of subsidy, of patronage; it can only help a few agencies in the arts to explore ways in which these seemingly persistent needs may be resolved.

SPECIAL PROJECTS

While the principal interests of the Foundation in the humanities remain those of the three preceding headings, the Foundation cannot neglect other "special" opportunities. In recent years these have comprised, in terms of grants approved, what might be termed the humane aspects of higher education, or, less formally stated, how individual students may become more individually involved in the process of higher education.

Perhaps the desirability of such involvement is most urgent in higher education that is predominantly scientific or technical. Thus, the major grant of 1955 under this heading was to the Massachusetts Institute of Technology for the development of a course in which the study of man and society has a more important place than is usually the case.

Other grants under this heading, each in its own way, have a similar bearing. For example, Canada shortly, it is to be expected, with its growing resources will meet for itself its own needs in the humanities: pending these developments, the Foundation made what is to be regarded as its final contribution toward the advanced training of humanistic personnel in Canada through a grant for pre- and postdoctoral fellowships to the Humanities Research Council of Canada.

Intercultural Studies

MCGILL UNIVERSITY

INSTITUTE OF ISLAMIC STUDIES

In the four years since its establishment in 1952, the Institute of Islamic Studies of McGill University, Montreal, Canada, has given special emphasis to the study of Islam as both a religious and cultural phenomenon of the modern world. It has been concerned with discovering and exploring possible avenues of mutual understanding between Islam and Christianity, and has sought to develop a program which would give students an opportunity to supplement disciplined and scientific knowledge of Islam, its institutions, formulations, and history, with a sympathetic understanding of its values and meaning.

Fundamental to the institute's approach to the interpretation of Islam has been cooperative study by both West-

erners and Muslems, and for this purpose Muslem scholars have been invited to the institute to participate in both teaching and research. At present the staff includes visiting professors from Egypt, Turkey, and Pakistan, and Muslems are represented also in the student body.

Under the leadership of Professor Wilfred C. Smith, the director, current work at the institute centers in three research seminars—Islamic Developments in the Modern Arab World, the Development of Secularism in Modern Turkey, and Modern Trends in Islam in India and Pakistan—and the curriculum includes formal courses on the heritage of classical Islam, Islamic history, geography, and languages. In 1953 a Master's degree in Islamic Studies was established by McGill, and by the end of the academic year 1954-1955 six theses for the degree had been accepted and three more were in preparation.

For general support of the Institute of Islamic Studies, The Rockefeller Foundation in 1955 made an outright grant of C$500,000 (about $510,000), with the understanding that during an initial ten-year period the university will expend only the income from this fund. The grant will be used primarily to ensure the continuation of Muslem participation on the staff of the institute, for travel to and from the Muslem world, and for further library acquisitions.

UNIVERSITY OF WASHINGTON

RESEARCH ON NORTHEAST ASIA

Its location in Seattle, an important port for commerce with the Orient and increasingly a point of entry for visitors by air, has led to a natural concern with the Far East at the University of Washington—a concern which is reflected in local business and public interest. Since the first decade of the twentieth century the university has included work on the Far East, particularly Northeast Asia, in its curriculum.

Both the teaching and research programs on Northeast Asia—China, Japan, and Korea—and Central Asia involve professors in a considerable number of different departments, including history, political science, economics, anthropology, and Far Eastern and Slavic Languages and Literature. Through emphasis on the Soviet Far East, Russian studies at the university are closely integrated with the work on the Far East, and coordination of the research projects is provided by a Far Eastern and Russian Institute directed by Professor George E. Taylor.

The Rockefeller Foundation has long supported programs in American universities contributing to more adequate American understanding of and relations with the other countries of the world. In 1955 the Foundation appropriated $250,000 as an outright grant to assist the University of Washington in stabilizing the programs on Northeast Asia and in recruiting able leadership for the work. The Foundation's grant has been made with the understanding that during an initial ten-year period the university will hold the principal of the fund intact, and expend the income only as it is matched by funds received from other sources for the same purpose.

KYOTO UNIVERSITY, DOSHISHA UNIVERSITY, AND THE UNIVERSITY OF MICHIGAN

AMERICAN STUDIES PROGRAM

One of the two leading American studies programs in Japan is that maintained in Kyoto under the sponsorship of Kyoto University, Doshisha University, and the University of Michigan. Initiated in 1952 as a summer seminar, the American studies program has since developed into a year-round activity, with two American professors, each for half of the school year, offering regular courses at the two Japanese universities on American affairs and thought. During the summer months when both are in residence, the Amer-

ican professors cooperate with Japanese professors in organizing and teaching the summer seminar. Recently provision was included in the program for visits by Japanese professors to the University of Michigan, which has long maintained a Japanese studies program.

Since 1952 The Rockefeller Foundation has given regular support to the American studies program; to provide for its continuation during the next three years, the Foundation in 1955 supplemented these earlier appropriations with grants of 15,400,000 yen (about $46,000) for the use of the joint Kyoto University-Doshisha University Committee on American Studies, and $84,000 to the University of Michigan.

SALZBURG SEMINAR IN AMERICAN STUDIES, INC.

Since the organization of the Salzburg Seminar in American Studies, Inc., in 1947, more than 1,700 Europeans, ranging from university doctoral candidates to judges, professors, and civil servants of established position, have studied various aspects of American life and thought at the seminar under the direction of 150 visiting American professors. To the many mature Europeans who are unable to visit the United States, the seminar has offered a unique opportunity for scholarly and objective study of American civilization.

During the summer months the seminar offers instruction in American literature, history, international relations and law, music and art, theatre, political science, economics, and sociology. At other times during the year, for periods of four weeks, intensive attention is given to a single subject. In response to the needs of its students, other subjects —American labor and industrial relations, for example— have recently been added to the curriculum. Lectures, seminars, and discussions, both formal and informal, are employed as methods of instruction.

During 1955 The Rockefeller Foundation made a grant of $125,000 to the Salzburg Seminar for use during the next five years. The present grant brings to a total of $328,000 the amount contributed by the Foundation toward support of the seminar.

INTERNATIONAL PRESS INSTITUTE

Established in 1951 with the aid of funds from The Rockefeller Foundation and from other sources, the International Press Institute, Zurich, Switzerland, is an autonomous agency representative of and supported by the free press of the world. Its membership is composed of staff members, bearing responsibility for editorial and news policies, of newspapers devoted to the principles of freedom of the press.

In addition to its own annual meetings, the International Press Institute has sponsored during the past few years a number of bi-national discussions among journalists, and has encouraged exchanges of ideas and personnel. It publishes the *I.P.I. Report,* a monthly bulletin dealing with current developments in international journalism; the Proceedings of its annual General Assemblies; and special reports, notably a series of surveys on such topics as *The News from Russia* and *The News from the Middle East.* Another special publication was a major study entitled *The Flow of the News.*

To help the institute expand its program of international conferences and exchanges of personnel, The Rockefeller Foundation appropriated $100,000 during 1955, a portion of which is contingent upon the institute's securing increased amounts in dues and donations from the press. It is hoped that with a stronger financial base it may be possible for the institute to serve effectively the free press in all parts of the world.

COLUMBIA UNIVERSITY

AMERICAN PRESS INSTITUTE

The American Press Institute of Columbia University has since 1948 conducted during the summer months nine seminars for foreign journalists chosen each year from a different country or region. The seminar program has combined training in and discussion of the principles and techniques of a free press with practical experience on selected American newspapers. The foreign editors have observed and discussed such aspects of journalism as the functions of a newspaper in its community, the relations between government and the press, and the operation of both large and small newspapers.

A program planned for the next five years by the institute represents an important extension of these earlier seminars. Each year editors from Latin America, the Near East, or Southeast Asia will be invited to the institute for study designed to meet the special needs of the press in their particular region. In addition to discussions at the institute, the editors will spend several weeks working with both small and large newspapers in cities whose economies might be similar to those of the guests' homes.

The Rockefeller Foundation, which has given support to the earlier seminars, in 1955 appropriated $94,000 toward the costs of the expanded program.

SIXTH SECTION, ECOLE PRATIQUE DES HAUTES ETUDES

AREA STUDIES

The Sixth Section of the Ecole Pratique des Hautes Etudes, Paris, established in 1947 to combine theoretical instruction with training and research in history and the social sciences, has become the most active French center for study of the modern Asiatic, Slavic, and Islamic worlds. Under the leadership of its president, Lucien Febvre, and its secre-

tary, Professor Fernand Braudel, the section has developed the interdisciplinary approach and group cooperation necessary to effective study of other cultures. Collaborative courses and research projects have been organized, and distinguished scholars drawn from many fields have been associated with the area studies programs.

To assist in the development during the next two years of Asiatic, Slavic, and Islamic studies at the Sixth Section, The Rockefeller Foundation in 1955 appropriated $60,000, which will be used primarily for research grants for both staff and students, the strengthening of library resources, and travel and fellowships to the United States.

HARVARD UNIVERSITY

RUSSIAN LANGUAGE RESEARCH

In 1950 Harvard University began a study of the Russian language which is unusual both for exhaustiveness of analysis and for cooperative effort by specialists from a wide variety of disciplines. Carried on in the Department of Slavic Languages and Literatures under the direction of Professor Roman Jakobson, the study has had the participation of scholars from other Harvard units and from many universities in the United States and Europe.

The central purpose of the Harvard project is an intensive examination of the Russian language under six categories: sound pattern; word pattern; sentence pattern; vocabulary and phraseology; stylistics; and cultural and political problems. The work already published has set new standards for the integration of anatomy and acoustics in speech analysis, and other phases of the study are expected to be similarly pioneering.

The Rockefeller Foundation, which in 1950 contributed $50,000 toward the Russian language project at Harvard University, appropriated $30,000 in 1955 toward its continuation during the next three years.

UNIVERSITY OF ROCHESTER

CANADIAN STUDIES

Although in recent years universities in the United States have inaugurated area studies programs dealing with almost every region of the globe, centers of research on the history and culture of Canada have been slow to develop. In 1952, motivated by the belief that Americans should achieve greater awareness of a country linked to the United States by facts of geography, language, history, and economics, the University of Rochester became the first American university to undertake a long-term commitment for work on Canada.

Through the cooperation of faculty members representing various disciplines, the university is organizing a systematic program in Canadian studies in its College of Arts and Science. Its library resources in the field are being expanded, and in the summer of 1954 the first of a series of conferences on Canadian-American relations was held. To develop its work in Canadian history, the university has appointed to its faculty Mason Wade, long recognized as a leading scholar in Canadian history and the author of a distinguished volume on French Canada.

A Rockefeller Foundation grant of $37,500, made during 1955, will assist the University of Rochester in strengthening the Canadian studies program during the next five years.

GERMAN ASSOCIATION OF AMERICAN STUDIES

The German Association of American Studies was formed in 1953 for the purpose of furthering the development of American studies in Germany. Its activities include meetings and conferences on the place of American studies in German universities and scholarly work in the field, as well as grants to younger scholars for aid in teaching and

research. Recently the association has begun publication of a Yearbook.

As a contribution toward the association's general expenses, and toward the costs of research grants and conferences, The Rockefeller Foundation in 1955 appropriated 90,000 German marks and $7,500 (about $30,000) for use during a three-year period.

EGYPTIAN SOCIETY FOR HISTORICAL STUDIES

Within the past few years a number of conferences have been held in the Arab countries to discuss ways in which Arab scholars can contribute to a better interpretation of Arab tradition, thought, and outlook. A plan for a volume on significant aspects of modernization in the Arab world emerged from the most recent of these conferences, held in 1954 by the Egyptian Society for Historical Studies.

The volume, covering the period from the first decade of the nineteenth century to the outbreak of World War II, will include chapters on a variety of topics—social structure, economics, language and literature, religion—written by Arab specialists in these fields. An introduction and a summary of the period since the end of the war will be provided by Dr. Mohamed Shafik Ghorbal. While the majority of the contributors will be Egyptian, the book will explore developments in Egypt, Lebanon, Syria, Jordan, and Iraq.

The Rockefeller Foundation, which has given previous support to the Arab studies conferences, in 1955 appropriated 6,500 Egyptian pounds (about $19,500) to the society to make possible the preparation of the proposed volume.

OTHER GRANTS

University of Adelaide, Australia: development of a Program in American Studies through studies in the United States by Dr. Brian R. Elliott, senior lecturer in English literature; $24,000 for a two-year period;

University of London, School of Oriental and African Studies, England: a conference on historical writing on Southern Asia, under the direction of Professor C. H. Philips; $23,500;

University of Delhi, India: research and training in modern Indian history, under the direction of Professor Bisheshwar Prasad; $21,000 for a two-year period;

Cornell University, Ithaca, New York: a study of the cultural and literary history of Thailand since 1850, by Dr. William J. Gedney; $15,130 for a two-year period;

University of Oxford, University College, England: a conference on American studies and fellowships in American studies; $12,500;

Turkish American University Association, Istanbul: preparation of a book on the development of modern Turkey; $10,000;

College of Arts and Sciences, Baghdad, Iraq: research by the Arts Faculty under the direction of Dr. A. A. Duri, dean; $10,000;

University of the South, Sewanee, Tennessee: Monroe K. Spears, editor, *The Sewanee Review;* to study the literary situation in India and Great Britain through contacts with writers, critics, and editors; $10,000;

Yale University, New Haven, Connecticut:

Professor Chitoshi Yanaga; to visit Southeast Asia and to study relations between countries in that area and Japan; $8,000;

John Palmer, editor, *Yale Review;* travel in connection with planning a writing seminar for scholars, and to obtain a direct acquaintance with writers, editors, publishers, and the cultural scene in the Near East; $3,125;

Columbia University, New York, New York:

A study of problems of linguistic policies, under the supervision of Professor John Lotz, director, Language and Communication Research Center; $8,000;

Research on comparative problems in the study of standardized languages, including a trip to Asia in the summer of 1956, by Professor Uriel Weinreich; $6,385;

Acquisition of a collection of objects and lantern slides relevant to the modern culture of China; $2,500;

Hebrew University, Jerusalem, Israel: studies of Near Eastern history, by Dr. Uriel Heyd and Dr. David Ayalon; $6,300;

Georgetown University, Washington, D. C.: Institute of Languages and Linguistics; research in language and international communication by Edmund S. Glenn; $6,000;

University of Lausanne, Switzerland: Professor René Rapin; research in the United States on American literature and observation of American academic procedures; $5,200;

Silliman University, Dumaguete, the Philippines: development of library resources on other countries in Asia; $5,000;

Harvard University, Cambridge, Massachusetts:

Toward the appointment of Dr. Helen A. Rivlin as a research fellow in the Center for Middle Eastern Studies; $4,500;

Professor Rasvihary Das, University of Calcutta, India; to teach Indian philosophy at Harvard during the academic year 1955-1956; $4,500;

Professor T. L. Green, University of Ceylon, Colombo: to consult with scholars in Great Britain and the United States on values, language, and related problems in educational research in Ceylon; $3,875;

University of Melbourne, Australia: development of its library collection on Indonesia; 1,500 Australian pounds (about $3,550);

University of Washington, Seattle:

Study of modern literature and drama in Japan, by Dr. Richard N. McKinnon; $3,350;

Study of relations between the Soviet Union and the Muslem world, by Dr. Ivar Spector; $2,000;

Princeton University, New Jersey: preparation for publication of a study of the Muslem Brotherhood, by Richard P. Mitchell; $3,200;

Mohamad Rasjidi, Indonesian Ministry of Foreign Affairs, Djakarta: to study in Paris and to visit other countries en route; $3,145;

Ecole Pratique des Hautes Etudes, Sixth Section, Paris, France:

Professor Fernand Braudel; to obtain a direct acquaintance in the United States with the organization of area studies programs and related subjects; $3,100;

Professor Jean Train; to visit the United States in connection with the teaching of Russian in area studies programs; $2,650;

R. P. Henri Chambre; to visit the United States in connection with the development of area studies programs and related research; $2,650;

University of Malaya, Singapore: study of Chinese societies by W. L. Blythe, former colonial secretary in Singapore for the British government; £928 (about $2,800);

University of Southern California, Los Angeles: a study of the recent history of India and Pakistan, by Professor T. Walter Wallbank; $2,500;

University of Florida, Gainesville: staff travel in the Caribbean area in connection with development of the university's library collection; $2,500;

McGill University, Montreal, Canada: conferences to be held during 1956 to develop studies of Pakistan in Canada and the United States; $2,500;

Far Eastern Association: meetings of its Committee on South Asia on ways to promote South Asian studies in the United States; $2,000;

Canberra University College, Australia: Professor Charles Manning H. Clark, Department of History, and Mrs. Clark; to travel in South and Southeast Asia to study the relations of these areas with Australia; 800 Australian pounds (about $1,800);

University of Cambridge, England: completion of a Union List of Chinese *Ts'ung-shu* in British and Continental collections, by P. van der Loon; $1,500;

University of Istanbul, Turkey:

Dr. Osman Okyar, docent in economics; to visit the Arab countries to gain a direct acquaintance with Near Eastern studies; $1,250;

Dr. Hifzi Timur, professor of law; to visit the Arab countries to gain a direct acquaintance with Near Eastern studies; $1,250;

Tokyo University, Japan: research by Dr. Hideo Kishimoto, professor of religion; $1,200;

Karnatak University, Dharwar, India: books on language, literature, and culture; $1,000;

University of Ankara, Turkey: Dr. Hamit Dereli, professor of English, Faculty of Letters; to visit centers of study of American literature in the United States, and for the purchase of books; $600;

Professor William C. Atkinson, University of Glasgow, Scotland: continuation of studies in the history of Latin American literature; $550;

A conference to promote study of Pakistan in the United States and Canada, held in Montreal during November, 1955; $525;

University of California, Berkeley: collection and distribution in the United States of information on current research and teaching on South Asia; $500;

Dr. A. Paul Stirling, lecturer, London School of Economics and Political Science, England: continuation in Turkey of a study of the social structure of Turkish peasant communities; $400.

Humanistic Research

UNIVERSITY OF GENEVA

PSYCHOLOGY, PHILOSOPHY, AND LOGIC

During the past thirty years Professor Jean Piaget of the University of Geneva, Switzerland, has become recognized as one of the most original and perceptive scholars in

the field of child psychology. In the course of his research he has endeavored to determine precisely the progressive stages by which a child acquires knowledge and control of the world around him, from his first kaleidoscopic sensations to his eventual comprehension and use of abstract concepts. To his work Professor Piaget has given the term "genetic epistemology"—the study of knowledge as it develops in the growing human child.

As Professor Piaget has pursued more deeply his study of the development of abstract thought in children, he has formed ideas which appear to be significantly related to current studies in psychology, physiology, logic, communication theory, and the philosophy and history of science, and which he wishes to explore with specialists in these fields. The interdisciplinary collaboration proposed promises both to carry the work forward, and to assist in the wider communication and use of its results.

The Rockefeller Foundation in 1955 appropriated 288,000 Swiss francs (about $69,000) to the University of Geneva to cover the expenses of visiting specialists in various fields and of a symposium for approximately ten scholars from other universities, as well as other necessary expenditures.

UNIVERSITY OF CHICAGO

STUDY OF KANSAS CITY

Because the emergence of cities of metropolitan character is one of the striking features of American history, The Rockefeller Foundation in 1954 gave support to several studies focusing on the development and distinctive characteristics of New York and Washington, D. C. During 1955 a third grant was made to support a similar study of Kansas City, Missouri, which will be undertaken by the Committee on Human Development of the University of Chicago.

The University of Chicago study, directed by Dr. R. Richard Wohl, Associate Professor of the Social Sciences, will explore the social, cultural, and economic history of Kansas City with the aim of tracing the development of the city's life as it is reflected in economic change and growth, in the emergence of the city's institutions and voluntary associations, and in the creation of an urban way of life. Among the subjects of study will be the influence on its history of the city's location on the rim of the Great Plains, the varying responses made over the years to the challenge of its environmental opportunities, and the changing urban mode of life from that of an inland frontier community to an air transportation center with growing national and international contacts.

The Foundation's grant of $64,500 will be available for expenses of the study during the next three years.

ITALIAN INSTITUTE OF HISTORICAL STUDIES

Since its establishment in 1946 by the late Benedetto Croce, noted historian and philosopher, the Italian Institute of Historical Studies, Naples, has played an increasingly important role in postwar Italian intellectual activity, particularly in the field of modern history. Seven volumes by faculty members and students have been published during the past five years, and have been recognized as contributing importantly to historical research.

Now under the distinguished leadership of Professor Federico Chabod, the institute has become a major center for the training of younger Italian historians, and a number of its former students have received appointments in Italian universities. Although its enrollment is limited to approximately thirty students, the institute also admits each year from five to eight students from other European countries and the United States, and is receiving a steadily increasing number of requests from foreign students who wish to study at the institute.

The Rockefeller Foundation, which has contributed toward the support of the Italian Institute of Historical Studies since 1949, made a further grant in 1955 of $55,000, to be used for the acquisition of library materials, fellowships for foreign students, and travel by both staff and students during the period ending September 30, 1960.

OTHER GRANTS

Lehigh University, Bethlehem, Pennsylvania: continued research on the British Empire before the American Revolution, by Professor Lawrence H. Gipson; $21,000 for a three-year period;

McGill University, Montreal, Canada:

Studies in the life of W. L. Mackenzie King; C$17,000 (about $17,850);

Completion of study on religion in Canadian history, by Professor H. H. Walsh; $2,900;

University of Oxford, England:

St. Antony's College; research on the history of the Reformation in Poland and Lithuania, by Dr. Stanislas Kot; $15,000 for a two-year period;

Somerville College; completion of translation and editing for publication of Ludwig Wittgenstein's manuscripts, by Miss G. E. M. Anscombe; £2,900 (about $8,700) for a three-year period;

Colegio de México, Mexico City: research and a training seminar on contemporary Mexican history, under the direction of Daniel Cosío Villegas; $13,880 for a two-year period;

Pan American Institute of Geography and History, Mexico City: Commission on History; preparation of a history of the Americas, under the direction of Dr. Silvio Zavala; $13,500;

Atlanta University, Georgia: a study of religion in history, by Dr. Rushton Coulborn, professor of history; $8,250;

Harvard University, Cambridge, Massachusetts:

Professor Robert L. Wolff; travel and research in the field of eastern European studies; $7,500;

Dr. Paul Ziff assistant professor of philosophy; preparation in Great Britain and Italy of a book on the philosophy of art; $1,500;

University of Hamburg, Germany: to strengthen its program in linguistics; $6,900;

University of Chicago, Illinois:

Research in American historiography, by Eric McKitrick and Stanley Elkins; $6,500;

Professor Seizo Ohe, Nippon University, Tokyo, Japan; to continue philosophical studies in the United States; $3,000;

Waseda University, Tokyo, Japan: research on the impact of the Japanese Military Administration on the Indonesian Independence Movement, under the direction of Shigetada Nishijima; $6,264;

New York University, New York:

Preparation of a biography of J. M. Synge, Irish playwright, by Professor David H. Greene; $6,000;

Professor Seymour L. Flaxman; purchase of books needed to complete his history of modern Dutch literature; $500;

American Philosophical Association, Western Division, Gambier, Ohio: continued exploration of promising new approaches in political and social philosophy; $4,500;

Kansai University, Osaka, Japan: comparative study of mysticism in English, American, and Oriental literatures, by Professor Masato Hori; $4,290;

Philippine Women's University, Manila: preparation of a biography of General Emilio Aguinaldo, by Carlos Quirino; 6,000 Philippine pesos (about $3,000);

Literary Society of Bengal, Calcutta, India: study of the main trends of cultural and social development in twentieth century Bengal, by Sibnarayan Ray; 12,000 rupees (about $2,640);

Lawrence College, Appleton, Wisconsin: completion of a book on phenomenology, by Professor Herbert Spiegelberg; $2,600;

Tokyo University, Japan: development of its library collection of political biographies, under the direction of Professor Yoshitake Oka; $2,500;

Brown University, Providence, Rhode Island: Professor W. F. Twaddell; consultation and cooperation with German linguists at the University of Hamburg; $2,500;

Fletcher School of Law and Diplomacy, Medford, Massachusetts: a study of the papers of Sir Mark Sykes and related materials in Great Britain, by Miss Jane Harbaugh; $1,600;

Dr. Labib Habashi, inspector of antiquities in Upper Egypt, Egyptian Service of Antiquities: to consult with Egyptologists in Europe on the interpretation of the Kamose stela recently discovered at Karnak; $1,450;

Princeton University, New Jersey: study of contemporary philosophy in German-speaking countries of Europe, by Professor Walter Kaufmann; $1,000;

Tokyo Union Theological Seminary, Japan: language study by Professor Takenosuke Miyamoto; $707.

The Arts

KENYON COLLEGE AND THE UNIVERSITY OF THE SOUTH

CREATIVE WRITING FELLOWSHIPS

The contribution which the award of fellowships can make to the development of personnel in the scientific and humanistic disciplines has long been recognized. In most of these fields awards are made for advanced study and re-

search. The manner in which creative writing can be fostered, however, has been less clear, for the writer's need is not for a program of study, but rather for the opportunity to practice his art in the way which best suits his individual needs and aspirations. For several years The Rockefeller Foundation has sought to encourage and assist creative work in literature through grants to other agencies for fellowships in creative writing.

During 1955 the Foundation made grants to two leading American literary reviews to enable them to continue the award of fellowships initiated three years ago with Foundation assistance. One grant makes $52,200 available to Kenyon College, Gambier, Ohio, for the award by the editors of *The Kenyon Review* of approximately four fellowships yearly during the next three years. The second grant, also for $52,200, will provide for a similar number of fellowships yearly to be awarded by the editors of *The Sewanee Review* of the University of the South, Sewanee, Tennessee. Early in 1956 the Foundation followed the grants to Kenyon College and the University of the South with similar appropriations for fellowship awards by the editors of the *Partisan Review* and *The Hudson Review*. Grants have been made to four different literary reviews in the hope that this decentralized approach would encourage both diversity of point of view and wider geographical distribution in the award of fellowships.

In the administration of the fellowship programs, the four journals have the advantages of wide acquaintance with the current work of younger authors and the tradition of long-standing devotion to high standards of literary excellence. Although the awards offered by the reviews involve no requirements of residence, formal study, or supervision, those responsible for the programs are prepared to give fellows such professional guidance and assistance as they may request. Ordinarily, applications for these fellowships will be accepted by the editors only on their invitation.

VIRGINIA MUSEUM OF FINE ARTS

COMMUNITY DRAMA PROGRAM

The Virginia Museum of Fine Arts in Richmond, whose "Artmobile"—a gallery on wheels used to display museum collections throughout Virginia—attracted national attention two years ago, has now initiated a community drama program, another project to extend its public service beyond the limits strictly conventional for a state museum.

In an attractive new theatre with a seating capacity of about 550, built in part by private contributions, the museum's officers are developing a community drama program under professional guidance but relying chiefly on voluntary participation. Toward initial equipment costs, the expenses of a professional staff, and the maintenance of a satisfactory program during an initial three-year period, The Rockefeller Foundation in 1955 made an outright grant to the museum of $150,000. A portion of the grant was a contribution to a capital fund to be drawn on to meet special and unusual expenses, such as occasional visiting talent.

UNION THEOLOGICAL SEMINARY

PROGRAM IN RELIGIOUS DRAMA

Since its earliest origin in religious ceremony, drama has, in most cultures and times, been closely linked with religion, informed by religious ideas, and often supported by the established church. Church-sponsored performances still constitute an important part of dramatic activity.

In an effort to raise standards of religious drama in the United States, and to provide clergymen responsible for community dramatic activities with training and experience, the Union Theological Seminary in New York has planned an experimental program in religious drama. Drawing upon the experience of notable British and American directors

and playwrights, the program will consist of a general course on religion and the arts with special reference to drama, a course on technical problems of production, and a drama workshop where three productions will be prepared during each semester. The new course will be available to regular students at the seminary, to directors of religious drama who will be encouraged to come to the seminary for a year or more of study, and to those concerned with theatre, radio, and television in New York who are also interested in religious drama.

To assist the Union Theological Seminary in inaugurating the program in religious drama, The Rockefeller Foundation in 1955 appropriated $55,000, to be used during the next four years toward expenses of visiting staff, scholarships, and necessary equipment.

BOSTON SYMPHONY ORCHESTRA

TANGLEWOOD REVOLVING SCHOLARSHIP FUND

The Boston Symphony Orchestra gave the first Berkshire Festival concerts on their present Tanglewood, Massachusetts, site in the Berkshire Hills in 1938. Two years later the orchestra opened a school at Tanglewood where more than 4,000 students, including several hundred from other countries, have since studied orchestral performance, chamber music, opera, choral singing, and composition during the summer months.

A considerable proportion of the personnel of the major United States symphony orchestras, and many others active in the field of music in this country, include a period at Tanglewood among their educational experiences. In a substantial number of instances this has been made possible by the school's generous scholarship policy, for which the Tanglewood Revolving Scholarship Fund was set up some years ago. Efforts are now being made to broaden the base of support for the fund throughout the country.

The Rockefeller Foundation assisted the Boston Symphony Orchestra with the costs of opening the Berkshire Music Center in 1940, and in 1955 appropriated $125,000 to the orchestra for the center's scholarship fund. It is hoped that the contingent nature of the grant, which is payable in amounts equal to the sum in excess of $15,000 raised each year from other sources for the same purpose, will be helpful in stimulating an increase in the capital of the fund.

LOUISVILLE PHILHARMONIC SOCIETY, INC.

NEW MUSIC BY LIVING COMPOSERS

The Louisville Philharmonic Society two years ago undertook a major project to encourage contemporary composers by commissioning, performing, and recording new music, aided by a grant of $400,000 from The Rockefeller Foundation. The society had carried on these activities to a lesser extent for a number of previous years.

Under its new program, one of the special values of which has been its combination of direct financial assistance to individual composers with the assurance of a broad public hearing for their work, the society has awarded 73 commissions for orchestral works, four for short operas, and 20 for student compositions. Over 20 of the commissioned orchestral works and one opera have been recorded and issued to subscribers following their performance in Louisville.

In addition to their initial performance, a number of the commissioned pieces have been performed by other orchestras both in this country and abroad. They have also received general hearings through records. Half-hour programs based on recordings ran for 13 weeks in 1954 on a major United States radio network, and subscriptions for the record series are held by more than 20 broadcasting systems in other countries. In addition, the United States

Information Agency has purchased 117 sets of the first records issued for its libraries overseas.

The Foundation in 1955 concluded its assistance to the project with a grant of $100,000, available with funds remaining from the earlier grant through June 31, 1956. Of the new grant, $25,000 was a contribution to a revolving fund established by the society in connection with the program.

YOUNG AUDIENCES, INC.

Since 1952 Young Audiences, Inc., has sponsored more than 350 chamber music concerts directed primarily toward the musical interest and experience of children. These concerts have not only brought live music to a larger number of American communities than could be reached by touring orchestras, but have also provided a wider base of support for musicians.

The majority of concerts booked by Young Audiences Inc., are given in schools. Usually a first free demonstration concert is followed by several concerts paid for by interested groups such as Parent-Teacher Associations. The musicians explain the properties of their instruments and of the music they are to play, and invite their young audiences to ask questions.

The enthusiasm which the program of Young Audiences, Inc., has aroused in both audiences and musicians has been such that local and regional groups are rapidly developing to carry it on in different communities. Toward the costs of expanding the program, the Foundation has appropriated $75,000, available over five years.

AMERICAN SYMPHONY ORCHESTRA LEAGUE, INC.

ADVANCED TRAINING FOR CONDUCTORS

For several years the American Symphony Orchestra League, Inc., has sponsored a series of workshops for the

conductors of smaller orchestras which have proved beneficial in raising standards of conducting throughout the United States. Its experience with the workshops has suggested to the league a program which will offer a few of the most promising younger conductors an opportunity for final, intensive training in their art not ordinarily available to musicians in this country.

During the next three years the league will make arrangements for three conductors to work both with major symphony orchestras and professional opera companies. Under the close supervision of master conductors, the "apprentice" conductors will participate in rehearsals, direct the orchestras, and discuss various problems of conducting with the orchestras' regular conductors and leading members.

The Rockefeller Foundation appropriated $49,500 in 1955 to assist the American Symphony Orchestra League, Inc., Charleston, West Virginia, with the expenses of the new program. The grant includes a modest contribution toward the costs of the participating orchestras.

LITTLE SYMPHONY SOCIETY OF BERKELEY

Since its organization in 1951, the Little Symphony Society of Berkeley, California, has developed an active supporting membership now numbering nearly 200, and played with notable success at both public performances in Berkeley and San Francisco and private chamber music concerts in the homes of its members. To provide richer musical opportunities for additional small communities in the San Francisco Bay area, as well as better support for its musicians, the Little Symphony has undertaken an effort to expand its activities to other localities which can be reached without extensive travel.

Because the experience of the Little Symphony suggests a possible solution to the complementary problems of

achieving a wider base of support for small concert ensembles, and of increasing the availability of live symphonic music in communities unable to meet the high booking costs of major symphonies, The Rockefeller Foundation has appropriated $21,000 to assist the Little Symphony in establishing the personal contacts needed to augment its membership and to include in its concert schedule a larger number of small communities.

CONNECTICUT COLLEGE

SUMMER SCHOOL AND FESTIVAL OF THE DANCE

The Connecticut College Summer School and Festival of the Dance, one of the principal centers of instruction in modern dance in the United States, will record and publish the choreography of a number of modern dance productions in the next several years. These records, available for use at other institutions throughout the country as well as at Connecticut College, will provide the beginning of an archive as background for further development in this field.

The college will experiment with filming and notation by the new system, "Labanotation," the recent development of which made the project possible. Such leaders in modern dance as Martha Graham and Doris Humphrey will personally direct the presentation and recording of their own productions.

For this and other phases of the dance program, including the development of a series of public lectures on aesthetics, The Rockefeller Foundation in 1955 appropriated $33,400 to Connecticut College for use during the next three years.

OTHER GRANTS

Silliman University, Dumaguete, the Philippines: study, recording, arranging, and performance of Philippine music, by Miss Priscilla V. Magdamo; $13,900 for a two-year period;

Curtis Institute of Music, Philadelphia, Pennsylvania: an analysis of the production problems of modern opera, by Dr. Herbert Graf; $12,000 for a two-year period;

Poets' Theatre, Inc., Cambridge, Massachusetts: for the appointment of playwrights in residence, for expenses incurred in bringing authors to Cambridge during the production of their work, and for the purchase of a tape recorder; $10,000;

Dance Notation Bureau, New York: preparation of textbooks on Laban dance notation, by Miss Ann Hutchinson; $10,000;

Columbia University, New York:

Barnard College; study of recent developments in electronic music as they affect musical composition, by Professor Otto Luening and Professor Vladimir Ussachevsky; $9,955;

Adaptation of traditional Chinese drama for music and dance production in the United States, by Chou Wen-chung; $9,000;

Further study of the potential audience for the performing arts in the New York Metropolitan area; $4,000;

Educational Television and Radio Center, Ann Arbor, Michigan: experimentation in the treatment of poetry by radio, under the direction of Lewis Hill; $8,250;

Queen's University, Kingston, Canada: conference on The Canadian Writer, His Media and His Public; $7,875;

American Symphony Orchestra League, Inc., Charleston, West Virginia:

Organization in the league's office of information on symphony orchestras and related groups in the United States and Canada; $7,300;

Preparation of model patterns of organization and procedures for the executive boards of symphony orchestras in the United States and Canada; $6,082;

Victoria University of Manchester, England: Dr. Thomas Howarth, senior lecturer in architecture; to study architectural education and practices in the United States; $6,650;

University of Hawaii, Honolulu: collection of materials on non-Western music and travel in Asia in this connection, by Miss Barbara B. Smith, associate professor, Department of Music; $6,000;

University of California, Los Angeles: appointment of playwrights in residence in the Department of Theatre Arts; $6,000;

Usmar Isma'il, producer-director, Indonesian National Film Company, Ltd., Djakarta: to visit schools of drama principally in the United States and Europe, and to observe methods of instruction in this field; $5,675;

Indian Institute of Art in Industry, Calcutta: Ajit Mookerjee, director; to visit centers of new work in design and the visual arts in Europe, the United States, Japan, Indonesia, and India; $5,650;

American Studies Association, Philadelphia, Pennsylvania: a conference on the group of American poets known as the Fugitives, held at Vanderbilt University during May, 1956; $4,950;

American National Theatre and Academy, New York: preparation of a book on the problems attendant upon organizing and running professional arena theatres, by Edward Mangum; $4,364;

Bryn Mawr College, Pennsylvania: continued study in Japan of modern Japanese painting, by Miss Ellen D. Psaty; $3,500;

Art Institute of Chicago, Illinois: experimental program to increase interest in contemporary original works of art in the public schools of Chicago; $3,000;

San Francisco Museum of Art, California: experimental program to increase interest in contemporary original works of art in the public schools of San Francisco; $3,000;

Professor Seike Kiyosi, Tokyo Institute of Technology, Japan: to study design and architecture in Europe en route back to Japan from the United States; $2,700;

The Indonesian National Theatre Academy Foundation, Djakarta: books and materials on drama and related arts; $2,000;

Anis Fuleihan, director, National Conservatory of Music, Beirut, Lebanon: equipment and supplies for the conservatory; $1,500;

Dr. Mustafa Mosharaffa, Cairo, Egypt: study of current activities in music in Egypt; $1,500;

Modern Poetry Association, Chicago, Illinois: preparation of a special issue of *Poetry* devoted to modern Japanese poetry in English translation, under the direction of Satoru Sato; $1,150;

Neil Hutchison, director of drama and features, Australian Broadcasting Commission: to gain a direct acquaintance with work in radio and television in the United States and Canada; $1,000;

University of Ceylon, Colombo: books on drama and related arts; $1,000;

American Music Center, Inc., New York: to purchase and present collections of American music to the Turkish State Conservatory in Ankara and to the Istanbul Conservatory; $850.

Special Projects

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

DUAL MAJOR PROGRAM

The Massachusetts Institute of Technology, one of the foremost technological institutions in the United States, has for many years maintained distinguished programs in the humanities and social sciences, and required all undergraduate students in the regular scientific and technical courses to take substantial work in general education. In an effort to encourage a still more fruitful cooperation between scientific and humanistic education, the institute in 1955 inaugurated a dual major program which extends importantly the emphasis on general education in which it has pioneered.

The new dual major program permits a student to elect a major in the humanities or social sciences concur-

rently with one in a field of science or technology. Approximately equal emphasis is placed on the two major subjects over a four-year period, and a special effort is being made in planning the upper class courses, and particularly the senior seminars, to provide reciprocal benefits between the work in the humanities and social sciences and the students' technical or scientific courses. Students following the program will receive a B.S. degree without professional status at the end of the four-year course, but may qualify for a professional degree in any of the engineering fields represented at M.I.T. by taking a fifth year of study in their particular scientific field.

During 1955 The Rockefeller Foundation made an outright grant of $300,000 to the Massachusetts Institute of Technology to assist in the development of the dual major program during the next ten years.

HUMANITIES RESEARCH COUNCIL OF CANADA

Formed in 1943, the Humanities Research Council of Canada is supported in part by subscriptions from Canadian universities and is directed by 16 scholars representative of different disciplines and universities. It seeks to encourage the development of humanistic studies in Canada through the initiation of research projects, sponsorship of regional and national conferences of humanists, and the organization of local associations of laymen and scholars interested in the humanities.

One of the council's most important activities is a pre- and postdoctoral fellowship program which during the past two years has enabled approximately 100 younger scholars to pursue advanced training. An unprecedented population growth and economic expansion have created an urgent need for humanities personnel to fill posts in Canada's colleges and universities, and, with a few exceptions, the council's

fellowship program is the only avenue through which students in the humanities can seek financial aid for advanced study.

To assist the Humanities Research Council of Canada to continue its fellowship program and other activities, The Rockefeller Foundation in 1955 appropriated C$50,000 (about $52,500), payable on a matching basis of one dollar for every dollar secured from Canadian sources for the same purpose. Previous grants to the council total more than $100,000.

OTHER GRANTS

Colgate University, Hamilton, New York: faculty studies of the role of the humanities in the university's program of general education; $10,000;

Chosho Goeku, president, University of the Ryukyus Foundation, Shuri City, Okinawa: to visit the United States accompanied by Roy Nakada; $4,575;

President Monkichi Namba, Kobe College, Japan: to study and observe women's educational institutions in the United States; $4,300;

Technological University, Delft, Netherlands: Dr. J. Kiers, dean of students; to observe British and American educational practices; $3,050;

University of Leiden, Netherlands: A. A. van den Brandeler, dean of students; to observe British and American educational practices; $3,050;

Thompson Webb, Jr., director, University of Wisconsin Press, Madison: to explore the feasibility of a program of scholarly publications by means other than conventional printing; $2,200;

Professor Natividad P. Verzosa, Department of Library Science, University of the Philippines, Quezon City: to visit libraries in the United States and western Europe; $2,150;

Fund for grants of amounts not exceeding $500 for allocation under the supervision of the Director; $2,000;

National Higher School of Islam Religion, Jogjakarta, Indonesia: purchase of books and publications outside Indonesia; $2,000;

Muslem University of Indonesia, Makassar: purchase of books and publications outside Indonesia; $2,000;

University of Louisville, Kentucky: Dr. J. J. Oppenheimer, dean, College of Arts and Sciences; to examine recent developments in higher education in Germany; $1,750;

Lady Mary Ogilvie, principal, St. Anne's College, University of Oxford, England: to visit the United States in connection with problems of higher education for women in the United Kingdom; $1,000.

OTHER APPROPRIATIONS

GRANTS which fall somewhat outside the specific programs, or which include elements relating to more than one aspect of the Foundation's work, are taken from general funds. In 1955 four appropriations and nine smaller grants were of this character.

COMMONWEALTH SCIENTIFIC AND INDUSTRIAL RESEARCH ORGANIZATION

CONSTRUCTION OF A RADIO TELESCOPE

The science of radio astronomy, although originating about twenty years ago, has come into prominence only since the end of World War II, largely as a result of wartime developments in electronics and radar. In a very short time it has taken an important place beside optical astronomy, and already has a number of discoveries to its credit.

The new science is the study of celestial bodies through the "radio waves" they reflect or emit. Radio waves are one of the two important wave-length bands of electromagnetic radiation which penetrate to the earth's surface from outer space. They are emitted in the heavens by hot and cool clouds of hydrogen, by the sun, by powerful discrete sources both within and outside our galaxy known at present as "radio stars," and also by other dispersed sources still not understood.

Radio waves can be used to discover a number of facts about their sources, such as distance and size. It is possible

to receive and study them with the help of the extremely large antenna system of a radio "telescope."

The antenna system of a radio telescope has to be large for two basic reasons: to gather a useful amount of energy, and to give a usefully sharp indication of the direction from which it comes. The major radio telescope in the world at the present time is being completed at Manchester, England. It has an antenna in the form of a parabolic "dish" 150 feet in diameter, mounted so that it can be pointed toward any section of the sky, and can be turned to follow a celestial point as the earth rotates.

Plans are going forward for the construction of similarly large telescopes in many other parts of the world. Of these, only one will provide for observation of the southern hemisphere of the sky.

The southern telescope will be built in Australia by the radiophysics division of the Commonwealth Scientific and Industrial Research Organization. Under the direction of Dr. E. G. Bowen, this group has already done extensive work in radio astronomy, obtaining facts about many parts of the universe formerly unknown. In addition to a number of smaller experimental aerial installations, the group has constructed a parabolic dish 36 feet in diameter and an 80-foot reflector. The present dish can be moved in elevation only and the reflector is of fixed position.

Toward the costs of the new Australian radio telescope, to be built during the next three years half at government expense and half with funds collected from other sources, the Foundation has appropriated $250,000. The total cost is expected to be well over a million dollars.

THE CONSERVATION FOUNDATION

During the seven years since its organization, the Conservation Foundation has sought "to promote conservation of the earth's life-supporting resources," and to encourage

wider knowledge and understanding of their distribution, wise employment, and relationship to each other and to human existence. It has been equally concerned with the changing demands made upon natural resources by growing populations and altered modes of life.

The Conservation Foundation seeks to advance its purposes through research and education. It carries out surveys, basic engineering studies, and studies of public policy and administration with respect to natural resources. Upon completion of a research project, the foundation seeks to make it effective through such educational media as publications, documentary films, and television features. The foundation has also made a critical inventory at the college and university level of the present status of conservation teaching.

A $45,000 grant from The Rockefeller Foundation, together with funds remaining from an earlier appropriation, will provide the Conservation Foundation with $10,000 a year for its general administrative budget during each of the five years beginning July 1, 1955.

MEXICAN-AMERICAN CULTURAL INSTITUTE

One of a series of binational cultural centers in the different capitals of Latin America, the Mexican-American Cultural Institute in Mexico City plays an important role in cultural life in Mexico and in relations between the two countries. While perhaps its largest single function is the provision of Spanish and English language instruction, the institute's varied activities include art exhibitions, in some cases assistance to the fellowship programs of other organizations, and sponsorship of the bilingual Writing Center, which has contributed substantially to the development of Mexican authors and of American authors resident in Mexico.

Two years ago the institute embarked on a campaign for the funds needed to establish permanent headquarters

in Mexico City. Although Mexican firms and individuals and the American community in Mexico have given generously toward the institute's support, additional funds are necessary to meet the costs of purchase and improvement of the site now occupied by the institute. During 1955 The Rockefeller Foundation, which has a sizeable field staff resident in Mexico City, contributed $35,000 to assist the institute in meeting these expenses.

NATIONAL ACADEMY OF SCIENCES

ATOMIC RADIATION

The effect of atomic radiation on living organisms has become a matter of urgent concern not only because of the development of nuclear weapons, but also because nuclear energy and radioactive materials will be increasingly used throughout the world for peaceful purposes, as for example in medical research and treatment, and in industrial power installations.

The effects of radiation on food, its genetic effects in human beings and animals, and such problems as how to dispose of radioactive wastes safely are only a few aspects of the general problem.

The Foundation gave financial support to various nuclear research projects long before either the creative promise or the implicit threats of nuclear research began to materialize. In 1955 The Rockefeller Foundation made grants totaling $25,000 to the National Academy of Sciences in Washington for preliminary work toward a full-scale study of the effects of atomic radiation on living organisms.

OTHER GRANTS

Sarah Lawrence College, Bronxville, New York: study of the post-college experience of former students as it relates to the educational program; $10,000;

United States Committee for the United Nations, Washington, D.C.: toward the expenses of a tenth anniversary program of information and education, to be carried on in cooperation with the American Association for the United Nations; $10,000;

John Carroll University, Cleveland, Ohio: a study of problems involved in increasing student enrollments in the institutions of higher education in Ohio, to be undertaken by the Committee on Expanding Student Population of the Ohio College Association; $7,500;

Dr. Leona Baumgartner, Commissioner of Health of the City of New York, and Dr. Nathaniel Elias, chemical engineer, New York: to serve as consultants to the Ministry of Health of India, and to visit other countries in Southern Asia; $6,500;

University of Michigan, Ann Arbor: Dr. James M. Davis, director, International Center; to visit countries from which foreign students come to the University of Michigan; $4,500;

Harvard University, Cambridge, Massachusetts: Wilbur J. Bender, dean of admissions and financial aids; study of college and university admission policies in Great Britain; $2,400;

American Hospital of Paris, France: for operating costs of a mass miniature chest X-ray apparatus; $1,500;

Columbia University, New York: Dean Louis M. Hacker, School of General Studies; study in England of university experience with the award of external degrees through qualifying examinations; $1,500.

FELLOWSHIPS AND OTHER STUDY AWARDS

THE Foundation's fellowship appointments are integrated with the interests of its several programs. Through fellowships, chiefly for postdoctoral study, the Foundation seeks to advance knowledge in a wide variety of fields in medical education and public health, biological and medical research, agriculture, the social sciences, and the humanities. Fellowships are awarded on an international basis to outstanding men and women who have completed their specialized training, and who have shown promise of making important contributions to their fields in their native countries.

During 1955 a total of 357 persons held Foundation fellowships. This number includes 181 fellowships awarded in previous years and continued into 1955, and 176 new awards. Their distribution by program is as follows:

	Number of fellows in 1955	Awards made in 1955	Awards continued into 1955
Agriculture	15	15	0
Biological and Medical Research	8	8	0
Division of Medicine and Public Health[1]	106	29	77
Humanities	50	30	20
Medical Education and Public Health	44	44	0
Division of Natural Sciences and Agriculture[1]	94	30	64
Social Sciences	40	20	20
	357	176	181

[1] As a result of action by the Board of Trustees during April, 1955, these Divisions have been eliminated as formal units.

The fellows in 1955 came from 44 different countries. Countries represented by three or more fellows were:

Argentina	5
Australia	8
Brazil	43
Chile	14
Colombia	19
Denmark	4
France	10
Germany	13
Great Britain	19
India	29
Italy	11
Japan	34
Korea	5
Lebanon	7
Mexico	19
Netherlands	5
Norway	6
Peru	15
Philippines	10
Sweden	9
Switzerland	4
Turkey	6
United States	16
Uruguay	10

Fellowships were also held during 1955 by individuals from the following countries: Austria (2); Belgium (2); British West Indies (1); Burma (1); Ceylon (1); National Republic of China (2); Costa Rica (1); Cuba (1); Egypt (2); Finland (2); Guatemala (1); Honduras (1); Indonesia (2); New Zealand (2); Pakistan (2); Portugal (2); Spain (1); Syria (1); Uganda (1); and the Union of South Africa (2). Six fellows during 1955 were appointed from the World Health Organization.

The Rockefeller Foundation made available a total of $1,175,000 for its fellowship activities during 1955, allo-

cated for use by the programs as follows: Agriculture, $180,000; Biological and Medical Research, $200,000; Humanities, $215,000; Medical Education and Public Health, $405,000; and Social Sciences, $175,000. To support the fellowship program during 1956 the Foundation has appropriated $1,255,000.

In addition to the fellowships awarded and administered directly by the Foundation, national agencies have awarded fellowships with funds contributed in 1955 and previous years by the Foundation. These agencies administered a total of 113 fellowships during 1955:

National Research Council	
Medical Sciences	12
Natural Sciences	6
Social Science Research Council	52
British Medical Research Council	12
Canadian Social Science Research Council	31
	113

During 1955 the Foundation appropriated $485,000 to the Social Science Research Council to be used for fellowship awards during the period ending June 30, 1959.

Below is a listing of the 176 individuals who in 1955 were awarded fellowships by The Rockefeller Foundation, and the five fellows appointed during 1955 by the Medical Research Council of Great Britain. The fellowships awarded by the BMRC have been included in this listing because the fellows received guidance and supervisory assistance from Foundation fellowship advisers.

The following information is included for each individual: name; country of origin; date of birth; highest degree; major field of interest; fellowship-awarding agency or program; institution with which fellow was affiliated when appointed; principal countries of fellowship study; and date of fellowship.

ABE, MASAO (*Japan*) *b. 1915.* B.A., Kyoto Univ. 1944. Philosophy (DH). Appointed from Nara Liberal Arts Univ., Nara. *Place of Study:* U.S.A., 1955–.

ACHESON, ROY MALCOLM (*England*) *b. 1921.* D.M., Univ. of Oxford 1954. Medicine (BMRC). Appointed from Univ. of Oxford. *Place of Study:* U.S.A., 1955–.

AGAWA, HIROYUKI (*Japan*) *b. 1920.* B.A., Univ. of Tokyo. Literature (H). *Place of Study:* U.S.A., 1955–.

AKÇAN, AYSE YILDIZ (*Turkey*) *b. 1928.* Grad., Turkish State School of Dramatic Art, Ankara, 1948. Drama (H). Appointed from Turkish State Theatre, Ankara. *Place of Study:* U.S.A. 1955–.

ALBANI, FÉLIX (*Argentina*) *b. 1915.* Ing. Agr., Univ. of Buenos Aires 1938. Agriculture (Nonconventional—Experimental Climatology) (DNSA). Appointed from Ministry of Agric., Mendoza. *Place of Study:* France, 1955–.

ALVAREZ, ALFRED (*England*) *b. 1929.* B.A., Univ. of Oxford 1952. Literary Criticism (DH). Appointed from Univ. of Oxford. *Place of Study:* U.S.A., 1955–.

ARAGON, POTENCIANO ROSARIO (*Philippines*) *b. 1914.* M.D., Univ. of the Philippines, Manila, 1940. Public Health Administration (IHD); Public Health Bacteriology (DMPH). Appointed twice from Univ. of the Philippines. *Place of Study:* U.S.A., 1941-1942; 1955–.

ARNITA, SALVADOR (*Lebanon*) *b. 1915.* Teacher's Dipl., The Guildhall School of Music, London, 1936. Music (H). Appointed from the American Univ. of Beirut. *Place of Study:* U.S.A. 1955–.

ASSELINEAU, JEAN MARCEL (*France*) *b. 1921.* Dr.Sc., Univ. of Paris 1950. Biochemistry (DNSA). Appointed from the Nat'l Center of Scientific Research, Paris. *Place of Study:* Sweden, 1955–.

ASTRALAGA DI RUGGIERO, ROBERTO (*Colombia*) *b. 1924.* Ing. Agr., Nat'l Univ. of Colombia, Medellín, 1952. Agriculture — Plant Science (Plant Breeding) (DNSA). Appointed from Ministry of Agric., Palmira. *Place of Study:* U.S.A., 1955–.

AYLLON RODRIGUEZ, GUSTAVO (*Peru*) *b. 1929.* D.V.M., Univ. of San Marcos, Lima, 1953. Veterinary Science — Radiology (A). Appointed from Univ. of San Marcos. *Place of Study:* U.S.A., 1955–.

AYYAD, ABD-ELFATTAH SHUKRY (*Egypt*) *b. 1921.* Ph.D., Univ. of Cairo 1953. Intercultural Studies (H). Appointed from Univ. of Cairo. *Place of Study:* U.S.A., 1955–.

BABA, YOSHIYUKI (*Japan*) *b. 1908.* B.S., Kyoto Imperial Univ. 1934. Statistics (SS). Appointed from Shiga Univ., Hikone City. *Place of Study:* U.S.A., 1955–.

BADAWI, BATISHWA LOCO (*Lebanon*) *b. 1929.* Nursing Dipl., American Univ. of Beirut 1952. Public Health Nursing (MEPH). Appointed from

American Univ. Hosp., Beirut. *Place of Study:* U.S.A., 1955–.

BARBOSA, ANTONIO MOTTA DE SOUZA (*Brazil*) *b. 1923.* M.D., Univ. of Recife 1953. Cybernetics (DMPH). Appointed from Univ. of Recife. *Place of Study:* U.S.A., 1955–.

BARKER, SIDNEY ALAN (*England*) *b. 1926.* Ph.D., Univ. of Birmingham 1950. Photosynthesis (DNSA). Appointed from Univ. of Birmingham. *Place of Study:* U.S.A., 1955–.

BARROSO DE OLIVEIRA, MARIA CLAYDE TEIXEIRA (*Brazil*) *b. 1923.* Nursing grad., Univ. of São Paulo 1947. Nursing Education (MEPH). Appointed from Univ. of Bahia, Salvador. *Place of Study:* Canada, 1955–.

BELLO, EDUARDO SERVANDO (*Uruguay*) *b. 1925.* Ing. Agr., Univ. of the Republic, Montevideo, 1955. Agriculture — Agronomy (Pasture Management) (A). Appointed from Inter-American Inst. of Agric. Sciences, Montevideo. *Place of Study:* U.S.A., 1955–.

BELTRÃO, LAURO DE CASTRO (*Brazil*) *b. 1931.* M.D., Univ. of Paraná, Curitiba, 1954. Anatomy (MEPH). Appointed from Univ. of Paraná. *Place of Study:* Brazil, 1955–.

BENJAMIN, VARGHESE (*India*) *b. 1922.* M.B.B.S., Madras Med. Coll. 1947. Comprehensive Medical Care (MEPH). Appointed from Christian Med. Coll., Vellore. *Place of Study:* U.S.A., 1955–.

BERMÚDEZ BOLAÑO, RAFAEL (*Colombia*) *b. 1927.* M.D., Univ. of Cartagena 1955. Internal Medicine (MEPH). *Place of Study:* Colombia, 1955–.

BERTHET, JACQUES HENRI LÉON (*Belgium*) *b. 1926.* M.D., Univ. of Louvain 1950. Biochemistry —Enzymes (DNSA). Appointed from Inst. Interuniversitaire des Sciences Nucléaires, Centre de Louvain. *Place of Study:* U.S.A., 1955–.

BERTONI, JOSÉ (*Brazil*) *b. 1918.* Eng. Agr., Luiz de Queiroz Coll. of Agric., Piracicaba, 1943. Agriculture—Soil Science (Soil Conservation) (A). Appointed from Inst. of Agron. of the State of São Paulo, Campinas. *Place of Study:* U.S.A., 1955–.

BETANCOURT CASTELLAR, ALFONSO (*Colombia*) *b. 1924.* M.D., Univ. of Cartagena 1955. Internal Medicine (MEPH). *Place of Study:* Colombia, 1955–.

BRESSANI, RICARDO (*Guatemala*) *b. 1926.* M.S., Iowa State Coll. 1951. Agriculture — Biochemistry (Nutrition) (DNSA). Appointed from Purdue Univ. *Place of Study:* U.S.A., 1955–.

BRIGHT, WILLIAM OLIVER (*U.S.A.*) *b. 1928.* B.A., Univ. of California, Berkeley, 1949. South Asian Studies (DH). Appointed from Univ. of California. *Place of Study:* U.S.A., 1955–.

CABRERA, BENJAMIN D. (*Philippines*) *b. 1920.* M.D., Univ. of the Philippines, Manila, 1945. Medical Entomology (DMPH). Appointed from Univ. of the Philippines. *Place of Study:* U.S.A., 1955–.

CALVA CUADRILLA, EDMUNDO (*Mexico*) *b. 1922.* M.D., Es-

cuela Medico Militar, Mexico, 1946. Physiological Chemistry (MEPH). Appointed from Univ. of Wisconsin. *Place of Study:* U.S.A., 1955–.

CAMARGO, ANGELO PAES DE (*Brazil*) *b. 1916.* Eng. Agr., Luiz de Queiroz Coll. of Agric., Piracicaba, 1937. Agriculture — Climatology (A). Appointed from Inst. of Agron. of the State of São Paulo, Campinas. *Place of Study:* U.S.A., 1955–.

CAMARGO, RODOLPHO DE (*Brazil*) *b. 1927.* Dr. Agr., Univ. of São Paulo, Piracicaba, 1953. Agriculture — Food Technology (DNSA). Appointed from Univ. of São Paulo. *Place of Study:* U.S.A., 1955–.

CAMPOS, AMADO C. (*Philippines*) *b. 1924.* M.S., Univ. of Maryland 1952. Agriculture — Animal Science (Animal Breeding) (A). Appointed from Univ. of the Philippines. *Place of Study:* U.S.A., 1955–.

CARLEVARO CASTELLÁ, CARLOS HUMBERTO (*Uruguay*) *b. 1919.* D.V.M., Univ. of the Republic, Montevideo, 1944. Agriculture — Veterinary Science (Physiology — Reproduction) (DNSA). Appointed from Univ. of the Republic. *Place of Study:* U.S.A., 1955–.

CARLUCCI, GIAN CARLO (*Italy*) *b. 1928.* Dr. in Law, Univ. of Milan 1952. Economics (SS). Appointed from Univ. of Milan and Ist. per gli Studi di Econ., Milan. *Place of Study:* U.S.A., 1955–.

CEPPELLINI, RUGGERO (*Italy*) *b. 1917.* M.D., Univ. of Milan 1944. Human Genetics (DMPH). Appointed from Univ. of Milan. *Place of Study:* U.S.A., 1955–.

CHACKO, LIZA WALLAPURAKAL (*India*) *b. 1910.* Ph.D., Univ. of Oxford 1951. Anatomy (MEPH). Appointed from Christian Med. Coll., Vellore. *Place of Study:* Australia, U.S.A., 1955–.

CHAIN, STANFORD TUN AUNG (*Burma*) *b. 1933.* B.A., Univ. of Rangoon 1954. History (H). Appointed from Univ. of Rangoon. *Place of Study:* U.S.A., 1955–.

COCRON, FRITZ (*Austria*) *b. 1918.* Ph.D., Univ. of Vienna 1948. Language, Logic, and Symbolism (DH); Intercultural Studies (H). Appointed from 1) Univ. of Paris; 2) Austrian Cultural Center in Paris. *Place of Study:* France and U.S.A., 1952-1954; U.S.A., 1955–.

CONGALTON, ATHOL ALEXANDER (*New Zealand*) *b. 1914.* M.A., Victoria Univ. Coll., Wellington, 1947. Social Psychology (DSS). Appointed from Victoria Univ. Coll. *Place of Study:* U.S.A., 1955–.

COSTA REIS, MARIA MANUELA (*Portugal*) *b. 1929.* Grad., Escola Técnica de Enfermeiras, Lisbon, 1952. Psychiatric Nursing (MEPH). Appointed from Escola Técnica de Enfermeiras. *Place of Study:* Canada, 1955–.

DAHL, OTTAR (*Norway*) *b. 1924.* Grad. (Hons.), Univ. of Oslo 1951. History (H). Appointed from Univ. of Oslo. *Place of Study:* U.S.A. 1955–.

DALLAS, KENNETH MCKENZIE

(*Australia*) *b. 1902.* B. Com., Univ. of Tasmania, Hobart, 1928. Economics (DSS). Appointed from Univ. of Tasmania. *Place of Study:* Great Britain, 1955–.

DALZIEL, KEITH (*England*) *b. 1921.* B.Sc., Univ. of London 1944. Biochemistry (BMRC). Appointed from Univ. of Oxford. *Place of Study:* Sweden, 1955–.

DAVIES, DAVID DENZIL (*England*) *b. 1924.* Ph.D., Univ. of Sheffield 1954. Biochemistry—Plants (BMR). Appointed from Univ. of Oxford. *Place of Study:* U.S.A., 1955–.

DE ALBO, MYRIAM PIRIA (*Uruguay*) *b. 1928.* Grad., Univ. of the Republic, Montevideo, 1953. Nursing Education (DMPH). Appointed from Clinic Hosp., Montevideo. *Place of Study:* U.S.A., 1955–.

DE COCCO, SOFIA GONZÁLEZ (*Uruguay*) *b. 1925.* Grad., Univ. of the Republic, Montevideo, 1953. Nursing Education (DMPH). Appointed from Univ. of the Republic. *Place of Study:* U.S.A., 1955–.

DE FREITAS, DALTON LINTZ (*Brazil*) *b. 1921.* M.D., Univ. of Minas Gerais, Belo Horizonte, 1947. Physiology (MEPH). Appointed from Faculty of Med. of Juiz de Fóra. *Place of Study:* Brazil, 1955–.

DE LEY, JOZEF (*Belgium*) *b. 1924.* Ph.D., State Univ. of Ghent 1949. Biochemistry — Carbohydrates (DNSA). Appointed from State Univ. of Ghent. *Place of Study:* U.S.A., 1955–.

DEL ROSARIO, MARIA SALOME (*Philippines*) *b. 1932.* B.S., Univ. of the Philippines 1954. Agriculture — Plant Science (Plant Parasitology) (A). Appointed from Univ. of the Philippines. *Place of Study:* U.S.A., 1955–.

DESCOEUDRES, PIERRE (*World Health Organization*) *b. 1911.* M.D., Univ. of Geneva 1937. Public Health Administration (MEPH). Appointed from World Health Organization. *Place of Study:* U.S.A., 1955–.

DE SOUZA, EUSTACE JOSEPH (*India*) *b. 1921.* M.S., Seth Gordhandas Sunderdas Med. Coll., Bombay, 1950. Anatomy (MEPH). Appointed from Topiwala Nat'l Med. Coll., Bombay. *Place of Study:* U.S.A., 1955–.

DIGHE, VISHWANATH GOVIND (*India*) *b. 1906.* Ph.D., Univ. of Bombay 1942. History (H). Appointed from Govt. of Bombay. *Place of Study:* U.S.A., 1955–.

DINIZ DE SOUSA, MARIANA DULCE (*Portugal*) *b. 1929.* Grad., Escola Técnica de Enfermeiras, Lisbon, 1952. Obstetrical Nursing (MEPH). Appointed from Escola Técnica de Enfermeiras. *Place of Study:* U.S.A., 1955–.

DINTZIS, HOWARD MARVIN (*U.S.A.*) *b. 1927.* Ph.D., Harvard Univ. 1953. Biochemistry-Proteins (BMR). Appointed from Nat'l Science Foundation Fellowship for work at Univ. of Cambridge. *Place of Study:* Great Britain, 1955–.

DORAISAMY, L. V. (*India*) *b. 1921.* M.S., Madras Christian Coll., Tambaram, 1941. Medical Entomology (MEPH). Appointed

from Madras Med. Coll. *Place of Study:* U.S.A., 1955–.

DURÁN, ANA MARÍA (*Mexico*) *b. 1929.* Grad., Univ. of Guadalajara 1950. Nursing Education (MEPH). Appointed from Univ. of Guadalajara. *Place of Study:* U.S.A., 1955–.

ELMORE, HAROLD LANE (*U.S.A.*) *b. 1923.* B.S., Univ. of Chattanooga 1947. Sanitary Chemistry and Sanitary Engineering (DMPH). Appointed from Tennessee Valley Authority, Chattanooga. *Place of Study:* U.S.A., 1955–.

ENKERLIN SCHALLENMUELLER, DIETER (*Mexico*) *b. 1926.* M.S., Cornell Univ. 1952. Agriculture — Plant Science (Plant Parasitology) (DNSA). Appointed from Technological Inst. of Monterrey. *Place of Study:* U.S.A., 1955–.

FLORES DEL FIERRO, CARLOS H. (*Chile*) *b. 1918.* D.V.M., Univ. of Chile, Santiago, 1945. Agriculture — Veterinary Science (Bacteriology) (DNSA). Appointed from Ministry of Agric., Santiago. *Place of Study:* U.S.A., 1955–.

FOWDEN, LESLIE (*England*) *b. 1925.* Ph.D., Univ. of London 1947. Biochemistry — Plants (DNSA). Appointed from Univ. of London. *Place of Study:* U.S.A., 1955–.

FRANZANI PINOCHET, MARIO (*Chile*) *b. 1924.* Ing. Agr., Univ. of Chile, Santiago, 1950. Agriculture — Plant Science (Food Technology) (DNSA). Appointed from Ministry of Agric., Santiago. *Place of Study:* U.S.A., 1955–.

FRIEDRICH, MARLENE ANNA DOROTHEA (*Germany*) *b. 1930.* Dipl., Town's Hosp. School of Nursing, Bielefeld, Westphalia, 1953. Public Health Nursing (MEPH). Appointed from Univ. of Heidelberg. *Place of Study:* U.S.A., 1955–.

FUKUSHIMA, ICHIRO (*Japan*) *b. 1921.* M.D., Univ. of Tokyo 1946. Public Health Education (DMPH). Appointed from Tohoku Univ., Sendai. *Place of Study:* U.S.A., 1955–.

GAJARAJ, D. DANIEL (*India*) *b. 1923.* Ajmer Univ. 1954-1955. Library Science (DMPH). Appointed from Christian Med. Coll. Hosp., Vellore. *Place of Study:* U.S.A., 1955–.

GATES, RONALD CECIL (*Australia*) *b. 1923.* M.A., Univ. of Oxford 1952. Economics (DSS). Appointed from Univ. of Sydney. *Place of Study:* England, 1955–.

GILLETT, JOHN DAVID (*Uganda*) *b. 1913.* Ph.D., Univ. of London 1952. Virology (DMPH). Appointed from Virus Research Inst., Entebbe. *Place of Study:* U.S.A., 1955–.

GOLDBERG, LOUIS (*Australia*) *b. 1908.* M.Com., Univ. of Melbourne 1938. Accounting (DSS). Appointed from Univ. of Melbourne. *Place of Study:* England, 1955–.

GROVE VALENZUELA, HIRAM (*Chile*) *b. 1922.* Ing. Agr., Univ. of Chile, Santiago, 1944. Agriculture — Agronomy (Forage Crops) (DNSA). Appointed

from Ministry of Agric., Santiago. *Place of Study:* U.S.A., 1955–.

GRÜBER, MAX (*Netherlands*) *b. 1921.* Ph.D., Univ. of Utrecht 1952. Biochemistry — Proteins (DNSA). Appointed from Univ. of Indonesia, Bandung. *Place of Study:* U.S.A., 1955–.

GUEVARA CALDERÓN, JOSÉ (*Mexico*) *b. 1919.* M.S., Ohio State Univ. 1949. Agriculture — Plant Science (Plant Parasitology) (A). Appointed from Nat'l Coll. of Agric., Chapingo. *Place of Study:* U.S.A., 1955–.

GUPTA, NITYA NAND (*India*) *b. 1919.* M.D., Lucknow Univ. 1943. Psychiatry (MEPH). Appointed from Lucknow Univ. *Place of Study:* U.S.A., 1955–.

GURGEL, JOSÉ THEOPHILO DO AMARAL (*Brazil*) *b. 1914.* Eng. Agr., Univ. of São Paulo 1937. Agriculture — Plant Science (Plant Breeding—Cytogenetics) (DNSA). Appointed from Univ. of São Paulo, Piracicaba. *Place of Study:* U.S.A., 1955–.

GUZMÁN-NARANJO, JULIA (*Colombia*) *b. 1921.* M.S., Washington Univ. 1945. Agriculture —Plant Science (Parasitology) (DNSA). Appointed from Ministry of Agric., Bogotá. *Place of Study:* U.S.A., 1955–.

HAGBERG, NILS ARNE (*Sweden*) *b. 1919.* Fil. Dr., Univ. of Lund 1953. Agriculture—Plant Breeding (DNSA). Appointed from Swedish Seed Assoc., Svalof. *Place of Study:* U.S.A., 1955–.

HAZO, ROBERT GEORGE (*U.S.A.*) *b. 1931.* B.A., St. John's Coll., Annapolis, Md., 1953. Near East Studies (H). *Place of Study:* Iraq, 1955–.

HENATSCH, HANS-DIETER (*Germany*) *b. 1920.* M.D., Univ. of Göttingen 1947. Neurophysiology (DMPH). Appointed from Univ. of Marburg/Lahn. *Place of Study:* Sweden, 1955–.

HENSLEY, WILLIAM JOSEPH (*Australia*) *b. 1926.* M.B., B.S., Univ. of Sydney 1950. Biochemistry (BMR). Appointed from Univ. of Sydney. *Place of Study:* U.S.A., 1955–.

HERNÁNDEZ, LUISA JOSEFINA (*Mexico*) *b. 1928.* M.A., Nat'l Univ. of Mexico 1953. Drama (H). Appointed from Mexican Writing Center, Mexico City. *Place of Study:* U.S.A., 1955–.

HERNÁNDEZ ORNELAS, SANTIAGO (*Mexico*) *b. 1928.* M.D., Univ. of Guanajuato, León, 1952. Biochemistry (MEPH). Appointed from Hosp. de Enfermedades de la Nutrición, Mexico City. *Place of Study:* U.S.A., 1955–.

HEUSS, ERNST THEODOR VALENTIN (*Switzerland*) *b. 1922.* Dr. rer.pol., Univ. of Freiburg 1945. Economics (DSS). Appointed from Swiss Inst. for Foreign Trade Research, St. Gallen. *Place of Study:* U.S.A., 1955–.

HIROE, MINOSUKE (*Japan*) *b. 1914.* Grad., Kyoto Univ. 1945. Botany (A). Appointed from Kyoto Univ. *Place of Study:* U.S.A., 1955–.

HORVATH SUMI, ANTONIO (*Chile*) *b. 1921.* M.D., Univ. of Budapest 1945. Biochemistry (MEPH). Appointed from Univ. of Chile. *Place of Study:* U.S.A., 1955–.

HOSOYA, CHIHIRO (*Japan*) *b. 1920.* LL.B., Univ. of Tokyo 1945. Political Science (SS). Appointed from Hitotsubashi Univ., Tokyo. *Place of Study:* U.S.A., 1955–.

HOUSSAY, RAUL HORACIO (*Argentina*) *b. 1925.* M.D., Univ. of Buenos Aires 1950. Medicine (MEPH). Appointed from Univ. of Buenos Aires. *Place of Study:* U.S.A., 1955–.

IBARBURU IRAZUSTA, DORA MARÍA (*Uruguay*) *b. 1918.* Nursing Education dipl., Univ. of Toronto 1946. Public Health Nursing (IHD); Nursing Education (MEPH). Appointed from 1) Dept. of Health, Montevideo; 2) Univ. of the Republic, Montevideo. *Place of Study:* Canada and U.S.A., 1944-1946; U.S.A., 1955–.

IBARGÜENGOITIA ANTILLON, JORGE (*Mexico*) *b. 1928.* Bachelor, Colegio Morelos, Mexico City, 1944. Drama (H). Appointed from Mexican Writing Center, Mexico City. *Place of Study:* U.S.A., 1955–.

IWAMA, TORU (*Japan*) *b. 1914.* Bungakushi, Univ. of Tokyo 1936. Slavic Studies (DH). Appointed from Tokyo Women's Christian Coll. *Place of Study:* U.S.A., 1955–.

JACKA, CYRIL KEITH (*Australia*) *b. 1927.* B.A., Univ. of Melbourne 1954. Theoretical Epidemiology (MEPH). Appointed from State Health Dept., Melbourne. *Place of Study:* U.S.A., 1955–.

JAEGER, CELSO PAULO (*Brazil*) *b. 1927.* Lic., Univ. of Rio Grande do Sul, Pôrto Alegre, 1952. Experimental Biology — Chemical Genetics (DNSA). Appointed from Univ. of Rio Grande do Sul. *Place of Study:* U.S.A., 1955–.

KAGEYAMA, KEIZO (*Japan*) *b. 1918.* M.D., Keio Univ., Tokyo, 1944. Pathology (DMPH). Appointed from Keio Univ. *Place of Study:* U.S.A., 1955–.

KARTTUNEN, KIRSTI MARJATTA (*Finland*) *b. 1920.* Helsinki School of Nursing, 1940-1943; M.A., Helsinki Univ. 1953. Nursing Education and Research (MEPH). Appointed from Coll. of Nursing, Helsinki. *Place of Study:* U.S.A., 1955–.

KATO, EIICHI (*Japan*) *b. 1924.* M.D., Keio Univ., Tokyo, 1947. Internal Medicine (MEPH). Appointed from Keio Univ. *Place of Study:* U.S.A., 1955–.

KITAMURA, HIROSHI (*Japan*) *b. 1909.* Dr. Pol. Sci., Univ. of Basel 1937. International Trade and Economic Development (SS). Appointed from Tokyo Metropolitan Univ. *Place of Study:* U.S.A., 1955–.

KOBA, ICHIRO (*Japan*) *b. 1911.* Tokyo Teikohu Daigu-ku, 1931-1935. Intercultural Understanding (DH). Appointed from Meiji Univ., Tokyo. *Place of Study:* U.S.A., 1955–.

KORGAONKAR, KASHINATH SHAMRAO (*India*) *b. 1917.* Ph.D., Inst. of Science, Bombay, 1952. Biophysics (BMR). Appointed from Indian Cancer Research Centre, Bombay. *Place of Study:* U.S.A., 1955–.

KORNER, ASHER (*England*) *b. 1927.*

Ph.D., Univ. of Cambridge 1955. Biochemistry — Proteins (BMR). Appointed from Univ. of Cambridge. *Place of Study:* U.S.A., 1955–.

KRISHNAMURTI, BHADRIRAJU (*India*) *b. 1928.* M.A., Andhra Univ., Waltair, 1948. Intercultural Understanding (DH). Appointed from Andhra Univ. *Place of Study:* U.S.A., 1955–.

KURATA, MASAKAZU (*Japan*) *b. 1919.* M.D., Keio Univ., Tokyo, 1952. Environmental Hygiene (MEPH). Appointed from Keio Univ. *Place of Study:* U.S.A. 1955–.

LACEBAL, ANACLETO (*Philippines*) *b. 1923.* B.S., Univ. of the Philippines, Quezon City, 1949. Economics (DSS). Appointed from Univ. of the Philippines. *Place of Study:* Australia, 1955–.

LARSEN, JYTTE FUNDER (*Denmark*) *b. 1928.* R.N., The District Hosp. of Copenhagen, Gentofte, 1950. Psychiatric Nursing (DMPH). Appointed from The Mental Hosp., Riisskov. *Place of Study:* U.S.A., 1955–.

LAVOREL, JEAN (*France*) *b. 1928.* Doctorat, Univ. of Paris 1955. Biochemistry — Photosynthesis (BMR). Appointed from Centre National de la Recherche Agronomique. *Place of Study:* U.S.A., 1955–.

LE BOUVIER, GEORGE LOUIS (*England*) *b. 1921.* M.D., Univ. of London 1950. Virology (BMRC). Appointed from Virus Reference Lab., London. *Place of Study:* U.S.A., 1955–.

LEE, HAE YOUNG (*Korea*) *b. 1925.* B.A., Seoul Nat'l Univ. 1949. Sociology (SS). Appointed from Seoul Nat'l Univ. *Place of Study:* U.S.A., 1955–.

LEE, MAN GAP (*Korea*) *b. 1921.* B.A., Univ. of Tokyo 1944. Sociology (SS). Appointed from Seoul Nat'l Univ. *Place of Study:* U.S.A., 1955–.

LEMOS, PETEZVAL DE OLIVEIRA E CRUZ (*Brazil*) *b. 1921.* Eng. Agr., Rural Univ., Rio de Janeiro, 1943. Agriculture — Soil Science (DNSA). Appointed from Ministry of Agric., Rio de Janeiro. *Place of Study:* U.S.A., 1955–.

LESOURNE, JACQUES FRANÇOIS (*France*) *b. 1928.* Dipl. in Mining, Ecole Nationale Supérieure des Mines de Paris 1953. Economics (DSS). Appointed from French Coal Industry, Paris. *Place of Study:* U.S.A., 1955–.

LIE, TEK TJENG (*Indonesia*) *b. 1931.* B.A., Univ. of Indonesia, Batavia, 1954. Far Eastern Studies (DH). Appointed from Harvard Univ. *Place of Study:* U.S.A., 1955–.

LEWIS, DAN (*England*) *b. 1910.* D.Sc., Univ. of London 1951. Plant Science (Plant Breeding and Genetics) (A). Appointed from John Innes Horticultural Inst., Bayfordbury. *Place of Study:* U.S.A., 1955–.

MARKUS, RUBEN (*Brazil*) *b. 1921.* Eng. Agr., Univ. of Rio Grande do Sul, Pôrto Alegre, 1943. Agriculture — Plant Science (Plant Breeding) (A). Appointed from Univ. of Rio Grande do Sul. *Place of Study:* U.S.A., 1955–.

MASCARENHAS, MELITA (*India*) *b. 1929.* B.Sc. in Nursing, Univ. of

Delhi 1951. Public Health Nursing (MEPH). Appointed from Coll. of Nursing, Delhi. *Place of Study:* U.S.A., 1955–.

MATHEWS, ANNAMMA NATTACHERIL (*India*) *b. 1921.* B.Sc., Wayne Univ. 1952. Nursing Education and Administration (DMPH). Appointed from Christian Med. Coll., Vellore. *Place of Study:* U.S.A., 1955–.

MELÉNDEZ VARGAS, LUIS (*Chile*) *b. 1927.* D.V.M., Univ. of Chile, Santiago, 1950. Agriculture — Veterinary Science (DNSA). Appointed from Bacteriological Inst., Santiago. *Place of Study:* U.S.A., 1955–.

MENDES, JOAO PAULO DO VALLE (*Brazil*) *b. 1930.* M.D., Faculty of Med. and Surgery of Pará, Belém, 1954. Anatomy (MEPH). Appointed from Faculty of Med. and Surgery of Pará. *Place of Study:* Brazil, 1955–.

MIMAROGLU, ILHAN KEMALETTIN (*Turkey*) *b. 1926.* Dipl. in Law, Univ. of Ankara 1949. Music Criticism (H). Appointed from Turkish Press, Ankara. *Place of Study:* U.S.A., 1955–.

MOCHI, ALESSANDRO M. (*World Health Organization*) *b. 1920.* M.D., Univ. of Rome 1946. Public Health (MEPH). Appointed from World Health Organization. *Place of Study:* U.S.A., 1955–.

MOODIE, AILEEN DUNBAR (*Union of South Africa*) *b. 1913.* Med. & Surg. Nursing Cert., Groote Schuur Hosp., Cape Town, 1944; Midwifery Cert., Grey's Hosp., Pietermaritzburg, Natal, 1944. Medical Social Work (DMPH). Appointed from Univ. of Cape Town, Mowbray. *Place of Study:* England, 1955–.

MOORE, GEOFFREY HERBERT (*England*) *b. 1920.* B.A., Univ. of Cambridge 1946. Literature (H). Appointed from Univ. of Kansas. *Place of Study:* U.S.A., 1955–.

MORA, INÉS (*Colombia*) *b. 1922.* Nursing degree, Nat'l Univ. of Colombia, Bogotá, 1948. Public Health Nursing (DMPH). Appointed from Univ. of Valle, Cali. *Place of Study:* U.S.A., 1955–.

NARVAES, CARMEN (*Brazil*) *b. 1927.* M.D., Univ. of São Paulo 1952. Anesthesiology (MEPH). Appointed from Hosp. das Clínicas, São Paulo. *Place of Study:* U.S.A., 1955–.

OHLSON, VIRGINIA MAE (*U.S.A.*) *b. 1914.* B.S., Univ. of Chicago 1946. Nursing Education (DMPH). Appointed from The Rockefeller Foundation. *Place of Study:* U.S.A., 1955–.

PAL, AGATON P. (*Philippines*) *b. 1922.* M.A., Silliman Univ., Dumaguete, 1952. Rural Sociology (DSS). Appointed from Silliman Univ. *Place of Study:* U.S.A., 1955–.

PANDIT, PRABODH BECHARDAS (*India*) *b. 1923.* Ph.D., Univ. of London 1950. South Asian Languages (DH). Appointed from Gujarat Univ., Ahmedabad. *Place of Study:* U.S.A., 1955–.

PATERSON, JANE ELIZABETH (*Scotland*) *b. 1915.* M.A., Univ. of Glasgow 1937. Medical Social Work (MEPH). Appointed

from Univ. of Edinburgh. *Place of Study:* U.S.A., 1955–.

PAVAGEAU, MOACYR (*Brazil*) *b. 1909.* M.S.A., Univ. of Florida 1943. Agriculture—Soil Science (DNSA). Appointed from Secretariat of Agric., State of Rio de Janeiro, Niteroi. *Place of Study:* U.S.A., 1955–.

PAYZIN, SABAHATTIN (*Turkey*) *b. 1916.* M.D., Univ. of Istanbul 1940. Bacteriology (DMPH). Appointed from Rocky Mountain Lab., Hamilton, Montana. *Place of Study:* U.S.A., 1955–.

PAZ CARIAT, ADA (*Peru*) *b. 1915.* Dipl., Archbishop Loayza Hosp. Nursing School, Lima, 1935. Nursing Education (DMPH). Appointed from Ica Health Dept. *Place of Study:* U.S.A., 1955–.

PENDSE, SHRIPAD NARAYAN (*India*) *b. 1913.* B.Sc., St. Xavier's Coll., Bombay, 1940. Literature (DH). Appointed from Bombay Municipal Utilities. *Places of Study:* England, France, 1955–.

PERDOMO, RASTOIL (*Uruguay*) *b. 1917.* D.V.M., Univ. of the Republic, Montevideo, 1941. Agriculture — Veterinary Science — Pharmacology (DNSA). Appointed from Univ. of the Republic. *Place of Study:* U.S.A., 1955–.

PINHO DE ALMEIDA, LICIA MARIA (*Brazil*) *b. 1931.* Nursing grad., Univ. of Bahia, Salvador, 1953. Medical Nursing (MEPH). Appointed from Univ. of Bahia. *Place of Study:* U.S.A., 1955–.

POETSCH, ERNST (*Brazil*) *b. 1923.* Eng. Agr., Eliseu Maciel School of Agron., Pelotas, 1948. Agriculture — Soil Science (A). Appointed from Eliseu Maciel School of Agron. *Place of Study:* U.S.A., 1955–.

PRADO DE CARVALHO, JOSÉ LEAL (*Brazil*) *b. 1918.* M.D., Univ. of Minas Gerais, Belo Horizonte, 1940. Experimental Biology — Biochemistry (DNSA). Appointed from Escola Paulista de Medicina, São Paulo. *Place of Study:* France, 1955–.

PRASAD, BIMLA (*India*) *b. 1925.* M.A., Patna Univ. 1947. Intercultural Understanding (DH). Appointed from Patna Univ. *Place of Study:* U.S.A., 1955–.

RAMÍREZ GENEL, MARCOS (*Mexico*) *b. 1922.* M.S., Cornell Univ. 1952. Agriculture — Plant Science (Plant Parasitology) (A). Appointed from The Rockefeller Foundation, Mexico. *Place of Study:* U.S.A., 1955–.

RANIT, GENARO O. (*Philippines*) *b. 1921.* B.S., Univ. of the Philippines 1950. Agriculture — Animal Science (Animal Husbandry) (A). Appointed from Univ. of the Philippines. *Place of Study:* U.S.A., 1955–.

RAO, V. NARAYANA (*India*) *b. 1918.* M.P.H., All India Inst. of Hygiene and Public Health, Calcutta, 1946. Epidemiology (MEPH). Appointed from Govt. of Bombay, Sholapur. *Place of Study:* U.S.A., 1955–.

REMOLINA LOPEZ, JOAQUIN (*Mexico*) *b. 1927.* M.D., Nat'l Univ. of Mexico 1950. Physiology (MEPH). Appointed from Nat'l Inst. of Cardiology, Mexico City. *Place of Study:* U.S.A., 1955–.

REYNAFARJE, BALTAZAR (*Peru*) *b. 1926.* M.D., Univ. of San Mar-

cos, Lima, 1952. Tissue Chemistry (MEPH). Appointed from Univ. of San Marcos and Inst. of Andean Biology, Lima. *Place of Study:* U.S.A., 1955–.

RICHTER, LISBETH ELSE SONJA (*Sweden*) *b. 1922.* Dipl., Swedish Nurses' Assn., Stockholm, 1951. Medical Nursing (MEPH). Appointed from State School of Nursing, Göteborg. *Place of Study:* U.S.A., 1955–.

RILEY, GEORGE BERNARD (*U.S.A.*) *b. 1926.* M. Agr., Univ. of Florida 1953. Agriculture — Plant Science [Plant Parasitology (Entomology)] (A). Appointed from The Rockefeller Foundation, Mexico. *Place of Study:* U.S.A., 1955–.

ROCHA, URIEL FRANCO (*Brazil*) *b. 1917.* D.V.M., Univ. of São Paulo 1942. Agriculture — Veterinary Science — Parasitology (DNSA). Appointed from Univ. of São Paulo. *Place of Study:* U.S.A., 1955–.

ROJAS GARCIDUEÑAS, MANUEL (*Mexico*) *b. 1925.* Biologist, Nat'l Univ. of Mexico 1952. Agriculture — Plant Science (Plant Breeding) (DNSA). Appointed from Technological Inst. of Monterrey. *Place of Study:* U.S.A., 1955–.

RORSTAD, GUNNVOR (*Norway*) *b. 1911.* LL.B., Univ. of Oslo 1946; Royal Coll. of Nursing, London, 1947-1948. Nursing Administration and Education (DMPH). Appointed from Royal Norwegian Ministry of Social Affairs, Oslo. *Place of Study:* U.S.A., 1955–.

ROSAS PENA, FERNANDO (*Colombia*) *b. 1923.* M.D., Nat'l Univ. of Colombia, Bogotá, 1948. Neurophysiology (MEPH). Appointed from Nat'l Univ. of Colombia. *Place of Study:* U.S.A., 1955–.

SABRA, FUAD AMIN (*Lebanon*) *b. 1918.* M.D., American Univ. of Beirut 1942. Physiology and Endocrinology (MS); Neurology (DMPH). Appointed twice from American Univ. of Beirut. *Place of Study:* U.S.A., 1947-48; 1955–.

SARATHCHANDRA, VEDITANTIRIGE EDIRIWEERA RANJITA (*Ceylon*) *b. 1914.* Ph.D., Univ. of London 1949. Drama (DH). Appointed from Univ. of Ceylon, Peradeniya. *Place of Study:* India, 1955–.

SCHEUCH H., FRIEDRICH (*Peru*) *b. 1931.* Ing. Agr., Nat'l School of Agric., Lima, 1951. Agriculture — Plant Science (Plant Genetics) (A). Appointed from Nat'l School of Agric. *Place of Study:* U.S.A., 1955–.

SEKI, KIYOHIDE (*Japan*) *b. 1918.* Bungakushi, Tokyo Imperial Univ. 1940. Population and Community Organization (SS). Appointed from Hokkaido Univ., Sapporo. *Place of Study:* U.S.A., 1955–.

SERRANO, CARLOS V. (*Colombia*) *b. 1931.* M.D., Nat'l Univ. of Colombia, Bogotá, 1955. Physiology (MEPH). Appointed from Nat'l Univ. of Colombia. *Place of Study:* Colombia, 1955–.

SHAYAL, GAMAL ELDIN EL (*Egypt*) *b. 1911.* D.Litt., Univ. of Alexandria 1948. Near Eastern Studies (H). Appointed from Univ. of Alexandria. *Place of Study:* U.S.A., 1955–.

SHINOHARA, MIYOHEI (*Japan*) *b. 1919.* Snogakushi, Tokyo Univ. of Commerce 1942. Economics (SS). Appointed from Hitotsubashi Univ., Tokyo. *Place of Study:* U.S.A., 1955–.

SHIRAKI, HIROTSUGU (*Japan*) *b. 1917.* M.D., Univ. of Tokyo 1941. Psychiatry (DMPH). Appointed from Univ. of Tokyo. *Place of Study:* U.S.A., 1955–.

SIMOES E SILVA JUNIOR, JOSÉ (*Brazil*) *b. 1921.* M.D., D.D.Ch., Univ. of Bahia, Salvador, 1946, 1949. Physiology and Nutrition (DMPH). Appointed from Univ. of Bahia. *Place of Study:* U.S.A., 1955–.

SKANLAND, HERMOD (*Norway*) *b. 1925.* Cand. Econ., Univ. of Oslo 1951. Economics (DSS). Appointed from Ministry of Finance, Oslo. *Place of Study:* U.S.A., 1955–.

SMITH, ALAN WILLIAM MCINTOSH (*England*) *b. 1923.* M.B., Ch.B., Univ. of Edinburgh 1950. Medicine (BMRC). Appointed from Royal Infirmary, Edinburgh. *Place of Study:* U.S.A., 1955–.

SMITH, JOHN DEREK (*England*) *b. 1924.* Ph.D., Univ. of Cambridge 1948. Biochemistry—Nucleic Acids (BMR). Appointed from Univ. of Cambridge. *Place of Study:* U.S.A., 1955–.

SOMOZA, ARTURO LUCIO (*Argentina*) *b. 1915.* Ing. Agr., Univ. of Buenos Aires 1939. Agriculture—Soil Science (DNSA). Appointed from Inst. del Riego, Mendoza. *Place of Study:* U.S.A., 1955–.

SONG, IN HYUN (*Korea*) *b. 1925.* M.D., Chonnam Univ., Kwangju, 1949. Epidemiology (MEPH). Appointed from Chonnam Univ. *Place of Study:* U.S.A., 1955–.

SÖRBO, BO HILDING (*Sweden*) *b. 1926.* M.D. thesis, Karolinska Inst., Stockholm, 1953. Biochemistry—Enzymes (DNSA). Appointed from Med. Nobel Inst., Stockholm. *Place of Study:* France, 1955–.

SPENCE, LESLIE PERCIVAL (*British West Indies*) *b. 1922.* D.T.M. & H., London School of Hygiene & Tropical Med. 1951. Virology (DMPH). Appointed from Trinidad Regional Virus Lab., Port-of-Spain. *Place of Study:* U.S.A., 1955–.

SREEKANTAIYA, TIRTHAPURA NANJUNDAIYA (*India*) *b. 1906.* M.A. in English, M.A. in Kannada, Univ. of Mysore 1929, 1931. Intercultural Understanding (DH). Appointed from Karnatak Univ., Dharwar. *Place of Study:* U.S.A., 1955–.

STOAKES, FRANK (*England*) *b. 1917.* M.A., Univ. of Oxford 1946. Modern Near Eastern History (H). Appointed from Iraq Petroleum Co., Ltd., Baghdad. *Place of Study:* Great Britain, 1955–.

SUBRAMONIAN, V. I. (*India*) *b. 1927.* M. A., Annamalai Univ. 1946. South Asian Languages (DH). Appointed from Univ. of Travancore, Trivandrum. *Place of Study:* U.S.A. 1955–.

SUMMERSKILL, WILLIAM HEDLEY JOHN (*England*) *b. 1926.* B.M., B.Ch., Univ. of Oxford 1949. Medicine (BMRC). Appointed from Postgraduate Med. School of London. *Place of Study:* U.S.A., 1955–.

TAKEYA, KENJI (*Japan*) *b. 1922.* M.D., Kyushu Univ., Fukuoka, 1944. Microbiology (MEPH). Appointed from Kyushu Univ. *Place of Study:* U.S.A., 1955–.

TEIXEIRA, ALAOR (*Brazil*) *b. 1928.* M.D., Univ. of Rio Grande do Sul, Pôrto Alegre, 1953. Anatomy (DMPH). Appointed from Univ. of Rio Grande do Sul. *Place of Study:* Brazil, 1955–.

TESSI, JUAN LORENZO (*Argentina*) *b. 1923.* Ing. Agr., Univ. of Buenos Aires 1947. Agriculture — Plant Science — Plant Breeding (DNSA). Appointed from Ministry of Agric., Castelar. *Place of Study:* U.S.A., 1955–.

THIEMANN, JOSEF ERNST (*Brazil*) *b. 1931.* Grad., Escola Superior de Agric. e Veterinaria do Paraná, Curitiba, 1953. Experimental Biology — Microbiology (BMR). Appointed from Inst. de Biologico e Pesquisas Tecnologicas, Curitiba. *Place of Study:* U.S.A., 1955–.

TOMABECHI, KONOSUKE (*Japan*) *b. 1924.* M.D., Kyoto Univ. 1948. Public Health — Nutrition (MEPH). Appointed from Inst. of Public Health, Tokyo. *Place of Study:* U.S.A., 1955–.

TORREALBA LABORDA, DOMINGO ANTONIO (*Chile*) *b. 1927.* Ing. Agr., Univ. of Chile, Santiago, 1951. Agriculture—Plant Science (Forestry) (DNSA). Appointed from Corp. de Fomento de la Producción, Santiago. *Place of Study:* U.S.A., 1955–.

TUAN, CHI-HSIEN (*National Republic of China*) *b. 1927.* Nat'l Univ. of Taiwan, Taipei, 1946-1949. Demography (SS). Appointed from Nat'l Inst. of Health, Taipei. *Place of Study:* U.S.A., 1955–.

TUGADE, RODRIGO ROSARIO (*Philippines*) *b. 1906.* LL.B., Univ. of Kansas 1931. Political Science (DSS). Appointed from Silliman Univ., Dumaguete. *Place of Study:* U.S.A., 1955–.

VALLANCE-OWEN, JOHN (*England*) *b. 1920.* M.D., Univ. of Cambridge 1951. Medicine (BMRC). Appointed from Postgraduate Med. School of London. *Place of Study:* U.S.A. 1955–.

VARELA, HELVECIA (*Uruguay*) *b. 1930.* Grad., Univ. of the Republic, Montevideo, 1953. Nursing Education (DMPH). Appointed from Univ. of the Republic. *Place of Study:* U.S.A., 1955–.

VERGHESE, ALEYAMMA (*India*) *b. 1926.* B.Sc. in Nursing, Christian Med. Coll., Vellore, 1951. Public Health Nursing (MEPH). Appointed from School of Nursing, Trivandrum. *Place of Study:* U.S.A., 1955–.

VERONESI, RICARDO (*Brazil*) *b. 1919.* M.D., Univ. of São Paulo 1946. Virology (MEPH). Appointed from Univ. of São Paulo. *Place of Study:* U.S.A., 1955–.

VILLAS-BÔAS, THEREZA MARIA CALMON (*Brazil*) *b. 1926.* Nursing Dipl., Univ. of Bahia, Salvador, 1953. Nursing Education and Administration (DMPH). Appointed from Univ. of Rio Grande do Sul, Pôrto Alegre. *Place of Study:* U.S.A., 1955–.

WERGELAND, HJALMAR KIELLAND (*Norway*) *b. 1909.* Med. Lic., Univ. of Oslo 1937. Pediatrics

(MS); Psychiatry (DMPH). Appointed twice from Univ. of Oslo. *Place of Study:* U.S.A., 1950-1951; 1955–.

WIGHTMAN, DAVID R. (*England*) *b. 1925.* B.Sc., London School of Economics and Political Science 1946. Economic History (DSS). Appointed from Univ. of Birmingham. *Place of Study:* U.S.A., 1955–.

WOOD, HARLAND GOFF (*U.S.A.*) *b. 1907.* Ph.D., Iowa State Coll. 1935. Biochemistry (DMPH). Appointed from Western Reserve Univ. *Place of Study:* Denmark, 1955–.

WÜTHRICH, MAGDALENA VERENA (*Switzerland*) *b. 1913.* Dipl., Pflegerinschule, Zurich, 1937. Nursing Education (MEPH). Appointed from Le Bon Secours School of Nursing, Geneva. *Place of Study:* U.S.A., 1955–.

XIRAU, RAMON (*Mexico*) *b. 1924.* M.A., Nat'l Univ. of Mexico 1946. Literature (DH); (H). Appointed twice from Mexico City Coll. *Place of Study:* Mexico, 1951-1952; France, 1955–.

YOSHIDA, TOKIKO (*Japan*) *b. 1922.* St. Luke's Coll. of Nursing, Tokyo, 1940-1943. Nursing Education and Administration (MEPH). Appointed from St. Luke's Coll. of Nursing. *Place of Study:* U.S.A., 1955–.

ZO, KI-ZUN (*Korea*) *b. 1917.* B.A., Sophia Univ., Tokyo, 1942. Economic History (H). Appointed from Korea Univ., Seoul. *Place of Study:* U.S.A., 1955–.

OTHER STUDY AWARDS

In addition to its regular fellowship appointments in 1955, the Foundation made a limited number of special study awards in connection with its programs in Latin America and the Far East. Twenty-five persons from seven countries received these awards:

ACHJAD, MOHAMAD (*Indonesia*) *b. 1923.* Labor Relations. *Places of Study:* Japan, Philippines, Hawaii, U.S.A., 1955–.

ARDI, ASEP (*Indonesia*) *b. 1918.* Labor Relations. *Places of Study:* Japan, Philippines, Hawaii, U.S.A., 1955–.

CANALES LÓPEZ, HORACIO (*Mexico*) *b. 1928.* Ing. Agr., Antonio Narro School of Agric., Saltillo, 1954. Plant Science (Plant Breeding). *Pl. of Study:* U.S.A., 1955–.

COELHO, ANTONIO S. R. (*Brazil*) *b. 1931.* Eng. Agr., Luiz de Queiroz Coll. of Agric., Piracicaba, 1954. Agronomy. *Place of Study:* Mexico, 1955–.

COELHO, JOSE CLAUDIO MEIRA (*Brazil*) *b. 1924.* Eng. Agr., Eliseu Maciel School of Agron., Pelotas, 1955. Soil Science. *Place of Study:* Mexico, 1955–.

CORDERO VILLALBA, ANGEL (*Bolivia*) *b. 1928.* Ing. Agr., Univ. of San Simon, Cochabamba, 1954.

Plant Science (Plant Breeding). *Place of Study:* Mexico, 1955–.

DE MORAES, CARMINO MATHEUS (*Brazil*) *b. 1931.* Eng. Agr., Univ. of Rio Grande do Sul, Pôrto Alegre, 1954. Plant Science (Plant Breeding). *Place of Study:* Mexico, 1955–.

DIRDJOSEWOJO, R. (*Indonesia*) *b. 1919.* Labor Relations, *Places of Study:* U.S.A., Japan, Philippines, Hawaii, 1955–.

FERNANDEZ OREAMUNO, JOAQUIN E. (*Costa Rica*) *b. 1933.* Ing. Agr., Univ. of Costa Rica 1954. Plant Science (Plant Parasitology — Entomology). *Place of Study:* Mexico, 1955–.

GARCÍA SANCHEZ, ALFREDO (*Mexico*) *b. 1928.* Ing. Agr., Antonio Narro School of Agric., Saltillo, 1951. Plant Science (Plant Breeding). *Place of Study:* Canada, 1955–.

GASPAR, ADALBERTO (*Brazil*) *b. 1931.* Eng. Agr., Luiz de Queiroz Coll. of Agric., Piracicaba, 1954. Agronomy. *Place of Study:* Mexico, 1955–.

GASTAUD, CLAUDIO SICA (*Brazil*) *b. 1929.* Eng. Agr., Eliseu Maciel School of Agron., Pelotas, 1951. Plant Science (Plant Breeding). *Place of Study:* Mexico, 1955–.

GONZALEZ ALANÍS, MARTÍN (*Mexico*) *b. 1930.* Ing. Agr., Technological Inst. & School of Higher Studies of Monterrey, 1954. Plant Science. *Place of Study:* U.S.A., 1955–.

HAMID, ABDUL (*Indonesia*) *b. 1909.* English Language and Education. *Place of Study:* U.S.A., 1955–.

LATINO RUIZ, MARIO (*Nicaragua*) *b. 1934.* Grad., Nat'l School of Agric., Managua, 1955. Plant Science (Plant Breeding). *Place of Study:* Mexico, 1955–.

LAZO DE LA VEGA, JOSE LUIS (*Mexico*) *b. 1929.* B.S., Louisiana State Univ. 1952. Plant Science (Plant Breeding). *Place of Study:* U.S.A., 1955–.

MARTINS DE SOUZA, UBIRAJARA R. (*Brazil*) *b. 1932.* Eng. Agr., Rural Univ. of the State of Minas Gerais, Viçosa, 1954. Agronomy. *Place of Study:* Mexico, 1955–.

PINEDA LACAYO, LAUREANO (*Nicaragua*) *b. 1934.* Grad., Nat'l School of Agric., Managua, 1955. Plant Science (Plant Breeding), *Place of Study:* Mexico, 1955–.

PRADJASASMITA, MUDAKIR (*Indonesia*) *b. 1923.* Labor Relations. *Places of Study:* Japan, Philippines, Hawaii, U.S.A., 1955–.

RANGKUTY, NURMAN (*Indonesia*) *b. 1918.* Labor Relations. *Places of Study:* Japan, Philippines, Hawaii, U.S.A., 1955–.

RASJID, A. MANNAN (*Indonesia*) *b. 1920.* Labor Relations. *Places of Study:* Japan, Philippines, Hawaii, U.S.A., 1955–.

SANCHEZ PICO, JUAN LEON (*Ecuador*) *b. 1927.* Ing. Agr., Luiz de Queiroz Coll. of Agric., Piracicaba, 1951. Plant Science (Plant Breeding). *Place of Study:* Mexico, 1955–.

SUKOTJO, RADEN (*Indonesia*) *b.*

1920. Labor Relations. *Places of Study:* Japan, Philippines, Hawaii, U.S.A., 1955–.

VILLENA DUCHEN, GUILLERMO (*Bolivia*) *b. 1931.* Ing. Agr., Univ. of San Simon, Cochabamba, 1954. Plant Science (Plant Breeding). *Place of Study:* Mexico, 1955–.

WETZEL, CLOVIS TERRA (*Brazil*) *b. 1929.* Eng. Agr., Eliseu Maciel School of Agron., Pelotas, 1955. Plant Science (Plant Breeding). *Place of Study:* Mexico, 1955–.

Report of the Treasurer

REPORT OF THE TREASURER

IN THE FOLLOWING PAGES is submitted a report of the financial transactions of The Rockefeller Foundation for the year ended December 31, 1955.

SQUIRES & COMPANY

CERTIFIED PUBLIC ACCOUNTANTS

101 PARK AVENUE, NEW YORK 17

February 20, 1956

ACCOUNTANTS' CERTIFICATE

To the Board of Trustees of

The Rockefeller Foundation:

We have examined the balance sheet of The Rockefeller Foundation as of December 31, 1955, and the related statements of its unappropriated and appropriated funds for the year then ended. Our examination was made in accordance with generally accepted auditing standards, and accordingly included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances.

The accounting records are kept on a cash basis and, accordingly, no effect has been given in the accompanying statements to income accrued but not received at December 31, 1955, nor to expenditures made from advances for which reports had not been received at the time the books were closed for the year.

In our opinion, with the foregoing explanation, the accompanying balance sheet and statements of unappropriated and appropriated funds present fairly the financial position of The Rockefeller Foundation as of December 31, 1955, and the results of its financial activities during the year then ended, in conformity with generally accepted accounting principles applied on a basis consistent with that of the preceding year.

(*Signed*) Squires & Company

BALANCE SHEET — DECEMBER 31, 1955

ASSETS

SECURITIES (Ledger value) (Market value $581,174,475.00)		$196,524,595.70
CURRENT ASSETS:		
Cash on deposit		3,620,289.20
Advances and deferred charges	$379,905.88	
Sundry accounts receivable	40,967.41	420,873.29
OFFICE AND EQUIPMENT:		
In New York and Paris		127,111.93
		$200,692,870.12

FUNDS AND OBLIGATIONS

PRINCIPAL FUND		$162,800,434.01
COMMITMENTS:		
Unpaid appropriations	$29,210,808.79	
Unappropriated authorizations	1,934,936.00	31,145,744.79
INCOME AVAILABLE FOR COMMITMENT		6,506,430.59
CURRENT LIABILITIES:		
Accounts payable and deferred credit		113,148.80
OFFICE AND EQUIPMENT FUND		127,111.93
		$200,692,870.12

PRINCIPAL FUND

Balance, December 31, 1954			**$156,316,804.76**
Add:			
Amount by which the proceeds of securities sold during the year exceeded their ledger value		$6,463,672.17	
Gifts received:			
Estate of Frank D. Hutchins	$7,957.08		
Anonymous	12,000.00	19,957.08	6,483,629.25
Balance, December 31, 1955			$162,800,434.01

APPROPRIATIONS AND PAYMENTS

Unpaid appropriations, December 31, 1954		$27,694,853.86
Appropriations during the year (For detail see pages 220 to 288):		
Medical Education and Public Health	$3,597,470.00	
Biological and Medical Research	2,601,860.00	
Agriculture	3,411,950.00	
Social Sciences	3,332,155.00	
Humanities	3,550,330.00	
General	435,000.00	
Administration	2,223,588.00	
	$19,152,353.00	
Unused balances of appropriations allowed to lapse	1,057,697.55	18,094,655.45
		$45,789,509.31
Payments on 1955 and prior years' appropriations (For detail see pages 220 to 288):		
Medical Education and Public Health	$2,131,154.93	
Biological and Medical Research	3,320,761.23	
Agriculture	1,736,073.98	
Social Sciences	2,753,120.60	
Humanities	3,314,090.04	
Former Program	950,712.23	
General	443,476.47	
Administration	1,929,311.04	16,578,700.52
Unpaid appropriations, December 31, 1955		$29,210,808.79

UNAPPROPRIATED AUTHORIZATIONS

Balance, December 31, 1954		$1,949,960.00
Less:		
Adjustment in Reserve for Retiring Allowances		15,024.00
Balance, December 31, 1955		$1,934,936.00

INCOME AVAILABLE FOR COMMITMENT

Balance, December 31, 1954		$4,728,128.16
Add:		
Income and refunds:		
Income from securities	$19,633,245.50	
Refunds	224,688.38	
Unused balances of appropriations allowed to lapse	1,057,697.55	20,915,631.43
		$25,643,759.59
Deduct:		
Appropriations	$19,152,353.00	
Less:		
Decrease in authorizations	15,024.00	19,137,329.00
Income available for commitment, December 31, 1955		$6,506,430.59

APPROPRIATIONS AND UNAPPROPRIATED AUTHORIZATIONS

Commitments, December 31, 1954:			
Unpaid appropriations		$27,694,853.86	
Unappropriated authorizations		1,949,960.00	$29,644,813.86
Add:			
Appropriations		$19,152,353.00	
Less:			
Appropriations lapsed during the year	$1,057,697.55		
Decrease in authorizations during the year	15,024.00	1,072,721.55	18,079,631.45
			$47,724,445.31
Deduct:			
Payments on 1955 and prior years' appropriations			16,578,700.52
Commitments, December 31, 1955:			
Unpaid appropriations		$29,210,808.79	
Unappropriated authorizations		1,934,936.00	$31,145,744.79

OFFICE AND EQUIPMENT FUND

	BALANCE DEC. 31, 1954	CHANGES DURING 1955 ADDITIONS	CHANGES DURING 1955 DEPRECIATION	BALANCE DEC. 31, 1955
Library	$9,970.00	$2,121.34	$2,171.34	$9,920.00
Equipment	83,656.90	14,994.04	5,269.67	93,381.27
Paris Office:				
Part interest in Paris office building	.....	23,810.66	.....	23,810.66
	$93,626.90	$40,926.04	$7,441.01	$127,111.93

APPROPRIATIONS DURING 1955, UNPAID BALANCES OF PRIOR YEAR APPROPRIATIONS, AND PAYMENTS THEREON IN 1955

	APPROPRIATIONS		1955
	PRIOR YEARS	1955	PAYMENTS
MEDICAL EDUCATION AND PUBLIC HEALTH			
Control and Investigation of Specific Diseases and Deficiencies			
MALARIA			
Europe			
Italy			
Sardinia Anopheles Eradication Program. 1950-1953 (IH 50126)	$2,962.40	$.....	$.....
YELLOW FEVER			
Africa			
Uganda. 1949 (IH 48016)	1,080.34	.....	.....
Medical Care			
UNITED STATES			
American Public Health Association, Washington, D.C.			
Support of Subcommittee on Medical Care (RF 52055)	40,000.00	.....	20,000.00
University of North Carolina, Chapel Hill			
Division of Health Affairs. Study of general medical practice (RF 53050, 54186, 55059)	19,695.00	80,600.00	49,695.00
CANADA			
University of Toronto			
Faculty of Medicine and the School of Hygiene. Teaching in medical care (RF 54065)	20,559.93	.....	7,935.50

EUROPE			
France			
Social Hygiene Association of the Aisne, Soissons			
Support of Soissons Center of Public Health (RF 53090)	88,880.41	.....	23,118.90
Great Britain			
Victoria University of Manchester			
Development of an experimental Health Center (IH 50101)	41,654.33	.....	11,915.33
WEST INDIES			
Department of Health, Puerto Rico			
Survey of the medical and public health facilities in the Bayamón region (RF 54102)	31,750.00	.....	31,750.00
Professional Education			
UNITED STATES			
Cornell University, Ithaca, New York			
Medical College, New York			
Statistical consultant in the Department of Preventive Medicine (RF 51119)	7,497.80	.....	5,222.03
Application of electron microscopy to teaching and research in the Department of Pathology (RF 55073) (Joint Project with Biological and Medical Research)	.....	95,000.00	.....
Harvard University, Cambridge, Massachusetts			
Support of School of Public Health (RF 45109)	100,000.00	.....	100,000.00
Development of legal medicine (RF 52075)	36,371.29	.....	29,210.23
Development of the Department of Dermatology of Harvard Medical School (RF 48039)	41,072.42	.....	.....

	APPROPRIATIONS		1955
	PRIOR YEARS	1955	PAYMENTS
MEDICAL EDUCATION AND PUBLIC HEALTH — *continued*			
Professional Education — continued			
UNITED STATES — *continued*			
Research and teaching of complete family medical care (RF 54092)	$220,196.26	$.....	$22,387.69
Johns Hopkins University, Baltimore, Maryland			
Institute of The History of Medicine. Support (RF 53085)	200,000.00	.....	200,000.00
School of Hygiene and Public Health			
For developmental purposes (RF 48037)	230,000.00	.....	75,000.00
Salaries of temporary staff to replace regular staff assigned to Institute of Hygiene of the University of the Philippines (RF 53068, 55175)	8,000.00	12,000.00	7,199.97
National League for Nursing, Inc., New York			
For program of the National Nursing Accrediting Service (RF 54127)	41,414.00	.....	20,707.00
New England Center Hospital, Boston, Massachusetts			
Postgraduate medical education in certain rural areas and towns in Massachusetts (RF 50100)	8,755.76	.....	*Cr.* 40.40
Simmons College, Boston, Massachusetts			
Toward establishment of a graduate course in public health nursing in cooperation with the Harvard School of Public Health (RF 53008)	14,931.34	.....	11,158.67
Teachers College, Columbia University, New York			
Nursing education research, experimentation and field service (RF 52103)	65,471.86	.....	17,146.74

University of Chicago, Illinois			
Department of Sociology. Study of integration of Negroes in medicine (RF 55124)	.....	38,100.00	19,050.00
Vanderbilt University, Nashville, Tennessee			
For use by the Department of Pediatrics of the School of Medicine in the exchange of senior assistants (RF 53157)	2,500.00	.....	500.00
Washington University, St. Louis, Missouri			
School of Medicine. Teaching of preventive medicine (RF 52111)	32,400.00	.....	15,600.00
Yale University, New Haven, Connecticut			
Work in the history of medicine (RF 51065)	3,000.00	.....	3,000.00
MEXICO			
National Institute of Cardiology, Mexico City			
Equipment (RF 52082)	1,718.64	.....	299.46
Children's Hospital, Mexico City			
Toward development of a research and training program (RF 54180)	150,000.00	.....	43,637.39
WEST INDIES			
Jamaica			
University College of the West Indies			
Field training and research in Faculty of Medicine and research in Department of Chemistry (RF 55094) (Joint Project with Biological and Medical Research)	.....	314,000.00	.....
Puerto Rico			
University of Puerto Rico, San Juan			
Development of the Medical School Library (RF 54021)	15,000.00	.....	10,000.00

	APPROPRIATIONS PRIOR YEARS	APPROPRIATIONS 1955	1955 PAYMENTS
MEDICAL EDUCATION AND PUBLIC HEALTH — *continued*			
Professional Education — continued			
SOUTH AMERICA			
Brazil			
Araraquara Health Training Center. 1953-1955 (RF 53155)	$6,610.36	$.....	$1,094.36
Campaign for the Improvement of Higher Education Personnel (Capes), Rio de Janeiro			
Support of program to train teachers for medical schools (RF 55139)	.....	124,000.00	23,758.61
Santa Casa de Misericordia, Rio de Janeiro			
Graduate training of physicians (RF 55114)	.....	57,120.00	5,580.00
University of Minas Gerais, Belo Horizonte			
Faculty of Medicine. General development (RF 55177) (Joint Project with Biological and Medical Research)	.....	339,000.00	.....
University of São Paulo			
Improvement of teaching facilities (RF 55053)	.....	35,500.00	3,071.81
Development of Faculty of Medicine at Ribeirão Preto (RF 55100)	.....	278,000.00	47,127.00
Chile			
Catholic University of Chile, Santiago			
Apparatus and research expenses of Departments of Physiology, Neurophysiology, and Physiopathology of the Medical School (RF 51131)	532.08	.....	11.48
Department of Neurosurgery. Salary and equipment (RF 53013)	900.00	.....	900.00

Preclinical teaching and research in Faculty of Medicine (RF 55052)	.....	123,600.00	11,849.34
University of Chile, Santiago			
Faculty of Medicine. General development (RF 55064)	.....	379,000.00	24,626.95
School of Public Health. Courses for sanitary engineers (GA 51121)	53.18	.....	.....
Colombia			
National University of Colombia, Bogotá			
Faculty of Medicine. Equipment (RF 54044)	60,000.00	.....	24,874.66
University of Valle, Cali			
Faculty of Medicine. Development of the Department of Preventive Medicine and Public Health and associated activities (RF 54179)	504,000.00	.....	46,294.32
School of Nursing (RF 55034)	.....	46,200.00	9,135.60
Peru			
University of San Marcos			
Department of Pathological Physiology. Teaching and research (RF 55028)	.....	90,000.00	19,923.35
Uruguay			
University Nursing School, Montevideo			
General budget (IH 47054)	10,144.47	.....	3,193.92
University of the Republic, Montevideo			
Improvement of teaching facilities (RF 55054)	.....	32,500.00	4,050.10
EUROPE			
Austria			
University of Vienna			
Local fellowships for training in child psychiatry (RF 52162)	7,210.44	.....	6,172.80

	APPROPRIATIONS		1955
	PRIOR YEARS	1955	PAYMENTS
MEDICAL EDUCATION AND PUBLIC HEALTH — *continued*			
Professional Education — continued			
EUROPE — *continued*			
Belgium			
University of Brussels			
Support of the Department of Social Medicine (RF 52034)	$15,363.31	$.....	$3,988.75
Finland			
University of Helsinki			
Medical School. Research and teaching positions for assistants in basic science institutes (RF 53054)	56,160.00	.....	5,544.00
State Medical Board of Finland, Helsinki			
Support of training program of the Uusimaa field demonstration and teaching area (RF 54009)	19,450.00	.....	12,738.25
France			
Association for the Mental Health of Children, Paris			
Development of child mental health teaching and research (RF 52158)	64,412.34	.....	16,230.31
Germany			
Health Authority of The Free Hanseatic City of Hamburg. Teaching program (RF 53147)	23,308.11	.....	6,176.30
Technical Institute, Stuttgart			
Education and research in sanitary engineering (RF 53094)	30,340.08	.....	26,043.95
University of Heidelberg			
School of Nursing. Teaching material and equipment and for travel of staff (RF 52123)	997.37	.....	.32

Physiological Institute			
Teaching and research (RF 52097)	626.84	.....	535.85
Teaching program (RF 55084)	.....	7,500.00	2,377.00
Great Britain			
Institution of Civil Engineers, London			
Bursaries for graduate training and research in public health engineering in universities in the United Kingdom (RF 52086, 54181)	50,362.63	.....	8,352.13
Royal Technical College, Glasgow, Scotland			
Support of postgraduate training and research facilities (RF 54124)	82,000.00	.....	4,285.85
University of Durham			
King's College, Newcastle-upon-Tyne. Toward program in public health engineering (RF 54104)	37,681.95	.....	10,216.70
University of Edinburgh, Scotland			
Faculty of Medicine			
Teaching of family practice (RF 52140)	45,393.02	.....	5,926.42
Nursing Teaching Unit (RF 55102)	.....	90,000.00	.....
University of London			
University College. Study of medical student selection (RF 52160)	18,678.44	.....	3,559.23
London School of Hygiene and Tropical Medicine			
Public Health practice experiments (RF 53026)	24,986.77	.....	20,887.95
Establishment of Department of Occupational Health (RF 55008)	.....	45,000.00	.....
University of Oxford			
School of Medicine. Laboratory facilities and equipment (RF 55106)	.....	156,000.00	117,127.50

	APPROPRIATIONS PRIOR YEARS	APPROPRIATIONS 1955	1955 PAYMENTS
MEDICAL EDUCATION AND PUBLIC HEALTH — *continued*			
Professional Education — continued			
EUROPE — *continued*			
Italy			
University of Naples			
Education and research in sanitary engineering (RF 53095)	$39,661.79	$.....	$10,336.11
Netherlands			
Institute of Preventive Medicine, Leiden			
Development of Institute (IH 49035)	15,089.69	.....	.....
Sweden			
Karolinska Institute, Stockholm			
Construction of a laboratory for the department of experimental surgery (RF 52004)	6,600.00	.....	.....
Switzerland			
Le Bon Secours School of Nursing, Geneva			
Development of graduate and undergraduate nursing education programs (RF 52187)	12,652.07	.....	5,853.61
Yugoslavia			
Institute of Hygiene and School of Engineering, Zagreb			
Development of School of Public Health Engineering (IH 50127)	1,348.68	.....	.....
Miscellaneous			
European symposia on medical education (RF 52024)	51.22	.....	51.22

FAR EAST			
India			
Christian Medical College, Vellore			
Department of Preventive and Social Medicine. Operation (RF 55115)	.....	34,100.00	.....
Indian Council of Medical Research, New Delhi			
Fellowships (RF 53044)	83,456.74	.....	12,736.41
Sawai Man Singh Medical College, Jaipur			
Research equipment (RF 53115)	7,023.22	.....	6,437.83
State Medical College Hospital, Trivandrum			
Development of improved clinical teaching facilities in medicine and nursing (RF 55182)	.....	35,000.00	.....
Japan			
Institute of Public Health, Tokyo			
For equipment, teaching, and field training facilities (RF 53098)	20,548.42	.....	12,242.77
Philippine Islands			
University of the Philippines, Manila			
To provide housing allowances and travel expenses for visiting staff of the Johns Hopkins School of Hygiene and Public Health (RF 53067, 55174)	8,017.50	12,200.00	5,152.32
NEAR EAST			
Lebanon			
American University of Beirut			
For development and operation of its medical division (RF 53001)	300,000.00	.....	100,000.00

	APPROPRIATIONS PRIOR YEARS	APPROPRIATIONS 1955	1955 PAYMENTS
MEDICAL EDUCATION AND PUBLIC HEALTH — *continued*			
Professional Education — continued			
AUSTRALIA			
University of Melbourne			
Equipment and supplies for the department of physiology (RF 51162)	$4,411.02	$.....	$3,844.88
AFRICA			
South Africa			
University of Natal, Durban			
For the development of a department of family practice (RF 54121)	127,200.00	.....	.....
Fellowships and Grants in Aid			
FELLOWSHIPS			
Administered by The Rockefeller Foundation (RF 54162, 55130, 55189)	320,000.00	490,000.00	146,617.40
GRANTS IN AID			
Allocations by The Rockefeller Foundation (RF 54163, 55190)	205,000.00	305,000.00	131,980.67
Field Service			
FIELD OFFICES			
(RF 53160, 54161, 55132, 55167)			
Africa and Asia Minor			
Egypt, Cairo. 1955	4,755.04	.....	3,626.64

Caribbean Region			
Dominican Republic, Ciudad Trujillo. 1955	3.88	.....	.....
Far East			
India, Delhi			
1955	26,094.41	.....	20,301.63
1956	.....	14,500.00	.....
Japan, Tokyo			
1955	3,958.93	.....	1,710.80
1956	.....	3,000.00	.....
South America			
Brazil, Rio de Janeiro			
1955	32,107.57	7,300.00	26,421.67
1956	.....	32,150.00	.....
Chile, Santiago. 1955	2,578.50	.....	50.67
Mexico, Mexico City			
1955	10,120.40	.....	5,029.14
1956	.....	7,600.00	.....
Miscellaneous			
1955	7,807.92	.....	297.00
1956	.....	4,000.00	.....
FIELD STAFF			
1955-1956 (RF 54164, 54167, 55167)			
Salary, Travel and Other Expenses	346,500.00	250,000.00	291,300.84

	APPROPRIATIONS PRIOR YEARS	APPROPRIATIONS 1955	1955 PAYMENTS
MEDICAL EDUCATION AND PUBLIC HEALTH — *continued*			
Special Projects			
Department of Public Health, Sacramento, California Toward support of a chronic disease epidemiology center (RF 54152)	$150,000.00	$.....	$49,900.00
Contingent—Field Service (RF 55167)	.....	10,000.00	.....
Exchange Fund (IH 33077)	14,161.66	.....	.....
Indian Council of Medical Research, New Delhi Office building (RF 55097)	.....	49,500.00	47,115.00
Rockefeller Institute for Medical Research, New York General expense of administration and operation (RF 54166)	50,000.00	.....	50,000.00
TOTALS — MEDICAL EDUCATION AND PUBLIC HEALTH	$4,283,271.83	$3,597,470.00	$2,131,154.93
BIOLOGICAL AND MEDICAL RESEARCH			
Experimental Biology and Medicine			
UNITED STATES			
Amherst College, Massachusetts Research in biology (RF 51110)	$9,300.00	$.....	$7,800.00
California Institute of Technology, Pasadena Research programs in biology and chemistry (RF 48030, 53176)	1,657,670.00	.....	671,604.52

Child Research Center of Michigan, Detroit			
Genetics of sickle cell anemia and allied disorders (RF 54185)	66,000.00	.....	22,000.00
Child Research Council of Denver, Colorado			
Studies in child growth and development (RF 50068, 51154)	37,500.00	.....	25,000.00
Columbia University, New York			
Enzyme research (RF 55029)	.....	35,000.00	7,000.00
Research in immunochemistry (RF 51018, 54113)	9,500.00	.....	7,500.00
Research in genetics and experimental zoology (RF 51069, 54063)	53,239.06	.....	27,525.44
Research in marine biology (RF 54087)	88,500.00	.....	50,400.00
Research in the Department of Biochemistry, College of Physicians and Surgeons (RF 51006, 51186, 52104)	69,123.35	.....	17,389.16
Cornell University, Ithaca, New York			
Research in biochemistry (RF 53178)	140,000.00	.....	9,252.94
Dartmouth College, Hanover, New Hampshire			
Research in cellular biology (RF 55074)	.....	50,000.00	12,500.00
Georgia State College for Women, Milledgeville			
Research in medical genetics (RF 52042)	363.16	.....	61.57
Gordon Research Conferences of the American Association for the Advancement of Science			
Expenses of foreign scientists at Conferences (RF 52018, 54132)	31,055.00	.....	9,994.09
Harvard University, Cambridge, Massachusetts			
Research in the Medical School on problems of tissue structure (RF 51052)	27,603.05	.....	5,611.00
Research in enzyme chemistry (RF 50020)	3,487.86	.....	3,450.00

	APPROPRIATIONS PRIOR YEARS	APPROPRIATIONS 1955	1955 PAYMENTS
BIOLOGICAL AND MEDICAL RESEARCH — *continued*			
Experimental Biology and Medicine — continued			
UNITED STATES — *continued*			
Research on the biochemistry of vision (RF 52068)	$5,771.96	$.....	$5,771.92
Research on physiological aspects of the development of behavior patterns at the Laboratory of Social Relations (RF 51179)	18,071.97	.....	8,225.00
Field study of population problems in India (RF 53173)	32,450.00	.....	27,715.76
Haskins Laboratories, New York			
Research in microbiology (RF 55006)	.....	60,000.00	20,000.00
Indiana University, Bloomington			
Research in genetics (RF 51051)	49,882.26	.....	45,350.93
Research in psychotherapy (RF 52113)	9,434.27	.....	*Cr.* 8,657.69
Iowa State College, Ames			
Research in protein chemistry (RF 51028)	91.00	.....	.....
Johns Hopkins University, Baltimore, Maryland			
Biochemical research (RF 53022, 55081)	69,000.00	5,000.00	27,985.03
Marine Biological Laboratory, Woods Hole, Massachusetts			
General budget (RF 54099)	80,000.00	.....	10,000.00
Massachusetts General Hospital, Boston			
Research in enzyme chemistry (RF 52003)	44,650.06	.....	12,725.05
Research in endocrinology and metabolism (RF 52129)	2,000.00	.....	2,000.00
Massachusetts Institute of Technology, Cambridge			
Research in physical chemistry of protein solutions (RF 52157)	24,047.04	.....	11,645.53
Research in X-ray crystallography (RF 53081, 55082)	2,025.00	4,000.00	6,025.00

National Research Council, Washington, D.C.			
Committee for Research in Problems of Sex (RF 51063, 54036)	102,343.04	.....	46,624.40
New England Medical Center, Boston, Massachusetts			
Research in endocrinology (RF 50076)	16,000.00	.....	.....
New York Botanical Garden, New York			
Research in basic plant biochemistry (RF 54066)	35,000.00	.....	10,500.00
New York University, New York			
Research in enzyme chemistry (RF 54150)	52,875.00	.....	12,762.50
Interdepartmental project on the rehabilitation of neurological patients (RF 51169)	20,122.79	.....	11,177.30
Northwestern University, Evanston, Illinois			
Research in the physical chemistry of proteins (RF 52066)	4,571.59	.....	4,533.99
Pennsylvania State University, University Park			
Biophysical research (RF 51124)	48.07	.....	.....
Polytechnic Institute of Brooklyn, New York			
Research on protein structure (RF 52083, 53063, 55103)	97,500.00	65,000.00	32,500.00
Roscoe B. Jackson Memorial Laboratory, Bar Harbor, Maine			
Studies of genetic factors of intelligence and emotional variation in mammals (RF 53074)	50,000.00	.....	50,000.00
Smith College, Northampton, Massachusetts			
Work in genetics (RF 53120, 54155, 55083)	11,402.03	4,200.00	12,423.17
Stanford University, Palo Alto, California			
Biochemical research (RF 51076)	4,915.26	.....	*Cr.* 1,926.84
Research in biochemistry of nucleic acids (RF 51077)	1,010.47	.....	1,010.47
Research in biology (RF 53020)	150,000.00	.....	150,000.00

	APPROPRIATIONS PRIOR YEARS	APPROPRIATIONS 1955	1955 PAYMENTS
BIOLOGICAL AND MEDICAL RESEARCH — *continued*			
Experimental Biology and Medicine — continued			
UNITED STATES — *continued*			
State University of Iowa, Iowa City			
Research in genetics (RF 53071)	$8,133.42	$.....	$8,133.42
University of California, Berkeley			
Research in biochemistry (RF 51078, 52044)	168.44	.....	*Cr.* 24.33
Research on the biochemistry of marine microorganisms (RF 52059)	6,251.67	.....	*Cr.* 37.61
Research in photosynthesis (RF 54001)	11,500.00	.....	4,700.00
Research in the Virus Laboratory (RF 54095) (Joint Project with Medical Education and Public Health)	170,000.00	.....	16,702.52
Establishment of an Institute for Personality Assessment and Research (RF 53092)	1.36	.....	*Cr.* 253.27
White Mountain Research Station. General support (RF 55036)	.....	15,000.00	7,000.00
University of Chicago, Illinois			
Research in experimental ecology (RF 53015)	3,297.50	.....	3,066.80
University of Illinois, Urbana			
Program of research and advanced training in microbiology in the Department of Bacteriology (RF 53096)	23,000.00	.....	1,942.00
University of Miami, Florida			
Support of research in marine biology (RF 53089)	35,589.79	.....	9,150.00
University of Minnesota, Minneapolis			
Research in human genetics at The Dight Institute of Human Genetics (RF 54076)	19,400.00	.....	19,400.00

Salary of a physiologist in the Department of Physiology (RF 54106)	13,500.00	.....	3,250.00
University of Oregon Medical School, Portland			
For work in constitutional medicine (RF 51004)	43,216.16	.....	10,403.66
University of Pennsylvania, Philadelphia			
Research in zoology (RF 53053)	103,023.89	.....	14,284.91
University of Pittsburgh, Pennsylvania			
Research on the chemistry of fats and proteins (RF 52065)	3,003.66	.....	3,000.00
University of Texas, Austin			
Research in genetics (RF 54045)	80,000.00	.....	19,680.36
University of Utah, Salt Lake City			
Research in enzyme chemistry (RF 52090)	13,951.93	.....	6,995.01
University of Washington, Seattle			
Research in physical biochemistry of proteins (RF 51091, 53062)	83,373.08	.....	10,746.55
University of Wisconsin, Madison			
Research in biochemistry (RF 51171)	10,188.33	.....	4,367.78
Research in genetics (RF 53108)	18,000.00	.....	8,124.62
Research in metabolism of plant tissues (RF 51009)	11,634.81	.....	11,540.70
Research in enzyme chemistry (RF 52064)	3,600.19	.....	3,587.44
Washington University, St. Louis, Missouri			
Research in plant physiology and plant biochemistry (RF 54046)	55,755.00	.....	17,859.39
Research in enzyme chemistry (RF 54149)	45,113.00	.....	11,049.00
Wayne University, Detroit, Michigan			
Research on natural plant products (RF 54023)	30,000.00	.....	20,039.47

	APPROPRIATIONS PRIOR YEARS	APPROPRIATIONS 1955	1955 PAYMENTS
BIOLOGICAL AND MEDICAL RESEARCH — *continued*			
Experimental Biology and Medicine — continued			
UNITED STATES — *continued*			
Woods Hole Oceanographic Institution, Massachusetts			
Support of two major appointments in marine biology (RF 52078)	$39,111.16	$.....	$.....
Yale University, New Haven, Connecticut			
Biochemical research (RF 51168)	32,672.84	.....	5,538.23
Research in the physical chemistry of proteins (RF 52029)	55,558.49	.....	17,223.97
Yerkes Laboratories of Primate Biology, Orange Park, Florida			
General support (RF 55077)	.....	50,000.00	10,000.00
CANADA			
Dalhousie University, Halifax			
Joint study by the Department of Obstetrics and Gynecology and by the Department of Psychiatry of psychological factors in pregnancy and childbirth (RF 51007)	6,124.83	.....	1,225.30
McGill University, Montreal			
Maintenance of Department of Psychiatry (RF 54043)	28,841.72	.....	11,327.35
Research on physiological basis of behavior (RF 51172, 54058)	60,998.67	.....	19,395.64
Montreal General Hospital			
Biochemical research (RF 53076)	7,982.00	.....	7,982.00
University of Saskatchewan, Saskatoon			
Studies of schizophrenia (RF 54100)	81,701.76	.....	32,204.87

MEXICO			
National Institute of Cardiology, Mexico City			
Research in neurophysiology and pharmacology (RF 49036)	3,689.96	.....	.....
National University of Mexico			
Institute of Chemistry. Equipment and supplies (RF 52189, 55002)	11,971.63	30,000.00	28,510.02
SOUTH AMERICA			
Brazil			
University of Brazil, Rio de Janeiro			
Research in Institute of Biophysics (RF 52012, 55018)	1,346.43	8,000.00	3,333.09
Research expenses in the Center of Genetics Research, Faculty of Philosophy (RF 53122)	7,500.00	.....	3,571.46
University of São Paulo			
Faculty of Medicine			
Work with radioactive isotopes in Radiochemistry Laboratory (RF 50146)	2,206.30	.....	2,115.82
Research expenses in the Isotope Laboratory (RF 55192)	.....	12,000.00	.....
Research in Laboratory of Histology and Embryology (RF 53119)	3,460.78	.....	3,021.29
Research expenses of Faculty of Medicine at Ribeirão Preto (RF 53145)	29,951.43	.....	15,732.46
Research in Laboratory of Cell Physiology (RF 55068)	.....	40,000.00	6,647.36
International cooperative research on population genetics (RF 55004)	.....	17,000.00	12,097.95

	APPROPRIATIONS PRIOR YEARS	APPROPRIATIONS 1955	1955 PAYMENTS
BIOLOGICAL AND MEDICAL RESEARCH — *continued*			
Experimental Biology and Medicine — continued			
SOUTH AMERICA — *continued*			
Chile			
Local Health Work. 1954 (GA 53128)	$81.59	$.....	$29.83
National Department of Sanitary Engineering. 1953 (RF 52190)	153.76	.....	.....
University of Chile, Santiago			
Research in experimental cytology in the Juan Noe Institute of Biology (RF 53016)	3,858.18	.....	3,498.19
Peru			
Division of Development of Program of Ministry of Health. 1948-1953 (IH 50170)	813.40	.....	582.78
Urugnay			
Ministry of Public Health, Montevideo			
Equipment and expenses of the Institute of Biological Research (RF 49008, 52011)	46,597.09	.....	10,137.63
EUROPE			
Belgium			
University of Brussels			
Research in neurophysiology (RF 50088, 55126)	9,195.10	30,000.00	7,244.64
University of Louvain			
Research in biochemistry (RF 54154)	11,200.00	.....	7,049.44
Denmark			
Carlsberg Foundation, Copenhagen			
Research in biochemistry (RF 51157)	13,663.48	.....	8,831.43

National Health Department. 1952-1954 (RF 52017)	1,289.50	.....	.....
University of Aarhus			
Research in biochemistry (RF 52148)	5,575.91	.....	2,181.00
Development of research and teaching in psychiatry (RF 49004)	4,827.46	.....	.....
University of Copenhagen			
Research on the biological uses of isotopes (RF 51158)	6,000.00	.....	4,500.00
Research in biochemistry (RF 52045)	3.36	.....	*Cr.* 1.67
Research in physiology in the Institute of Neurophysiology (RF 52133)	7,017.09	.....	5,756.13
Establishment of a Child Guidance Clinic (RF 50009)	9,386.65	.....	3,877.42
Research in genetics of mental defect (RF 54105)	12,803.20	.....	2,786.61
France			
Collège de France, Paris			
Equipment for an experimental monkey station in Algeria (RF 49001)	1,057.14	.....	.....
Research in biochemistry (RF 53154)	6,173.44	.....	5,212.28
Pasteur Institute, Paris			
Research in microbial chemistry (RF 54126)	49,485.18	.....	27,276.70
University of Aix-Marseille			
Equipment for research in neurophysiology (RF 54010)	19,022.49	.....	14,286.34
University of Paris			
Research in biochemistry in the Laboratory of Biological Chemistry (RF 51187, 55042)	6,352.27	6,500.00	6,824.09
Research in the Laboratory of Physical Chemistry (RF 53140)	9,190.50	.....	4,846.19

	APPROPRIATIONS PRIOR YEARS	APPROPRIATIONS 1955	1955 PAYMENTS
BIOLOGICAL AND MEDICAL RESEARCH — *continued*			
Experimental Biology and Medicine — continued			
EUROPE — *continued*			
Germany			
Philip University, Marburg			
Research in biochemistry (RF 55098)	$.....	$22,000.00	$19,825.00
University of Heidelberg			
Institute of Psychosomatic Medicine. Establishment and support (RF 53099)	9,457.13	.....	7,155.00
University of Munich			
Research in experimental zoology (RF 52062, 55032)	3,500.00	20,000.00	7,427.23
Great Britain			
Burden Neurological Institute, Bristol			
Research in neurophysiology (RF 52122)	8,818.21	.....	7,112.69
Marine Biological Association of the United Kingdom, Plymouth			
Development and continuation of special projects in marine biology and oceanography (RF 54122)	26,250.00	.....	7,500.00
Queen's University of Belfast, Northern Ireland			
Equipment for Department of Chemistry (RF 55015, 55044)	.....	16,500.00	15,222.86
Royal Institution of Great Britain, London			
Toward expenses of research on the structure of proteins (RF 54136, 55118)	15,000.00	30,300.00	4,910.67
St. Thomas' Hospital Medical School, London			
Research on relationship between physical form and physiological function in man and their development during growth (RF 52096)	2,738.70	.....	1,864.56

Society for Experimental Biology, London			
Expenses of American delegates to annual conferences on biological subjects (RF 52043)	5,126.50	.....	1,500.00
Strangeways Research Laboratory, Cambridge			
For the purchase of an electron microscope for research in experimental biology (RF 54128)	30,000.00	.....	9,441.62
Tavistock Institute of Human Relations, London			
General support (RF 52001)	46,066.55	.....	19,514.69
University College, Dublin, Ireland			
Research in biochemistry in the Department of Biochemistry and Pharmacology (RF 54027)	8,308.45	.....	4,881.45
University of Birmingham			
Research in biochemistry (RF 51137, 54137)	16,369.54	.....	3,996.09
Research in psychiatry and in the biochemistry and pharmacology of the nervous system (RF 53104)	67,323.40	.....	.....
Equipment for research in protein chemistry and metabolism (RF 55125)	.....	25,000.00	.....
University of Cambridge, England			
Biophysical research (RF 50024, 55145)	2,967.76	18,000.00	2,741.76
Molteno Institute of Biology and Parasitology. Equipment for research (RF 54157)	7,500.00	.....	7,428.31
Equipment for research in biochemistry (RF 53127)	1,741.14	.....	1,562.23
Research on biologically important materials (RF 51112)	20,584.51	.....	16,493.77
Research in X-ray crystallography (RF 55119)	.....	40,000.00	.....
Purchase of an ultracentrifuge for research on molecules (RF 55120)	.....	25,000.00	.....

	APPROPRIATIONS PRIOR YEARS	APPROPRIATIONS 1955	1955 PAYMENTS
BIOLOGICAL AND MEDICAL RESEARCH — *continued*			
Experimental Biology and Medicine — continued			
EUROPE — *continued*			
University of Edinburgh, Scotland			
Department of Chemistry. Toward expenses of structural investigations in the field of natural high polymers (RF 54125)	$45,000.00	$.....	$13,431.84
Department of Zoology. Research in biology (RF 55016)	.....	12,000.00	9,640.60
University of Glasgow, Scotland			
Toward expenses of conferences of European scientists interested in genetic problems (RF 54138)	7,500.00	.....	.....
University of London, England			
Galton Laboratory			
Research in human genetics (RF 55078)	.....	30,000.00	.....
Research in problems of human heredity (RF 50085)	6,170.57	.....	5,913.77
Imperial College of Science and Technology. Research on the organic chemistry of biologically important molecules (RF 52046)	8,256.36	.....	3,164.45
King's College			
Research in biophysics (RF 50065, 54130)	33,367.41	.....	8,896.94
Purchase of an electron microscope for research in biophysics (RF 54006, 54112)	30,000.00	.....	20,541.89
Research on structure of nucleic acid (RF 55009)	.....	35,000.00	13,211.67
Maudsley Hospital. Psychological effects of frontal-lobe operations in the Institute of Psychiatry (RF 53131)	12,224.99	.....	7,620.31

University College. Research in mammalian genetics in the Department of Eugenics, Biometry and Genetics (RF 53107)	17,727.84	.....	4,456.12
St. Mary's Hospital. Equipment for research on protein metabolism and enzymology (RF 55133)	.....	13,000.00	.....
University of Oxford, England			
Department of Human Anatomy. Development of new methods in microscopy and microspectroscopy and their application to biological problems (RF 52167)	2,158.31	.....	2,158.31
Dyson Perrins Laboratory of Organic Chemistry. Research in organic chemistry (RF 51155)	5,972.61	.....	3,563.44
Sir William Dunn School of Pathology. Equipment for research (RF 53141)	1,049.15	.....	.....
Research in biochemistry (RF 55010)	.....	80,000.00	21,906.61
Neurohistological research in the Department of Human Anatomy (RF 53105)	29,216.07	.....	10,798.90
Chemical Crystallography Laboratory. Research in X-ray crystallography (RF 52149, 55134)	352.87	9,000.00	.....
University of Sheffield, England			
Research in biochemistry (RF 51114, 54050)	79,268.27	.....	62.45
Victoria University of Manchester, England			
Equipment for Department of Organic Chemistry (RF 50058)	338.31	.....	.....
Research on the chemistry of biologically important materials (RF 53132)	37,398.10	.....	3,881.50
Welsh Regional Hospital Board, Cardiff			
Support of the Neuropsychiatric Research Centre at Whitchurch Hospital, Cardiff, Wales (RF 53027)	17,573.50	.....	5,314.67

	APPROPRIATIONS PRIOR YEARS	APPROPRIATIONS 1955	1955 PAYMENTS
BIOLOGICAL AND MEDICAL RESEARCH — *continued*			
Experimental Biology and Medicine — continued			
EUROPE — *continued*			
Italy			
Institute of Experimental Psychology, Florence			
Research on the psychological aspects of school child health and development (RF 52163)	$4,263.81	$.....	$2,499.38
Superior Institute of Public Health, Rome			
Research on the biology of the housefly (RF 52144)	12,882.79	.....	6,188.78
University of Naples			
Institute of Genetics Research (RF 54072) (Joint Project with Medical Education and Public Health)	25,562.50	.....	5,016.25
Research in the genetics of microcythemia (RF 55150)	.....	42,500.00	.....
University of Pavia			
Institute of Zoology. Research on the cytogenetics of anopheline mosquitoes (GA 5010, RF 52147, 54133)	19,297.66	.....	3,237.50
University of Pisa			
Support of teaching and research in the Department of Physiology (RF 51100, 54108)	23,675.28	.....	5,942.48
Zoological Station of Naples			
General expenses and equipment (RF 51059)	3,000.00	.....	3,000.00
Netherlands			
University of Amsterdam			
Support of the Psychosomatic Unit at the Wilhelmina Hospital (RF 51153)	23,199.54	.....	10,782.58
Research in experimental embryology at the Laboratory of Anatomy and Embryology (RF 53139)	5,216.15	.....	980.32

University of Utrecht			
Support of teaching and research at the Institute of Clinical and Industrial Psychology (RF 54109)	8,875.00	.....	3,263.66
Research in biophysics and biochemistry (RF 49113)	1,685.93	.....	1,500.00
Norway			
University of Oslo			
Institute of Respiratory Physiology. Research (RF 54007)	20,976.94	.....	9,517.83
Research in the epidemiology of mental disease (RF 54107)	12,307.50	.....	4,917.50
X-ray crystallography (RF 55041)	.....	12,000.00	3,737.30
Sweden			
Karolinska Institute, Stockholm			
Anatomical Institute. Research in electron microscopy (RF 53135, 54134)	29,604.86	.....	29,029.87
Institute of Chemistry			
Research in biochemistry (RF 47100)	7,044.05	.....	.....
Equipment and research (RF 55011)	.....	29,000.00	20,000.00
Department of Physical Cell Research. Equipment for biophysics research (RF 54153)	1,000.00	.....	132.24
Institute for Cell Research. Research in biophysics (RF 54022)	30,000.00	.....	21,000.00
Medical Nobel Institute. Department of Biochemistry. Research (RF 50017, 55012)	1,205.93	45,000.00	9,449.01
Research in brain physiology (RF 55061)	.....	23,400.00	10,586.72
University of Lund			
Research in endocrinology (RF 53032, 55020)	412.38	13,260.00	9,863.40

	APPROPRIATIONS PRIOR YEARS	APPROPRIATIONS 1955	1955 PAYMENTS
BIOLOGICAL AND MEDICAL RESEARCH — *continued*			
Experimental Biology and Medicine — continued			
EUROPE — *continued*			
University of Stockholm			
Research in radiobiology (RF 53036)	$1,324.59	$.....	$1,188.09
Research in biochemistry (RF 55135)	.....	12,000.00	4,650.00
University of Uppsala			
Researches in Institute of Physical Chemistry (RF 53126)	27,308.37	.....	6,288.76
Researches in Institute of Physiology (RF 49126, 55144)	314.55	22,000.00	266.06
Research on chemistry of biologically active molecules (RF 55043)	.....	6,000.00	6,000.00
Research in biochemistry (RF 52141, 55187)	25,186.74	60,000.00	9,971.77
Switzerland			
Federal Technical Institute, Zurich			
Research on chemistry of physiologically important compounds (RF 51058, 55037)	2,955.43	15,000.00	8,955.43
University of Basel			
Research in organic chemistry (RF 54151)	21,000.00	.....	20,147.20
University of Bern			
Theodor Kocher Institute. Equipment and assistance to foreign guests (RF 54075)	19,500.00	.....	8,300.00
University of Geneva			
Support of an Institute of Human Genetics (RF 54017)	5,334.00	.....	2,240.09

University of Zurich			
Psychiatric research (RF 50144)	3,710.79	.....	1,633.80
AFRICA			
University of Pretoria			
Plant biochemistry (RF 55110)	.....	7,500.00	.....
AUSTRALIA			
University of Adelaide			
Equipment for research in biochemistry (RF 55014)	.....	15,000.00	15,000.00
Walter and Eliza Hall Institute, Melbourne			
Equipment for research on virus diseases (RF 51064)	508.36	.....	68.71
FAR EAST			
India			
Indian Cancer Research Centre, Bombay			
Operation of a laboratory for studies on human variation (RF 52192, 55108)	10,514.65	14,500.00	8,401.42
Mysore State Department of Public Health			
Improvement of laboratory services. 1953-1954 (GA 52138)	453.35	.....	37.85
Virus Program			
Central Laboratory in New York City			
Maintenance. 1954-1956 (RF 54165, 55013, 55166)	178,230.95	220,000.00	163,109.40
Field Laboratories			
1954-1955 (RF 54165, 55013)			
Egypt, Cairo	737.02	.....	3.35
1954-1956 (RF 54165, 55013, 55166)			
Brazil	23,491.04	50,000.00	11,325.95

	APPROPRIATIONS PRIOR YEARS	APPROPRIATIONS 1955	1955 PAYMENTS
BIOLOGICAL AND MEDICAL RESEARCH — *continued*			
Virus Program — continued			
India, Poona	$32,054.69	$51,000.00	$10,559.82
South Africa, Johannesburg	31,668.72	22,500.00	16,221.90
Trinidad, Port of Spain	85,407.90	66,050.00	90,195.73
California	49,346.03	25,000.00	34,492.55
Miscellaneous	.....	33,250.00	.....
United States			
Johns Hopkins University Virus Diseases. 1955-1960 (RF 55092)	.....	150,000.00	38,000.00
Field Service			
Field Staff. Salary, travel, and other expenses 1955-1956 (RF 54167, 55166)	291,000.00	309,000.00	256,318.24
Contingent. (RF 54165, 55166)	12,000.00	10,000.00	.....
Europe			
Great Britain			
Queen's University of Belfast Department of Microbiology. 1955-1956 (RF 55065)	.....	21,000.00	15,356.02
Fellowships and Grants in Aid			
FELLOWSHIPS			
Administered by The Rockefeller Foundation. (RF 54162, 55130, 55189)	200,000.00	200,000.00	41,953.64
GRANTS IN AID			
Allocations by The Rockefeller Foundation. (RF 54163, 55131, 55190)	305,000.00	305,000.00	90,836.81

Special Projects

National Center for Scientific Research, Paris, France Travel of non-French delegates to conferences of scientists (RF 52058)	23,685.76	.....	23,685.76
Congress for Cultural Freedom, Paris Support of Science and Freedom Committee (RF 55022)	.....	12,000.00	3,000.00
Conservation Foundation, New York Research and general administrative expenses (RF 53091)	40,312.74	.....	25,000.00
Institute of Biology and Technological Research, Curitiba, Brazil Equipment for a new biological laboratory building (RF 52009)	23,238.07	.....	17,400.56
National Research Council, Washington, D. C. Division of Biology and Agriculture. Support of the activities of the Committee on Educational Policies (RF 54059)	50,000.00	.....	29,014.23
University of Brazil Research Center of Brazilian Geography (RF 55109)	.....	2,400.00	.....
University of California, Berkeley White Mountain Research Station. Support (RF 52117)	9.19	.....	*Cr.* 254.11
University of Chicago, Illinois Advanced training in applied statistics (RF 51087) (Joint Project with Social Sciences)	21,819.87	.....	15,361.66
University of Rio Grande Do Sul, Brazil For research expenses in the Faculty of Philosophy (RF 53148)	33,773.92	.....	10,125.06

	APPROPRIATIONS PRIOR YEARS	APPROPRIATIONS 1955	1955 PAYMENTS
BIOLOGICAL AND MEDICAL RESEARCH — *continued*			
Special Projects — continued			
University of São Paulo, Brazil			
Research expenses, equipment and supplies for science departments (RF 50145, 53143)	$30,336.69	$.....	$17,084.76
TOTALS — BIOLOGICAL AND MEDICAL RESEARCH	$6,850,880.30	$2,601,860.00	$3,320,761.23
AGRICULTURE			
Operating Programs			
CENTRAL AMERICA AND MEXICO			
Central America			
Establishment of a corn improvement project (RF 53170, 54172, 55165)	$63,415.39	$42,000.00	$34,481.90
Mexico			
Regular Program. 1953-1956 (RF 51205, 52179, 53166, 54168, 55090, 55165)	300,062.42	186,300.00	194,860.30
For basic poultry research and training centers	.....	40,000.00	.....
Agricultural Research Centers			
For establishment of centers in the States of Sonora and Vera Cruz (RF 54169)	150,000.00	.....	49,944.44
Research, demonstration and extension program, State of Mexico (RF 51210, 54141)	38,328.37	.....	14,677.67

Mexican Ministry of Agriculture			
Toward costs of an agricultural education and extension service (RF 53045, 53167, 55165)	63,397.55	75,000.00	35,422.28
SOUTH AMERICA			
Chile			
Operating Program. 1955-1956 (RF 54173, 55165)	60,000.00	93,000.00	9,662.64
Toward greenhouse construction	.....	25,000.00	.....
Colombia			
Agricultural Experiment Station, El Rubi			
Furnishing expert advice and service in connection with its development (RF 52126)	15,233.18	.....	1,486.99
Agricultural Research Centers			
To strengthen centers at Medellín, Armero, Montería and Palmira (RF 54171)	40,000.00	.....	38,133.03
Ministry of Agriculture			
Experimental greenhouse (RF 53169)	22,785.08	.....	21,198.39
Regular Program			
1953-1956 (RF 52175, 52181, 53162, 53168, 54170, 55165)	139,633.89	129,250.00	73,309.71
Establishment of an animal husbandry research center	.....	25,000.00	.....
FIELD SERVICE			
Field Staff. 1953-1955			
Salary, travel, and other expenses (RF 52182, 53171, 54167, 55165)	537,895.51	566,000.00	457,333.53
CONTINGENT (RF 55165)	.....	10,000.00	.....

	APPROPRIATIONS PRIOR YEARS	APPROPRIATIONS 1955	1955 PAYMENTS
AGRICULTURE — *continued*			
Grants to Institutions			
CENTRAL AMERICA AND MEXICO			
Central America			
Costa Rica			
Inter-American Institute of Agricultural Sciences, Turrialba			
Development of library resources and a scientific communication program (RF 49077)	$4,039.04	$.....	$3,840.00
Latin American Agricultural Information Center, Turrialba			
Establishment and support (RF 52109)	40,000.00	.....	6,685.40
Honduras			
Pan American Agricultural School, Tegucigalpa			
Scholarships (RF 54070)	22,500.00	.....	6,901.00
Mexico			
Mexico Agricultural Education			
To improve agricultural education in Mexico (RF 52108)	26,350.00	.....	.....
Technological Institute and School of Advanced Studies of Monterrey, Nuevo León (RF 52108, 54140)	73,585.01	.....	28,007.11
Antonio Narro College of Agriculture, Saltillo, Coahuila	120.52	.....	3.50
National College of Agriculture, Chapingo, State of Mexico	24,384.15	.....	4,168.36

SOUTH AMERICA			
Brazil			
Agronomy Institute of The South, Pelotas			
Research in cereal improvement (RF 55140)	.....	60,000.00	.....
Gammon Institute, Lavras, Minas Gerais			
College of Agriculture. Teaching and laboratory facilities and development of the College Farm (RF 53110, 55148)	9,801.78	60,000.00	8,000.00
Institute of Agronomy, Campinas			
Equipment for climatological research (RF 53010)	552.01	.....	6.72
Purchase of greenhouses and ultracentrifuge for plant virus research (RF 55141)	.....	30,000.00	.....
Rural University of the State of Minas Gerais			
Equipment and supplies for the Schools of Agriculture and Veterinary Medicine (RF 52016)	2,037.42	.....	384.41
Laboratory equipment and supplies for the School of Veterinary Medicine (RF 55149)	.....	50,000.00	.....
Equipment for the Department of Domestic Science and materials for the library of the College of Agriculture (RF 54011)	16,432.15	.....	4,723.89
University of Rio Grande Do Sul, Pôrto Alegre			
Equipment, supplies and library materials (RF 53149)	9,070.77	.....	952.34
University of São Paulo			
Equipment and supplies for work in the Faculty of Veterinary Medicine (RF 51163, 53144, 54114)	15,210.18	.....	6,544.11
Institute of Agronomy, Campinas (RF 50148)	472.18	.....	*Cr.* .93
Superior School of Agriculture. Piracicaba (RF 50147, 55067)	2,929.70	120,000.00	38,311.80
Biological Institute, São Paulo (RF 50149)	647.81	.....	.....

	APPROPRIATIONS PRIOR YEARS	APPROPRIATIONS 1955	1955 PAYMENTS
AGRICULTURE — *continued*			
Grants to Institutions — *continued*			
SOUTH AMERICA — *continued*			
Chile			
Bacteriological Institute of Chile, Santiago			
Studies on animal viruses (RF 52007, 55019)	$3,407.69	$4,600.00	$34.93
Equipment and supplies for the Institute farm and animal colonies (RF 54013)	3,036.85	.....	2,291.36
Colombia			
Inter-American Society of Plant Breeders, Plant Pathologists, and Entomologists			
Expenses of conference held in 1955 (RF 53007)	21,685.70	.....	18,755.51
National University of Colombia			
Faculty of Agronomy, Medellín			
Teaching and research facilities, study trips of staff members, and to assist in bringing foreign visiting professors to the Faculty (RF 49031)	200.00	.....	40.00
Faculties of Agronomy at Palmira and Medellín			
Toward cost of student dormitory at each of these agricultural colleges (RF 50102)	3,776.22	.....	1,359.38
Faculty of Agronomy, Palmira			
Teaching and research facilities, study trips of staff members, and to assist in bringing foreign professors to the Faculty (RF 51085)	10,404.84	.....	5,759.24
Peru			
National School of Agriculture, La Molina, Lima			
Equipment, supplies, and library materials for a col-			

lege of advanced and postgraduate studies (RF 52139)	2,343.03	.....	580.68
Cereal research (RF 55058)	.....	45,000.00	16,233.37
University of San Marcos, Lima			
Faculty of Veterinary Medicine. Equipment and supplies (RF 50150)	43,253.93	.....	.....
Uruguay			
University of the Republic, Montevideo			
Faculty of Veterinary Medicine. Equipment and supplies (RF 55003)	.....	30,000.00	11,246.25
EUROPE			
Sweden			
Royal Agricultural College of Sweden, Uppsala			
Purchase of an infrared spectrophotometer (RF 55122)	.....	25,000.00	.....
University of Lund			
Institute of Genetics. Research in genetics and plant breeding (RF 52142, 55121)	6,500.60	40,000.00	13,400.00
FAR EAST			
India			
Government of Uttar Pradesh			
Physical Plant (RF 53180)	35,000.00	.....	35,000.00
Pilot development project at Etawah (RF 52053)	90,808.98	.....	69,514.90
Uttar Pradesh Government Horticultural Research Station, Saharanpur, U.P.			
Purchase of library materials and laboratory equipment for research on horticultural fruits (RF 55183)	.....	47,000.00	.....

	APPROPRIATIONS PRIOR YEARS	APPROPRIATIONS 1955	1955 PAYMENTS
AGRICULTURE — *continued*			
Grants to Institutions — continued			
FAR EAST — *continued*			
Japan			
National Institute of Agricultural Sciences			
Purchase of laboratory equipment to improve its research program (RF 55185)	$.....	$50,000.00	$.....
Philippines			
University of The Philippines			
College of Agriculture, Laguna			
Costs of scholarship program for Indonesian high school graduates (RF 55172)	.....	120,000.00	.....
Purchase of laboratory equipment and teaching materials (RF 55173)	.....	40,000.00	.....
Thailand			
Kasetsart University, Bangkok			
Supplies and equipment, and library materials for the Department of Home Economics (RF 55184)	.....	25,000.00	.....
SOUTH PACIFIC			
New Caledonia			
South Pacific Commission, Noumea			
Survey of infectious diseases of the Rhinoceros beetle (RF 55093)	.....	47,000.00	.....
UNITED STATES			
Alabama Polytechnic Institute, Auburn			
Training and research in the field of nematology (RF 54142)	45,000.00	.....	20,000.00

California Institute of Technology, Pasadena			
Earhart Plant Research Laboratory. Research on the water relations of plants (RF 53051)	18,461.36	.....	14,612.96
Connecticut Agricultural Experiment Station, New Haven			
Research in genetics (RF 48018, 54074)	25,935.23	.....	4,443.36
Cornell University, Ithaca, New York			
Research in the Department of Agronomy of the New York State College of Agriculture (RF 53042)	50,000.00	.....	8,408.06
Louisiana State University, Baton Rouge			
Center for training in research on rice (RF 55057)	.....	140,000.00	42,500.00
Ohio State University			
Department of Agricultural Biochemistry. Research on the biochemistry of seed germination (RF 55128)	.....	25,000.00	10,340.00
Purdue University, Lafayette, Indiana			
Research in genetics (RF 52038, 55080)	159.74	22,500.00	7,444.29
University of California, Berkeley			
Citrus Experiment Station, Riverside. Research on the mode of action of insecticides (RF 54111, 55017)	15,000.00	7,300.00	18,550.00
University of Florida, Gainesville			
Expenses of a counselor to Latin American students enrolled in agricultural courses (RF 52035)	6,193.27	.....	4,710.69
University of Illinois, Urbana			
Research in experimental biology (RF 54037)	84,450.00	.....	8,972.50
Research on the mode of action of insecticides (RF 52032)	1,988.52	.....	.....
Research on the biochemistry of insects (RF 54038)	61,611.00	.....	15,111.00
Program of research in entomology (RF 53070)	16,410.00	.....	3,487.93
University of Minnesota, Minneapolis			
Research in the Departments of Plant Pathology and Botany and of Agronomy and Plant Genetics (RF 53043)	24,585.95	.....	22,449.84

	APPROPRIATIONS PRIOR YEARS	APPROPRIATIONS 1955	1955 PAYMENTS
AGRICULTURE — *continued*			
Grants to Institutions — continued			
UNITED STATES — *continued*			
University of North Carolina, Chapel Hill			
Research in mathematical and experimental genetics under the auspices of the Institute of Statistics (RF 52186)	$102,000.00	$.....	$34,000.00
University of Texas			
Research in biochemistry and physiology of algae (RF 55007)	.....	30,000.00	10,000.00
University of Wisconsin			
Department of Plant Pathology. Program of fundamental studies within plants and tissue cultures (RF 55151)	.....	48,000.00	.....
Fellowships, Scholarships, and Grants in Aid			
FELLOWSHIPS			
Administered by The Rockefeller Foundation (RF 54162, 55130, 55189)	200,000.00	300,000.00	77,686.92
SCHOLARSHIPS			
Latin American Scholarships (RF 50151, 51120, 54103, 55107, 55165)	97,144.37	135,000.00	35,463.79
GRANTS IN AID			
Allocations by The Rockefeller Foundation (RF 54163, 55131, 55190)	*250,000.00*	*300,000.00*	*48,164.28*

Special Projects			
UNITED STATES			
Boy Scouts of America			
Support of a program of conservation of natural resources (RF 55146)	.....	50,000.00	5,000.00
Nonconventional Agriculture			
UNITED STATES			
Stanford Research Institute, Palo Alto, California			
1955 World Symposium on Applied Solar Energy in Phoenix (RF 55076)	.....	26,000.00	26,000.00
University of California, Berkeley			
Research in mass culture and physiology of algae (RF 55049)	.....	60,000.00	35,000.00
University of Maryland, College Park			
Algal research (RF 55072)	.....	33,000.00	10,167.00
University of Wisconsin, Madison			
Research in utilization of solar energy (RF 55048)	.....	250,000.00	49,716.21
EUROPE			
University of London, England			
Imperial College of Science and Technology. Research program on the physical and chemical properties of water (RF 54057)	15,180.62	.....	5,580.63
FAR EAST			
Japan			
Tokugawa Institute for Biological Research, Tokyo			
Equipment and research expenses (RF 53174)	20,149.71	.....	5,010.31
TOTALS—AGRICULTURE	$2,933,571.72	$3,431,950.00	$1,736,073.98

SOCIAL SCIENCES	APPROPRIATIONS PRIOR YEARS	APPROPRIATIONS 1955	1955 PAYMENTS
American Law Institute, Philadelphia, Pennsylvania			
Preparation of model criminal code with commentaries (RF 51213, 53066)	$135,645.88	$.....	$49,998.18
American Museum of Natural History, New York			
Study of social change in the Admiralty Islands (RF 52143)	2,616.55	.....	2,616.55
Bennington College, Vermont			
Study of interest-group interaction in the political process (RF 51083)	8,411.64	.....	.....
Brookings Institution, Washington, D. C.			
Preparation of a history of the Federal Reserve System (RF 54061)	256,675.00	.....	.....
Research and education (RF 52185)	75,158.44	.....	73,190.28
Clay, Sir Henry			
For assistance and compensation in a program of study and writing (RF 54079)	15,000.00	.....	.....
Columbia University, New York			
Development of a program of Far Eastern Studies through the various social sciences departments (RF 54073, 55069)	12,929.22	95,000.00	12,929.22
School of International Affairs. General support of the Russian Institute (RF 50133)	60,000.00	.....	60,000.00
Study of British-Soviet-American relations from 1940 to 1947 (RF 54145, 55086)	8,930.00	10,000.00	6,070.00
Department of Public Law and Government. Research in international law (RF 55030)	.....	*24,000.00*	*18,000.00*

Cornell University, Ithaca, New York			
Development and testing of improved research methods for studies in underdeveloped areas (RF 53002)	17,855.28	.....	11,662.04
Program of research on community action and intergroup relations (RF 50104)	20,692.07	.....	20,692.07
Council on Foreign Relations, Inc., New York			
Two research and publication projects in the field of international relations (RF 52092)	10,000.00	.....	.....
Program in international relations (RF 55047)	.....	500,000.00	500,000.00
Crete Survey			
Expenses of a survey in Crete as a means of exploring ways of raising the standard of living in underdeveloped countries (RF 48102)	4.75	.....	.....
Dartmouth College, Hanover, New Hampshire			
Pilot study of the relation of overseas transport to the development of underdeveloped areas (RF 53152)	9,120.00	.....	9,026.69
German School for Political Science, Berlin			
Preparation of source books and outline manuals in political science (RF 53114)	5,410.70	.....	3,935.25
Duke University, Durham, North Carolina			
Studies of differences in state per capita incomes (RF 51072)	20,312.93	.....	10,000.00
Research on the history of socio-economic thought (RF 54071)	33,000.00	.....	6,600.00
Polytechnic Institute, Paris, France			
Research and training program of the Econometric Laboratory (RF 53133)	19,415.87	.....	11,635.67
Fellowships			
Administered by The Rockefeller Foundation (RF 51222, 52196, 53182, 54162, 55130, 55189)	332,863.96	150,000.00	102,307.63

SOCIAL SCIENCES — *continued*	APPROPRIATIONS PRIOR YEARS	APPROPRIATIONS 1955	1955 PAYMENTS
Australia-New Zealand Fellowship Committee Administrative expenses (RF 52168, 55155)	$514.68	$2,760.00	$514.68
Canadian Social Science Research Council, Montreal For special fellowship assistance (RF 53087)	52,731.25	.....	17,042.50
Program of research and publication and for awards of fellowships and professorial leaves (RF 52112)	29,289.06	.....	29,289.06
Social Science Research Council, New York (RF 53023, 53181, 55188)	321,250.00	485,000.00	116,250.00
Fletcher School of Law and Diplomacy, Medford, Massachusetts Case study of United States commercial policy (1933-1954) (RF 53128)	13,743.08	.....	13,743.08
Gokhale Institute of Politics and Economics, Poona, India Economic and demographic research program (RF 51094)	8,807.25	.....	2,944.16
General purposes (RF 55170)	.....	150,000.00	.....
Grants in Aid Allocations by The Rockefeller Foundation (RF 48144, 50109, 51183, 51226, 52164, 52200, 53153, 53183, 54163, 55131, 55190)	620,015.63	430,000.00	290,762.10
Grant in Aid Fund for visiting scholars at Harvard Research Center in Entrepreneurial History (RF 51127)	1,470.00	.....	.....
Hague Academy of International Law, Netherlands For use by its Center for Study and Research in International Law and International Relations (RF 55138)	.....	122,000.00	6,750.00

Harvard University, Cambridge, Massachusetts			
Research Center in Entrepreneurial History. For research (RF 52081)	60,006.40	.....	15,000.00
Graduate School of Business Administration. Support of research on profits and the functioning of the economy (RF 52063)	22,317.31	.....	22,174.77
Laboratory of Social Relations			
Research on the structure and functioning of working committees (RF 53048)	17,500.00	.....	14,552.15
Study of conflicts within occupational roles (RF 53049)	15,478.15	.....	9,086.89
Study of comparative values in five cultures (RF 51175)	33.49	.....	.....
Studies of state election statistics (RF 51082)	22,304.52	.....	2,528.00
The Law School. For the advancement of the status of legal and political philosophy (RF 54051)	20,000.00	.....	20,000.00
Program of economic research (RF 51071, 55176)	12,500.00	240,000.00	12,500.00
Hunter College, New York			
Comparative study of union-management relations in the United States and Germany (RF 53073)	12,744.46	.....	12,744.46
IFO-Institute for Economic Research, Munich, Germany			
Research program in economics (RF 53146)	12,943.78	.....	11,701.92
Indian Council of World Affairs, Delhi			
Support of studies of Indian-United States relations in cooperation with the Council on Foreign Relations, New York (RF 54089)	14,530.00	.....	3,637.49
Institute for Political Science, Berlin, Germany			
Study of the consolidation of the Nazi totalitarian system (RF 53113)	7,492.64	.....	5,778.10
Institute of Applied Economics, Paris, France			
Research and analysis of national income and wealth (RF 54144)	21,000.00	.....	10,040.63

	APPROPRIATIONS PRIOR YEARS	APPROPRIATIONS 1955	1955 PAYMENTS
SOCIAL SCIENCES — *continued*			
Institute for Advanced Study, Princeton, New Jersey			
Research in history and government (RF 53118, 54116)	$7,679.96	$.....	$7,500.00
For assistance and compensation in a program of study and writing (RF 49064)	2,975.70	.....	1,250.00
International African Institute, London, England			
Field studies of the Fulani-speaking peoples of West Africa (RF 51034)	1,590.76	.....	1,003.93
International Bank for Reconstruction and Development, Washington, D. C.			
Establishing and operating an Economic Development Institute (RF 54182)	85,000.00	.....	38,125.00
Japan Sociological Society, Tokyo			
Study of social stratification and mobility in Japan (RF 55040)	.....	13,000.00	10,400.00
Johns Hopkins University, Baltimore, Maryland			
Salaries and travel expenses of European visiting professors in the Department of Political Economy (RF 51111)	505.43	.....	*Cr.* 1,273.07
Research guidance program by the Department of Political Economy (RF 54069)	33,475.00	.....	13,375.00
London School of Economics and Political Science, England			
Fellowships and studentships in international relations (RF 55096)	.....	55,200.00	2,047.83
Purchase of land for expansion of school plant (RF 31028)	8,153.32	.....	8,153.32
Massachusetts Institute of Technology, Cambridge			
Study of non-economic factors in economic development (RF 55180)	.....	150,000.00	.....

Miami University, Oxford, Ohio			
Studies of population redistribution (RF 52028)	30,291.81	.....	19,036.93
National Bureau of Economic Research, New York			
General programs and special programs of research in finance and fiscal policy (RF 49141, 50134)	600,000.00	.....	200,000.00
Study of Soviet economic growth (RF 53125)	159,593.01	.....	130,000.00
National Council of The Churches of Christ in the United States of America, New York			
Studies by its Department of The Church and Economic Life (RF 52054)	60,539.19	.....	28,547.03
National Foundation of Political Science, Paris, France			
Study of changes in the structure of the French economy (RF 53025)	23,567.38	.....	20,941.88
National Institute of Economic and Social Research of Great Britain, London			
Expenses of the International Association for Research in Income and Wealth (RF 50006)	3,887.38	.....	3,887.38
Study of the economic experience of the United Kingdom (RF 54024)	45,842.64	.....	9,613.74
New School for Social Research, New York			
Institute of World Affairs. Research on *The Written and The Living Charter of the United Nations* (RF 54053)	7,500.00	.....	7,500.00
New York University, New York			
Study of the effects of an orientation program for foreign students (RF 55154)	.....	15,000.00	7,500.00
Northwestern University, Evanston, Illinois			
Costs of the study of the structure and functioning of industrial markets (RF 54101)	59,000.00	.....	12,255.08

	APPROPRIATIONS PRIOR YEARS	APPROPRIATIONS 1955	1955 PAYMENTS
SOCIAL SCIENCES — *continued*			
Princeton University, New Jersey			
Office of Population Research of the School of Public and International Affairs (RF 48105, 53077, 55050)	$496.14	$500,000.00	$50,000.00
Study of the relationship between the disciplines of geography and political science (RF 54040)	16,300.00	.....	3,100.00
Institute of International Studies. General support (RF 51017)	40,000.00	.....	40,000.00
Research on the origin of modern legal institutions, representative government and social philosophy in the West (RF 54078)	16,889.45	.....	10,500.00
Queen's University, Kingston, Canada			
Program of advanced training and research in fiscal, monetary and economic policy (RF 53055)	26,845.54	.....	7,188.17
Royal Institute of International Affairs, London, England			
History of the war and peace settlement (RF 52002)	20,123.34	.....	.....
Research on Europe, the Middle East, and Southeast and East Asia (RF 53046)	27,052.50	.....	22,410.00
Study of *The Theory of International Economic Policy* (RF 53047)	1,515.12	.....	.....
Support of a study of race relations in Central Africa (RF 54025)	21,718.59	.....	9,289.07
Royal Statistical Society, London, England			
Library facilities and additional secretarial and editorial assistance (RF 50087)	644.24	.....	644.24
Social Science Research Council, New York			
Preparation of a series of monographs based on the 1950 census (RF 52118)	10,000.00	.....	5,000.00

Support of the *Current Digest of the Soviet Press* (RF 51218, 54067) (*Joint project with Humanities*)	103,856.60	.....	17,906.48
Conferences and planning (RF 51204)	25,000.00	.....	25,000.00
Grants in aid of research (RF 54039)	170,000.00	.....	50,000.00
Program of inter-university summer seminars (RF 53175)	73,000.00	.....	32,638.26
Study of *Economic Growth: The Problem and Its Setting* (RF 52105)	28,000.00	.....	7,000.00
Stanford University, Palo Alto, California			
Research program (RF 51060)	4,407.09	.....	4,270.47
Food Research Institute. Program of predoctoral training in agricultural economics research (RF 50086)	9,177.98	.....	7,551.49
State Historical Society of Colorado, Denver			
Study of the western range cattle industry (1865-1895) (RF 52099)	4,116.68	.....	4,116.68
University of Basel, Switzerland			
Development of research and training in monetary and credit economics (RF 52060)	85,912.56	.....	20,000.00
University of Cambridge, England			
Department of Applied Economics. Study of the Social Accounts of Cambridgeshire (RF 51177)	27,619.01	.....	9,595.06
History of English criminal law (RF 51096)	6,463.29	.....	3,489.85
University of Chicago, Illinois			
Toward the costs of the fourth volume of *History of Public Administration in the United States* (RF 52039)	12,147.41	.....	5,185.49
Toward the costs of establishing a Workshop in Money and Banking (RF 53179)	34,000.00	.....	9,982.95
Research on low productivity in American agriculture (RF 51088)	1,263.19	.....	.....
Research in the field of public finance (RF 54052)	43,000.00	.....	16,500.00

	APPROPRIATIONS PRIOR YEARS	APPROPRIATIONS 1955	1955 PAYMENTS
SOCIAL SCIENCES — *continued*			
Research into the relationship between large-scale industrial enterprise and the development and use of inventions (RF 54080)	$7,500.00	$.....	$7,500.00
Research in mathematical statistics (RF 53061)	135,000.00	.....	18,460.00
Research on John Law's system of managed currency (RF 54086)	7,500.00	.....	3,650.00
Field research under the Philippine Studies Program (RF 55116)	.....	20,000.00	4,150.00
Study of genesis and development of industrial civilization (RF 54117)	5,000.00	.....	2,500.00
University of Genoa, Italy			
Research program (RF 54047)	79,200.00	.....	24,870.00
University of Heidelberg, Germany			
Alfred Weber Institute for Social and Political Sciences. Research program on political parties (RF 53056)	4,516.09	.....	3,775.90
Research and teaching in political science (RF 55101)	.....	37,150.00	7,490.70
University of Michigan, Ann Arbor			
Program of methodological research in the field of human relations (RF 53093)	20,896.34	.....	13,526.73
Study of behavior in a small group (RF 53111)	3,950.00	.....	3,950.00
Survey Research Center			
Study of population trends in the United States (RF 54064)	8,555.00	.....	8,555.00
Study of voting behavior in the 1956 presidential election (RF 55143)	.....	110,000.00	39,000.00
University of Minnesota, Minneapolis			
Studies of social disorganization (RF 53112)	7,452.00	.....	5,032.61

University of Missouri, Columbia			
Study of the rural church as a social institution in Missouri (RF 51216, 55137)	10,131.90	4,245.00	9,619.20
University of Notre Dame, South Bend, Indiana			
Research in international relations (RF 55025)	.....	100,000.00	14,250.00
University of Oxford, England			
Nuffield College			
Completion of volume of Reflections on International Administration (RF 54085)	7,000.00	.....	5,977.12
Costs of a program of research and training in African studies (RF 54048)	85,500.00	.....	9,048.12
Additional research faculty in the social sciences (RF 46132)	81,209.84	.....	5,591.25
University of Pennsylvania, Philadelphia			
Studies on redistribution of population and economic growth in the United States (RF 52106)	32,000.00	.....	31,193.65
Studies in labor mobility (RF 54131)	92,500.00	.....	10,500.00
University of The Philippines, Manila			
Institute of Public Administration. Research and training program (RF 55117)	.....	68,000.00	.....
University of Toronto, Canada			
Research on problems of Canadian development (RF 53086)	169,332.03	.....	40,350.00
University of Vienna, Austria			
Study of the economic situation of Austrian peasants on small farms (RF 53084)	1,020.00	.....	900.00
University of Wisconsin, Madison			
Study of tax administration in Wisconsin (RF 55001)	.....	36,000.00	17,050.00

	APPROPRIATIONS PRIOR YEARS	APPROPRIATIONS 1955	1955 PAYMENTS
SOCIAL SCIENCES — *continued*			
Study of the law and lumber industry in Wisconsin (RF 48051)	$.05	$.....	*Cr.*$2,000.00
Research in the field of legal history (RF 53052)	68,759.00	.....	11,042.12
Vanderbilt University, Nashville, Tennessee			
Institute of Research and Training in the Social Sciences. Research in agricultural economics and in the organization of industry (RF 52077)	59,795.10	.....	34,219.94
Vassar College, Poughkeepsie, New York			
Foreign policy making in Ceylon (RF 55085)	.....	14,800.00	9,800.00
Victoria University of Manchester, England			
Faculty of Economic and Social Studies. Support of research in economics and government and in social anthropology (RF 51097)	1,766.90	.....	282.43
Yale University, New Haven, Connecticut			
Studies of communication and attitude change (RF 51174)	32,044.77	.....	15,900.00
TOTALS — SOCIAL SCIENCES	$5,190,493.32	$3,332,155.00	$2,753,120.60
HUMANITIES			
Intercultural Studies			
American Council of Learned Societies, Washington, D. C.			
Preparation of a revised edition of *Encyclopedia of Islam* under auspices of the Royal Netherlands Academy of Sciences (RF 52022)	$3,000.00	$.....	$3,000.00
American University of Beirut, Lebanon			
Interpretive studies of the modern Arab Middle East (RF 54004)	164,839.00	.....	48,349.75

Austrian College Society, Vienna			
Institute for Current European Cultural Research. Research program (RF 52188)	13,340.00	.....	13,330.00
Bibliothèque Nationale, Paris, France			
For completion of a union catalogue of the Slavic collections in the libraries of Paris (RF 54077)	15,538.00	.....	5,489.58
Columbia University, New York			
Preparation of a new interpretive history of Japan (RF 54015)	6,000.00	.....	6,000.00
American Press Institute. Advanced study in the United States for leading foreign editors (RF 55099)	.....	94,000.00	10,689.00
Conference on interpretation of Arab tradition, thought, and outlook, to be held in the Near East (RF 51005)	11,748.30	.....	*Cr.* 2,019.56
Cornell University, Ithaca, New York			
Southeast Asian studies (RF 50139)	92,333.31	.....	69,386.81
Study of the contemporary role of the arts in Indonesia (RF 54056)	16,350.00	.....	10,657.31
Study of the cultural and literary history of Thailand (RF 55127)	.....	15,130.00	4,157.00
Deccan College, Poona, India			
Postgraduate and Research Institute. For studies of the principal languages of India (RF 54088)	71,384.60	.....	45,117.56
Egyptian Society for Historical Studies, Cairo, Egypt			
Study of the modernization of the Arab world (RF 55035)	.....	19,500.00	4,612.00
German Association for American Studies, Marburg			
Support of American studies program (RF 55079)	.....	30,000.00	8,458.78
Henry E. Huntington Library and Art Gallery, San Marino, California			
Program of regional studies (RF 50002)	58.68	.....	.....

	APPROPRIATIONS PRIOR YEARS	APPROPRIATIONS 1955	1955 PAYMENTS
HUMANITIES — *continued*			
Intercultural Studies — continued			
International Press Institute, Zurich, Switzerland			
Program of international conferences and exchanges of personnel (RF 55062)	$.....	$100,000.00	$32,500.00
Korean Language Research Society, Seoul			
Publication of its dictionary of the Korean language (RF 52191)	33,000.00	.....	.....
Kyoto University, Japan			
Kyoto University-Doshisha University Committee on American Studies (RF 53129, 54146, 55104) (Joint project with Social Sciences)	16,440.00	46,200.00	14,371.17
Organization and reproduction of materials on the archaeology of Korea (RF 53082)	5,227.30	.....	3,082.15
McGill University, Montreal, Canada			
Expenses of an Institute of Islamic Studies (RF 51108, 55169)	112,001.03	510,000.00	544,482.93
Modern Language Association of America, New York			
Inquiry into role which foreign languages and literatures should play in American life (RF 52116, 54143)	135,500.00	.....	45,500.00
Occidental College, Los Angeles, California			
Developing humanistic studies on the Southwest area of the United States and on Northern Mexico (RF 53021)	30,997.63	.....	10,572.20
Philadelphia Museum of Art, Pennsylvania			
For interpretive studies of the arts of India (RF 54119)	10,000.00	.....	2,500.00

Princeton University, New Jersey Development of Near Eastern studies (RF 52005) (Joint project with Social Sciences)	40,000.00	.....	20,000.00
St. Antony's College, Oxford, England Toward development of a program of European studies (RF 54184)	123,000.00	.....	23,781.41
Salzburg Seminar in American Studies, Inc., Austria General budget (RF 55060)	.....	125,000.00	25,000.00
Sixth Section, Ecole Pratique Des Hautes Etudes, Paris, France Development of Asiatic, Slavic and Islamic studies (RF 55181)	.....	60,000.00	.....
Tokyo University, Japan Seminars in American studies sponsored jointly by Tokyo University and Stanford University (RF 51211) (Joint project with Social Sciences)	67,704.83	.....	34,096.59
Toyo Bunko, Tokyo, Japan For research on modern China (RF 54120)	29,743.77	.....	8,885.67
University of Adelaide, Australia Program in American studies (RF 55147)	.....	24,000.00	.....
University of Ankara, Turkey To enable its Faculty of Letters to appoint a professor of American literature and a professor of American history (RF 53072)	21,000.00	.....	11,529.60
University of British Columbia, Vancouver, Canada Development of a program of Slavic studies (RF 49080, 54135)	5,341.06	.....	5,053.13
University of Cologne, Germany Development of a program of American studies (RF 51037)	606.98	.....	141.24

	APPROPRIATIONS PRIOR YEARS	APPROPRIATIONS 1955	1955 PAYMENTS
HUMANITIES — *continued*			
Intercultural Studies — continued			
University of Delhi, India			
Research and training in modern Indian history (RF 55070)	$.....	$21,000.00	$3,290.72
University of Durham, England			
Study of materials available for an understanding of modern Near Eastern cultures (RF 51176)	1,931.16	.....	.....
University of London, England			
School of Oriental and African Studies. Conference on historical writing on Southern Asia (RF 55071)	.....	23,500.00	16,815.00
University of Michigan, Ann Arbor			
Program of American studies in Kyoto, and Japanese studies in Ann Arbor (RF 54147, 55105)	28,000.00	84,000.00	28,000.00
University of Munich, Germany			
Toward support of the American Institute (RF 54068)	28,086.98	.....	4,793.92
University of Oxford, England			
Research in American history and institutions (RF 53123)	394.25	.....	100.00
University College. Expenses of a conference and fellowships in American studies (RF 55021)	.....	12,500.00	9,900.95
University of Rochester, New York			
Program in Canadian history (RF 55027)	.....	37,500.00	7,500.00
University of Toronto, Canada			
Toward the budget of the department of Slavic studies (RF 54083) (Joint project with Social Sciences)	199.69	.....	.....
University of Washington, Seattle			
Research on Northeast Asia (RF 55168)	.....	250,000.00	250,000.00

History			
American Council of Learned Societies, Washington, D. C.			
Preparation of the supplementary volumes of the *Dictionary of American Biography* (RF 53134)	16,416.66	.....	.....
American University, Washington, D.C.			
Preparation of a history of the city of Washington (RF 54062)	40,833.50	.....	10,015.55
City College, New York			
Development of materials for courses of study at the graduate level (RF 54002)	83,192.00	.....	30,397.36
Colegio de México, Mexico City			
Research and a training seminar on contemporary Mexican history (RF 54028, 55038)	4,196.34	13,880.00	7,289.84
Columbia University, New York			
Toward cost of preparation for publication of the writings of Alexander Hamilton (RF 54097)	40,000.00	.....	20,000.00
Commission on History of the Pan American Institute of Geography and History, Mexico City			
History of the Americas (RF 55039)	.....	13,500.00	6,196.64
Indian Council of World Affairs, Delhi			
Preparation of a history of India's attainment of independence (RF 53069)	25,186.61	.....	11,597.26
Italian Institute of Historical Studies, Naples			
Library materials, fellowships, and general support (RF 55005)	.....	55,000.00	5,500.00
Lehigh University, Bethlehem, Pennsylvania			
Research on the British empire before the American revolution (RF 55033)	.....	21,000.00	7,000.00
McGill University, Montreal, Canada			
Biographical study (RF 53058, 55191)	70,324.64	17,850.00	70,324.64

	APPROPRIATIONS PRIOR YEARS	APPROPRIATIONS 1955	1955 PAYMENTS
HUMANITIES — *continued*			
History — continued			
National Institute of Economic and Social Research, London, England			
Editorial work on edition of complete works of Alexis de Tocqueville (RF 53136)	$11,878.38	$.....	$4,792.06
New School for Social Research, New York			
Continuation of its study of religion in Germany since the end of World War II (RF 53024, 54129)	22,145.00	.....	22,145.00
Royal Institute of International Affairs, London, England			
Travel preliminary to a revision of *A Study of History* (RF 53031)	10,448.07	.....	.....
St. Antony's College, Oxford, England			
Research on the history of the Reformation in Poland and Lithuania (RF 55156)	.....	15,000.00	3,750.00
University of Chicago, Illinois			
Toward support of Lafayette studies (RF 54098)	15,000.00	.....	7,500.00
Committee on Human Development. Study of Kansas City, Missouri (RF 55075)	.....	64,500.00	11,088.50
Philosophy			
American Philosophical Association, Western Division, Gambier, Ohio			
Program of individual grants for original philosophical work (RF 54054)	40,050.00	.....	15,537.98
Exploring the possibilities of original work on political and social philosophy (RF 54055, 55158)	9,275.00	4,500.00	11,525.00

International Christian University, Tokyo, Japan For a program of research and study in the philosophy of education (RF 54091)	66,100.00	.....	11,412.50
Kyushu University, Fukuoka, Japan For comparative studies in the philosophy of education (RF 54090)	55,650.00	.....	8,655.47
Somerville College, Oxford, England Translation and editing of Ludwig Wittgenstein's manuscripts for publication (RF 55111)	.....	8,700.00	.....
University of Chicago, Illinois Work in philosophy (RF 53029)	7,172.26	.....	6,910.02
University of Geneva, Switzerland Research in philosophy, logic, and psychology (RF 55026)	.....	69,120.00	11,203.20
Language, Logic, and Symbolism			
Harvard University, Cambridge, Massachusetts Preparation of a descriptive analysis of the contemporary Russian language (RF 50040, 55031)	5,352.43	30,000.00	14,663.53
University of Michigan, Ann Arbor Cross-disciplinary studies in the theory of language and symbolism (RF 50140)	3,029.16	.....	.....
General Education			
Harvard University, Cambridge, Massachusetts Graduate School of Education. Support of program in history and philosophy (RF 52087)	7,650.00	.....	7,650.00
Haverford College, Pennsylvania Development of reading courses and a senior seminar (RF 53102)	13,703.82	.....	1,826.06

	APPROPRIATIONS PRIOR YEARS	APPROPRIATIONS 1955	1955 PAYMENTS
HUMANITIES — *continued*			
General Education — continued			
Massachusetts Institute of Technology, Cambridge			
Experiment in the use of French as a language of instruction in basic humanities courses (RF 53078)	$6,830.76	$.....	$5,239.23
Support of new major programs in the humanities and social sciences (RF 55051)	.....	300,000.00	300,000.00
University of Wisconsin, Madison			
Evaluation and future planning of its community cultural arts program (RF 53080)	262.67	.....	.....
Literature			
Educational Television and Radio Center, Ann Arbor, Michigan			
Radio presentation of poetry (RF 55159)	.....	8,250.00	8,250.00
Kenyon College, Gambier, Ohio			
Fellowships in creative writing and criticism awarded by editors of *The Kenyon Review* (RF 52119, 55178)	5,000.00	52,200.00	5,000.00
Mexican-American Cultural Institute, Mexico City			
For work of the Mexican Writing Center (RF 54042)	97,000.00	.....	19,000.00
Princeton University, New Jersey			
Support of seminars in criticism (RF 52056)	50,000.00	.....	20,000.00
State University of Iowa, Iowa City			
For fellowships in creative writing (RF 53005)	13,710.00	.....	10,998.02
University of Cambridge, England			
Downing College. Salary of an assistant for director of English studies (RF 51166)	2,939.46	.....	.....

University of the South, Sewanee, Tennessee			
For fellowships in creative writing (RF 53004, 55179)	15,000.00	52,200.00	14,500.00
Drama			
American Shakespeare Festival Theatre and Academy of Connecticut, Stratford			
Costs of building, equipping and initiating the operations of a theatre (RF 54008)	200,000.00	.....	200,000.00
Union Theological Seminary, New York			
Development of an experimental program in religious drama (RF 55186)	.....	55,000.00	.....
University of Bristol, England			
Development of program in drama (RF 49119, 54094)	15,300.08	.....	1,879.80
Virginia Museum of Fine Arts, Richmond			
Development of the Museum's program in drama (RF 55055)	.....	150,000.00	150,000.00
Music			
American Symphony Orchestra League, Inc., Charleston, West Virginia			
Workshops for conductors and music critics, and studies of the organization and support of the arts in American communities (RF 54093)	67,555.00	.....	23,000.00
Training for American and Canadian orchestra conductors (RF 55095)	.....	49,500.00	10,500.00
Boston Symphony Orchestra, Massachusetts			
Tanglewood Revolving Scholarship Fund (RF 55056)	.....	125,000.00	41,226.00
City Center of Music and Drama, Inc., New York			
Creating new productions in opera and ballet (RF 53054)	85,911.78	.....	83,279.34

	APPROPRIATIONS PRIOR YEARS	APPROPRIATIONS 1955	1955 PAYMENTS
HUMANITIES — *continued*			
Music — continued			
Curtis Institute of Music, Philadelphia, Pennsylvania Analysis of the production problems of modern opera (RF 55157)	$.....	$12,000.00	$.....
Karamu House, Cleveland, Ohio Construction and equipping of a music building (RF 54041)	100,000.00	.....	.....
Little Symphony Society of Berkeley, California Administrative and directing expenses (RF 55024)	.....	21,000.00	9,000.00
Louisville Philharmonic Society, Inc., Kentucky Composition, performance and recording of new works by living composers (RF 53041, 55113)	152,350.75	100,000.00	214,850.75
Silliman University, Dumaguete, Philippine Islands Study, recording, arranging, and performance of Philippine music (RF 55136)	.....	13,900.00	3,446.55
Young Audiences, Inc., New York Expansion of its program for organizing concerts by chamber music ensembles (RF 55142)	.....	75,000.00	7,500.00
Visual Arts			
Massachusetts Institute of Technology, Cambridge Study of the aesthetic aspects of city planning (RF 54034)	67,000.00	.....	21,703.68
National Museum of Korea, Seoul For the encouragement of contemporary work in the arts (RF 54118)	10,760.00	.....	.....

Dance			
Connecticut College, New London			
Expenses of its summer School and Festival of the Dance (RF 55023)	.....	33,400.00	13,400.00
Special Projects			
American Council on Education, Washington, D. C.			
Program of training student personnel workers (RF 54148)	19,806.00	.....	19,806.00
Fellowships			
Administered by The Rockefeller Foundation (RF 51223, 52197, 53182, 54162, 55130, 55189)	267,386.10	265,000.00	149,787.40
Grants in Aid			
Allocations by The Rockefeller Foundation (RF 48145, 50089, 50161, 51227, 53138, 53183, 55131, 55190)	536,472.72	420,000.00	298,464.15
Surveys, studies, and conferences (RF 48083)	1,377.62	.....	250.00
Humanities Research Council of Canada, Toronto			
Support of activities in planning and development of Canadian personnel (RF 53088, 55123)	17,966.40	52,500.00	16,503.91
Earlier Interest			
Association of Special Libraries and Information Bureaux, London, England			
Completion of British *Union Catalogue of Periodicals* (RF 44004, 53011)	8,360.59	.....	.....
British Museum, London, England			
To enable the Museum to offer to American libraries, at a discount, subscriptions to the new edition of its Catalogue of Printed Books (RF 29086, 30076)	44,300.47	.....	639.61

	APPROPRIATIONS PRIOR YEARS	APPROPRIATIONS 1955	1955 PAYMENTS
HUMANITIES — *continued*			
Earlier Interest — continued			
Keio University, Tokyo, Japan Support of the Japan Library School (RF 52107)	$31,047.31	$.....	$24,537.50
Museum of Modern Art, New York Toward the cost of the transfer of the most important motion picture films to a more permanent stock (RF 54026)	25,000.00	.....	5,000.00
National Diet Library, Tokyo, Japan Establishment of a microfilm laboratory (RF 52156)	1,425.39	.....	222.58
TOTAL — HUMANITIES	$3,474,133.54	$3,550,330.00	$3,314,090.04
FORMER PROGRAM			
MEDICINE AND PUBLIC HEALTH			
Fellowships and Grants in Aid			
FELLOWSHIPS			
Administered by The Rockefeller Foundation. (RF 52146, 52194, 53182)	$313,325.31	$.....	$226,454.74
Medical Library Association, New Haven, Connecticut Fellowships (RF 54081)	15,350.00	.....	1,800.00
Medical Research Council of Great Britain Fellowships (RF 54003)	122,713.03	.....	24,247.46

National Research Council			
Welch Fellowships (RF 41028)	4,000.53	.....	*Cr.* 517.55
Fellowships (RF 51151, 54035)	159,688.00	.....	57,114.43
GRANTS IN AID			
Allocations by The Rockefeller Foundation. (RF 47089, 47138, 48142, 50090, 51159, 51224, 53106, 53183)	295,746.77	.....	173,951.94
Special Emergency Grant-in-Aid Fund, Netherlands Scientific equipment (RF 45089)	6,382.45	.....	530.00
Field Service Expenses — 1954			
DMPH Field Staff (RF 53163, 54164)	64,081.72	.....	29,375.81
NATURAL SCIENCES AND AGRICULTURE			
Fellowships and Grants in Aid			
FELLOWSHIPS			
Administered by The Rockefeller Foundation (RF 51221, 52195, 53182)	241,283.90	.....	186,272.71
National Research Council Fellowships (RF 51150)	5,705.27	.....	2,037.31
GRANTS IN AID			
Administered by The Rockefeller Foundation. (RF 48143, 49149, 50159, 51225, 52199, 53183)	453,877.84	.....	249,445.38
TOTALS — FORMER PROGRAM	$1,682,154.82	.....	$950,712.23

	APPROPRIATIONS PRIOR YEARS	APPROPRIATIONS 1955	1955 PAYMENTS
GENERAL			
American Library Association, Chicago, Illinois			
Expenses of director of the International Youth Library, Munich, Germany (RF 54019)	$20,000.00	$.....	$10,000.00
Commonwealth Scientific and Industrial Research Organization, Canberra, Australia			
Toward construction of a radio telescope and associated equipment (RF 55171)	.....	250,000.00	.....
Conservation Foundation			
General administrative expenses (RF 55066)	.....	45,000.00	5,000.00
Exchange Fund (RF 46123)	7,465.84	.....	.....
Field Service Expenses — Unallocated Funds (RF 54167)	5,500.00	.....	.....
Free University of Berlin, Germany			
Work in the social sciences and the humanities (RF 50063)	2,430.87	.....	.....
Grants in Aid allocated by The Rockefeller Foundation			
For allocation by the officers within categories described by Trustee action and within specified limitations of amount and duration (RF 53183, 54163, 55131, 55190)	107,250.00	.....	44,235.74
Unallocated—1956	.....	90,000.00	.....
History of the International Health Division			
For completion and publication (RF 52125)	17,144.99	.....	397.22
Institute of International Education, New York			
International student exchange (RF 53059)	50,000.00	.....	50,000.00
Institute of Judicial Administration, Inc., New York			
Toward its expenses (RF 52073)	110,499.78	.....	55,385.19
International House of Japan, Inc., Tokyo			
Toward establishment and support of an international cultural center in Tokyo (RF 52102, 52183)	206,434.26	.....	90,478.21

Mexican-American Cultural Institute, Mexico City			
Toward land and building (RF 55129)	.....	35,000.00	35,000.00
Ministry of Education, Cairo, Egypt			
Expenses of a mission to study university practice and administration in the West (RF 53075)	17,500.00	.....	17,500.00
National Academy of Sciences, Washington, D. C.			
Development of plans for a study of the effects of atomic radiation on living organisms (RF 55153)	.....	15,000.00	.....
New York Community Trust, New York			
Operating expenses (RF 54123)	88,250.00	.....	8,250.00
Temporary Indonesian Training Program			
Temporary program of study and travel grants for Indonesians (RF 54183)	75,000.00	.....	2,230.11
Union Theological Seminary, New York			
Establishment and support of a program of advanced religious studies (RF 54033)	525,000.00	.....	125,000.00
Yale University, New Haven, Connecticut			
Establishment and general support of a Carbon 14 dating laboratory (RF 50132)	169.19	.....	.....
TOTAL — GENERAL	$1,232,644.93	$435,000.00	$443,476.47

ADMINISTRATION

Home Office

1954 (RF 2824, 53158, 54029, 54030, 54139)	$107,877.43	$.....	$57,555.18
1955 (RF 54159, 55045, 55046, 55088, 55152)	1,767,550.00	51,000.00	1,734,018.65
1956 (RF 55161)	.....	1,953,900.00	.....

	APPROPRIATIONS PRIOR YEARS	APPROPRIATIONS 1955	1955 PAYMENTS
ADMINISTRATION — *continued*			
Treasurer's Office			
1954 (RF 53159)	$20,756.16	$.....	$13,835.73
1955 (RF 54160, 55089)	67,657.00	258.00	49,666.76
1956 (RF 55162)	.....	67,930.00	.....
Alterations and renovation of the New York offices (RF 55091, 55112)	.....	105,000.00	22,150.22
Field Offices (RF 53160, 54161, 55132, 55160, 55163, 55164)			
Europe			
England, London			
1954	3,722.17	.....	647.90
1955	9,110.00	.....	6,655.75
1956	.....	9,500.00	.....
France, Paris			
1954	28,895.64	.....	3,830.11
1955	42,135.00	8,000.00	40,950.74
1956	.....	28,000.00	.....
TOTALS — ADMINISTRATION	$2,047,703.40	$2,223,588.00	$1,929,311.04
TOTALS	$27,694,853.86	$19,152,353.00	$16,578,700.52
LESS:			
Unused balances of appropriations allowed to lapse	1,057,697.55	.....	.....
GRAND TOTALS	$26,637,156.31	$19,152,353.00	$16,578,700.52

REFUNDS ON PRIOR YEAR CLOSED APPROPRIATIONS

Allahabad Agricultural Institute, Board of Founders, Inc., India	(RF 54014)	$1,975.81
California Institute of Technology, Pasadena	(RF 52069)	230.24
Columbia University, New York	(RF 52040)	1,190.30
Columbia University, New York	(RF 53009)	6,608.72
Encyclopaedia of the Social Sciences, New York	(RF 32114)	1,675.00
Field Offices		
Bangalore, India — 1952	(RF 52154)	16.04
Canada — 1947	(IH 46057)	300.00
Lima, Peru — 1953	(RF 52172)	113.65
Paris — Building	(RF 21151)	39,915.54
Harvard University, Cambridge, Massachusetts	(RF 52093)	152.89
Health Insurance Plan of Greater New York, New York	(IH 47013)	138,000.00
Health Insurance Plan of Greater New York, New York	(RF 46131)	22,500.00
Library of Congress, Washington, D. C.	(RF 43095)	1,134.94
McGill University, Montreal	(RF 52047)	64.80
Ministry of Health, Public Health Nursing, Norway	(HC 46015)	4,712.73
National Research Council, Washington, D.C.	(RF 49074)	11.79
Netherlands Institute of International Affairs	(RF 47004)	264.14
New York University, New York	(RF 54082)	444.50
Norwegian Ministry of Social Welfare	(HC 46014)	1,602.66
Social Science Research Council, New York	(RF 51054)	395.00
Society of American Foresters, Washington, D.C.	(RF 53003)	534.85
Study to Ascertain Type of Worker Required for Basic Health and Social Welfare Needs Within the Family	(RF 51152)	769.94

REFUNDS ON PRIOR YEAR CLOSED APPROPRIATIONS — *continued*

Tufts College, Medford, Massachusetts	(RF 54018)	20.72
University of Cambridge, England	(RF 53156)	94.24
University of Chicago, Illinois	(RF 53079)	1,076.37
University of Florida, Gainesville	(RF 53035)	445.06
University of Leiden, Netherlands	(RF 53014)	2.71
University of Oklahoma, Norman	(RF 52115)	191.89
University of Sheffield, England	(RF 54050)	49.42
University of Texas, Austin	(RF 51089)	3.34
University of Utrecht, Netherlands	(RF 51132)	191.09
		$224,688.38

FINANCE COMMITTEE'S STATEMENT OF TRANSACTIONS RELATING TO INVESTED FUNDS

FOR THE YEAR ENDED DECEMBER 31, 1955

PURCHASED

$250,000	American Telephone & Telegraph Co. Convertible Debenture 3⅞s, 10/13/67 at par and the surrender of 20,000 rights @ $3.21875 resulting in a ledger price of 125.75	$314,375.00
300,000	Bethlehem Steel Corporation Convertible Debenture 3¼s, 5/1/80 @ 112.98541	338,956.25
	USA Treasury Bonds:	
3,000,000	2½s due 8/15/63 @ 97.36458	2,920,937.50
23,200,000	2½s " 6/15/62-67 @ 98.73895	22,907,437.50
12,000,000	2½s " 12/15/64-69 @ 96.30469	11,556,562.50
3,000,000	2½s " 6/15/67-72 @ 95.510416	2,865,312.50
5,000,000	USA 1½% Treasury Notes due 4/1/60 @ 95.6875	4,784,375.00
2,000,000	USA 2⅞% Treasury Notes due 6/15/58 @ 100.1875	2,003,750.00
15,000	shares Canadian Industries Limited Common (No par) @ $22.256297	333,844.46
2	rights Consolidated Natural Gas Co. @ 25¢ each	.50
26,635	shares Consolidated Natural Gas Co. Capital (Par $10) @ $31 plus the surrender of 266,350 rights	825,685.50
7,017	" Consolidated Natural Gas Co. Capital (Par $10) @ $34.3029	240,703.45
20,000	" Freeport Sulphur Co. Common (Par $10) @ $80	1,600,000.00
62½	" Hartford Fire Insurance Co. Capital (Par $10) @ $169.488	10,593.00
10,000	" Inland Steel Co. Common (No par) @ $74.950783	749,507.83
700	" Peoples Gas Light & Coke Co. Common (Par $100) @ $140 plus the surrender of 7,000 rights	98,000.00
10,000	" Union Carbide & Carbon Corporation Capital (No par) @ $91.55366	915,536.60
10,000	" United States Steel Corporation Common (No par) @ $82.22932	822,293.22
		$53,287,870.81

FINANCE COMMITTEE'S STATEMENT OF TRANSACTIONS RELATING TO INVESTED FUNDS — *continued*

OTHERWISE ACQUIRED

$4,400,000	USA 2% Treasury Notes due 8/15/57 in exchange for $4,400,000 USA 1½% Treasury Notes due 3/15/55	$4,366,750.00
20,000	rights American Telephone & Telegraph Co. received on 20,000 shares of stock (Par $100). Taken into the books at the opening price 9/9/55 @ $3.21875	64,375.00
266,348	rights Consolidated Natural Gas Co. received on 266,348 shares of stock (Par $10)	—0—
7,500	shares Corning Glass Works Common (Par $5) received in a stock split on 5,000 shares of stock held of record 1/21/55	—0—
7,500	" Crown Zellerbach Corporation Common (Par $5) received in a stock split on 15,000 shares of stock held of record 8/19/55	—0—
400	" Dow Chemical Co. Common (Par $5) received as a dividend on 20,000 shares of stock held of record 8/25/55	—0—
25,000	" B. F. Goodrich Co. Common (Par $10) received in a stock split on 25,000 shares of stock held of record 12/14/54	—0—
4,687½	" Hartford Fire Insurance Co. Capital (Par $10) received as a dividend on 18,750 shares of stock held of record 3/25/55	—0—
3,150	" International Paper Co. Common (Par $7.50) received as a dividend on 63,000 shares of stock held of record 11/21/55	—0—
20,000	" Monsanto Chemical Co. Common (Par $2) received in a stock split on 10,000 shares of stock (Par $5) held of record 7/11/55, par of which was changed to $2	—0—
600	" Monsanto Chemical Co. Common (Par $2) received as a dividend on 30,000 shares of stock held of record 11/25/55	—0—
100,000	" The Ohio Oil Co. (No par) received in a stock split on 100,000 shares of stock held of record 5/16/55	—0—
7,000	rights Peoples Gas Light & Coke Co. received on 7,000 shares of stock (Par $100) held of record 6/2/55	—0—

4,000	shares	Standard Oil Co. of California Capital (No par) received as a dividend on 80,000 shares of stock held of record 11/7/55	—0—
6,666	"	Standard Oil Co. (New Jersey) Capital (Par $15) received as a dividend on 1,000,000 shares Standard Oil Co. (Indiana) Capital (Par $25). Taken into the books at $148.625, which was the value reported by the Standard Oil Co. (Indiana) in a notice dated 11/15/55 and credited to income. (Cash in the amount of $99.10 was received in lieu of the 2/3 fractional share and was also credited to income.)	$990,734.25
19,000	"	Travelers Insurance Co. Capital (Par $5) received in a stock split on 1,000 shares of stock (Par $100) held of record 7/15/55, par of which was changed to $5	—0—
5,000	"	Travelers Insurance Co. Capital (Par $5) received as a dividend on 20,000 shares of stock held of record 7/15/55	—0—
10,000	"	United States Steel Corporation (Par $16-2/3) received in a stock split on 10,000 shares of no par stock held of record 5/12/55, par of which was changed to $16-2/3	—0—
90,000	"	Weyerhaeuser Timber Co. Capital (Par $7.50) received in a stock split on 30,000 shares of stock held of record 12/30/1955, par of which was changed to $7.50	—0—
			$5,421,859.25

INTEREST INCREMENT ON USA SAVINGS BONDS SERIES F (12 year appreciation bonds)

$135,000	(Maturity value) due 1/1/55	$2,700.00
		$58,712,430.06

SOLD OR REDEEMED		PROCEEDS	LEDGER VALUE
$5,450,000	Standard Oil Co. (Indiana) Convertible Debenture 3⅛s, 10/1/82 @ 119.81468	$6,529,900.00	$5,768,484.37
6,666	shares Standard Oil Co. (New Jersey) Capital (Par $15) @ 148.6479	990,887.20	990,734.25

FINANCE COMMITTEE'S STATEMENT OF TRANSACTIONS RELATING TO INVESTED FUNDS—*concluded*

		PROCEEDS	LEDGER VALUE
SOLD OR REDEEMED — *continued*			
	USA Treasury Bonds:		
7,000,000	2¼s due 6/15/59-62 @98.875	6,921,250.00	7,000,000.00
6,200,000	2¼s " 12/15/59-62 @98.875	6,130,250.00	6,213,096.18
12,000,000	2½s " 6/15/62-67 @ 97.30469	11,676,562.50	11,848,674.56
10,000,000	USA 1⅞s Treasury Notes 2/15/59 @98.578125	9,857,812.50	10,025,818.66
135,000	USA Savings Bonds Series F (12 year appreciation bonds) 1/1/55 @par	135,000.00	135,000.00
16,500	shares Du Pont of Canada Securities Limited Common (No par) @$27.32294	450,828.56	318,417.66
200,000	shares Standard Oil Co. (Indiana) Capital (Par $25) @$44.5427	8,908,539.70	2,836,943.55
		$51,601,030.46	$45,137,169.23
OTHERWISE DISPOSED OF			
20,000	rights American Telephone & Telegraph Co. surrendered upon subscription to $250,000 American Telephone & Telegraph Co. Convertible Debenture 3⅞s, 10/13/67	$64,375.00	$64,375.00
2	rights Consolidated Natural Gas Co. acquired by purchase at 25 cents each, surrendered together with 266,348 rights received on the shares held, upon subscription to 26,635 shares of stock (Par $10)	.50	.50
$4,400,000	USA 1½% Treasury Notes due 3/15/55 given in exchange for $4,400,000 USA 2% Treasury Notes due 8/15/57	4,366,750.00	4,366,750.00
		$4,431,125.50	$4,431,125.50
LEDGER VALUE REDUCED			
20,000	shares American Telephone & Telegraph Co. Capital (Par $100) by the value of 20,000 rights	$64,375.00	$64,375.00
		$56,096,530.96	*$49,632,669.73*

AMORTIZATION OF PREMIUM PAID ON PURCHASE OF SECURITIES

$300,000	Bethlehem Steel Corporation Conv. Deb. 3¼s, 5/1/80	$504.97
	USA Treasury Bonds:	
6,200,000	2¼s due 12/15/59-62	347.16
9,000,000	2½s " 11/15/61	871.98
8,000,000	2½s " 8/15/63	1,632.56
6,000,000	2½s " 6/15/67-72	1,573.52
18,000,000	USA 1⅞s Treasury Notes 2/15/59	9,960.59
		$14,890.78

RECONCILIATION

Ledger value of securities, December 31, 1954		$187,459,726.15
Purchased	$53,287,870.81	
Otherwise acquired	5,421,859.25	
Interest increment	2,700.00	58,712,430.06
		$246,172,156.21
Sold	$45,137,169.23	
Otherwise disposed of	4,431,125.50	
Ledger value reduced	64,375.00	
Amortization	14,890.78	49,647,560.51
Ledger value of securities, December 31, 1955		$196,524,595.70

SCHEDULE OF SECURITIES ON DECEMBER 31, 1955

BONDS	PAR	LEDGER VALUE PRICE	LEDGER VALUE TOTAL	MARKET VALUE PRICE	MARKET VALUE TOTAL
American Telephone & Telegraph Co. Conv. Deb. 3⅞% October 13, 1967	$250,000	125.75	$314,375.00	132.125	$330,312.50
Bethlehem Steel Corporation Conv. Deb. 3¼%, May 1, 1980	300,000	112.817	338,451.28	127.875	383,625.00
International Bank for Reconstruction and Development 3½%, October 15, 1971	1,000,000	98.00	980,000.00	101.375	1,013,750.00
United States of America Treasury Bonds:					
INT. DUE					
2⅜% — June 15, 1958	5,000,000	100.00	5,000,000.00	98.875	4,943,750.00
2½% — Dec. 15, 1958	1,000,000	100.00	1,000,000.00	99.0625	990,625.00
2¼% — Sept. 15, 1956-59	11,000,000	99.330	10,926,250.00	97.875	10,766,250.00
2¾% — Sept. 15, 1961	1,920,000	100.00	1,920,000.00	99.3125	1,906,800.00
2½% — Nov. 15, 1961	9,000,000	100.058	9,005,231.88	97.625	8,786,250.00
2½% — Aug. 15, 1963	11,000,000	99.460	10,940,554.94	97.09375	10,680,312.50
2½% — June 15, 1962-67	11,200,000	98.739	11,058,762.94	96.625	10,822,000.00
2½% — Dec. 15, 1964-69	12,000,000	96.305	11,556,562.50	95.28125	11,433,750.00
2½% — June 15, 1967-72	9,000,000	98.941	8,904,650.50	95.09375	8,558,437.50
United States of America 2% Treasury Notes due August 15, 1957	4,400,000	99.244	4,366,750.00	98.8125	4,347,750.00
United States of America 2⅞% Treasury Notes Series "A" due June 15, 1958	2,000,000	100.188	2,003,750.00	100.125	2,002,500.00
United States of America 1⅞% Treasury Notes due February 15, 1959	8,000,000	100.225	8,017,970.75	97.125	7,770,000.00
United States of America 1½% Treasury Notes due April 1, 1960	5,000,000	95.688	4,784,375.00	95.25	4,762,500.00
United States of America 2½% Savings Bonds Series "G" due October 1, 1962	1,000,000	100.00	1,000,000.00	94.90	949,000.00
			$92,117,684.79		$90,447,612.50

STOCKS	SHARES	LEDGER VALUE PRICE	LEDGER VALUE TOTAL	MARKET VALUE PRICE	MARKET VALUE TOTAL
American Gas & Electric Co. (Par. $5)	40,000	$26.877	$1,075,084.95	$49.50	$1,980,000.00
American Telephone & Telegraph Co. Cap. (Par $100)	20,000	134.065	2,681,293.24	180.375	3,607,500.00
Canadian Industries Limited (No par)	45,000	22.071	993,199.32	21.75	978,750.00
Christiana Securities Co. (Par $100)	200	5,568.00	1,113,600.00	15,800.00	3,160,000.00
Consolidated Natural Gas Co. Cap. (Par $10)	300,000	16.189	4,856,806.82	35.375	10,612,500.00
Continental Insurance Co. Cap. (Par $10)	10,000	65.597	655,965.37	105.00	1,050,000.00
Continental Oil Co. Cap. (Par $5)	150,000	14.46	2,169,117.65	100.00	15,000,000.00
Corning Glass Works (Par $5)	12,500	35.593	444,917.79	68.75	859,375.00
Crown Zellerbach Corporation (Par $5)	22,500	26.274	591,167.64	59.25	1,333,125.00
Dow Chemical Co. (Par $5)	20,400	23.476	478,909.80	60.50	1,234,200.00
Fireman's Fund Insurance Co. Cap. (Par $2.50)	24,000	52.304	1,255,304.56	66.00	1,584,000.00
First National Bank of Chicago (Par $100)	6,700	174.611	1,169,895.85	305.00	2,043,500.00
Freeport Sulphur Co. (Par $10)	30,000	74.396	2,231,877.90	91.25	2,737,500.00
General Electric Co. (Par $5)	60,000	19.674	1,180,424.14	57.75	3,465,000.00
Goodrich, B. F. Co. (Par $10)	50,000	36.798	1,839,893.41	86.75	4,337,500.00
Hartford Fire Insurance Co. Cap. (Par $10)	23,500	83.478	1,961,724.15	160.00	3,760,000.00
Inland Steel Co. (No par)	10,000	74.95	749,507.83	84.75	847,500.00
International Business Machines Corporation (No par)	1,900	278.441	529,038.71	403.00	765,700.00

SCHEDULE OF SECURITIES — *concluded*

STOCKS	SHARES	LEDGER VALUE PRICE	LEDGER VALUE TOTAL	MARKET VALUE PRICE	MARKET VALUE TOTAL
International Nickle Co. of Canada Ltd. (No par)	55,000	$41.636	$2,289,969.82	$82.375	$4,530,625.00
International Paper Co. (Par $7.50)	66,150	35.787	2,367,288.41	113.75	7,524,562.50
Kennecott Copper Corporation (No par)	30,000	58.539	1,756,180.37	117.625	3,528,750.00
Monsanto Chemical Co. (Par $2)	30,600	25.206	771,318.65	47.00	1,438,200.00
National Lead Co. (Par $5)	15,000	49.787	746,805.13	84.375	1,265,625.00
The Ohio Oil Co. (No par)	200,000	17.292	3,458,394.00	34.75	6,950,000.00
Peoples Gas Light & Coke Co. (Par $100)	7,700	122.412	942,573.46	151.00	1,162,700.00
Phelps Dodge Corporation Cap. (Par $12.50)	70,000	26.358	1,845,087.74	58.125	4,068,750.00
Socony Mobil Oil Co. Inc. Cap. (Par $15)	300,000	33.015	9,904,514.61	64.50	19,350,000.00
Standard Oil Co. of California Cap. (No par)	84,000	7.595	637,991.30	91.00	7,644,000.00
Standard Oil Co. (Indiana) Cap. (Par $25)	1,000,000	14.185	14,184,717.71	51.00	51,000,000.00
Standard Oil Co. (New Jersey) Cap. (Par $15)	2,000,000	15.378	30,756,473.47	152.625	305,250,000.00
Travelers Insurance Co. Cap. (Par $5)	25,000	34.255	856,385.00	84.00	2,100,000.00
Union Carbide & Carbon Corporation (No par)	20,000	85.790	1,715,807.93	110.125	2,202,500.00
Union Pacific R. R. Co. (Par $50)	10,000	107.565	1,075,659.68	179.50	1,795,000.00
Union Tank Car Co. Cap. (No par)	100,000	3.346	334,601.66	31.00	3,100,000.00
United Fruit Co. Cap. (No par)	20,000	56.699	1,133,989.79	53.00	1,060,000.00

United States Steel Corporation (Par $16-2/3)	20,000	41.115	822,293.22	58.00	1,160,000.00
Westinghouse Electric Corporation (Par $12.50)	20,000	61.227	1,224,541.52	60.00	1,200,000.00
Weyerhaeuser Timber Co. Cap. (Par $7.50)	120,000	13.3716	1,604,588.31	42.00	5,040,000.00
			$104,406,910.91		$490,726,862.50

SUMMARY

	LEDGER VALUE	MARKET VALUE
Bonds	$92,117,684.79	$90,447,612.50
Stocks	104,406,910.91	490,726,862.50
	$196,524,595.70	$581,174,475.00

GEOGRAPHICAL DISTRIBUTION OF GRANTS, 1955

	Amount $	*page*
UNIVERSITY OF CALIFORNIA		
Berkeley:		
Algae: research	60,000	120
Extension Division: medical care administration; support	6,000	41
Newsletter on current South Asian studies in the U. S.	500	168
Plant physiology: N. T. Mirov; research	7,300	102
Political science:		
L. Lipson; study	4,175	148
Y. Rogat; study	800	148
N. N. Wood; study	3,800	148
Virus Laboratory: R. C. Williams; travel	4,500	84
Davis:		
Agriculture:		
R. M. Hagan; travel	1,000	102
C. M. Rick; travel	3,500	102
Los Angeles:		
Department of Theatre Arts: appointment of playwrights	6,000	182
White Mountain:		
White Mountain Research Station: support	15,000	50
UNIVERSITY OF SOUTHERN CALIFORNIA		
History: T. W. Wallbank; study	2,500	167
Political science: R. N. Berkes; study	5,000	147
VIRUS STUDIES	25,000	73
COLORADO		
UNIVERSITY OF COLORADO		
Biology: R. W. Pennak; travel	500	57
CONNECTICUT		
CONNECTICUT COLLEGE		
Summer School and Festival of the Dance: support	33,400	180
WESLEYAN UNIVERSITY		
Foreign policy formation: S. Neumann; research	5,000	147
YALE UNIVERSITY		
Near Eastern literature: J. Palmer; travel	3,125	165
Pollen analysis: research	5,000	56
Political science:		
A. Wolfers; research	7,500	146
C. Yanaga; travel	8,000	165
Psychology: F. A. Beach; travel	1,000	85
DISTRICT OF COLUMBIA		
AMERICAN HISTORICAL ASSOCIATION		
German war documents: meeting; expenses	1,500	148

	Amount $	page
AMERICAN SOCIETY OF INTERNATIONAL LAW		
International Investment Law Conference: support	2,000	137
GEORGETOWN UNIVERSITY		
Language and communication: E. S. Glenn; research	6,000	166
NATIONAL ACADEMY OF SCIENCES		
Symposium on Cytodifferentiation: expenses of foreign delegates	6,000	51
Effects of Atomic Radiation: study	25,000	190
PAN AMERICAN SANITARY BUREAU		
Institute of Nutrition of Central America and Panama: food crops; research	10,000	102
SOCIAL SCIENCE RESEARCH COUNCIL		
Fellowship program: support	485,000	129
UNITED STATES COMMITTEE FOR THE UNITED NATIONS		
Program of information and education: support	10,000	191
FLORIDA		
UNIVERSITY OF FLORIDA		
Library development: travel	2,500	167
Soil science: H. Popenoe; travel and research	2,500	103
YERKES LABORATORIES OF PRIMATE BIOLOGY		
General budget support	50,000	46
GEORGIA		
ATLANTA UNIVERSITY		
Religion in history: R. Coulborn; study	8,250	171
HAWAII		
UNIVERSITY OF HAWAII		
Music: B. B. Smith; travel and research	6,000	182
ILLINOIS		
NORTHWESTERN UNIVERSITY		
Hindu values and way of life: F. L. K. Hsu; study	6,900	137
THE ART INSTITUTE OF CHICAGO		
Public school program for contemporary art: support	3,000	182
THE MODERN POETRY ASSOCIATION		
Special issue of *Poetry Magazine:* S. Sato; preparation	1,150	183

	Amount $	*page*
UNIVERSITY OF CHICAGO		
American Historiography: S. Elkins and E. McKitrick; research	6,500	172
Integration of Negroes in medicine: study	38,100	27
Jurisprudence: Law Review staff; studies	1,400	148
Kansas City, Missouri: study of development	64,500	169
Marital adjustment: E. W. Burgess; study	8,500	130
Obstetrics and gynecology: E. L. Potter; travel	2,500	31
Philippine Studies Program: field research	20,000	136
Philosophy: S. Ohe; travel	3,000	172
UNIVERSITY OF ILLINOIS		
Meeting of agricultural economists	10,000	102
INDIANA		
PURDUE UNIVERSITY		
Agricultural economics: N. B. Tablante; study	1,000	138
Genetics: research	22,500	99
UNIVERSITY OF NOTRE DAME		
International relations: research	100,000	140
IOWA		
IOWA STATE COLLEGE		
Agronomy: G. F. Sprague; travel	1,300	104
NATIONAL CATHOLIC RURAL LIFE CONFERENCE		
Expenses of conference discussion leaders	2,900	123
KENTUCKY		
LOUISVILLE PHILHARMONIC SOCIETY, INC.		
Commissioning of contemporary music: support	100,000	177
UNIVERSITY OF KENTUCKY		
Nutrition of plant-feeding mites: research	10,000	102
UNIVERSITY OF LOUISVILLE		
Higher education in Germany: J. J. Oppenheimer; travel	1,750	186
LOUISIANA		
LOUISIANA STATE UNIVERSITY		
Rice Research Center: support	140,000	88
MAINE		
ROSCOE B. JACKSON MEMORIAL LABORATORY		
Decennial Tissue Culture Conference: expenses of foreign scientists	5,000	51

	Amount $	*page*
MARYLAND		
JOHNS HOPKINS UNIVERSITY		
Protein biochemistry: E. V. McCollum; research	5,000	65
School of Advanced International Studies:		
J. P. Armstrong and E. Lefever; research	4,000	145
Ethics and foreign policy; E. Lefever; research	5,000	145
Far Eastern history; V. W. W. S. Purcell; visiting professorship	2,000	145
Nationalism and Progress in South and Southeast Asia; conference	6,050	145
U. S. foreign policy; J. P. Armstrong; study	9,400	145
School of Hygiene and Public Health:		
Exchange program with the University of the Philippines	12,000	39
Virus diseases; research	150,000	71
UNITED STATES DEPARTMENT OF AGRICULTURE		
W. J. Zaumeyer: travel	1,150	104
UNIVERSITY OF MARYLAND		
Algae: research	33,000	120
MASSACHUSETTS		
BOSTON SYMPHONY ORCHESTRA		
Tanglewood Revolving Scholarship Fund: support	125,000	176
FLETCHER SCHOOL OF LAW AND DIPLOMACY		
Sir Mark Sykes Papers: J. Harbaugh; study	1,600	173
HARVARD UNIVERSITY		
Center for Middle Eastern Studies: H. A. Rivlin; appointment	4,500	166
Contemporary Russian language: analysis	30,000	162
Eastern European studies: R. L. Wolff; travel	7,500	172
Economics: research	240,000	128
Laboratory of Social Relations: research training	10,000	130
Law School:		
H. L. A. Hart; visiting professorship	6,000	147
K. D. Joe; study	2,400	147
Jurisprudence; Law Review staff; studies	1,400	147
Philosophy:		
R. Das; travel	4,500	166
P. Ziff; book preparation	1,500	172
Sanitary engineering: H. A. Thomas, Jr.; travel	5,500	39
University admission policies: W. J. Bender; travel	2,400	191
Water Resources Seminar: preparatory study	10,000	122
MASSACHUSETTS INSTITUTE OF TECHNOLOGY		
Dual major program: support	300,000	183
Economic development: study	150,000	135
Mechanical translation: journal; support	3,000	85
X-ray crystallography: research	4,000	70

	Amount $	*page*
MASSACHUSETTS MEDICAL SOCIETY		
Postgraduate Medical Institute: support	7,500	30
SMITH COLLEGE		
Genetics: research	4,200	56
THE POETS' THEATRE, INC.		
Support	10,000	181
MICHIGAN		
EDUCATIONAL TELEVISION AND RADIO CENTER		
Poetry broadcasting: L. Hill; experimentation	8,250	181
UNIVERSITY OF MICHIGAN		
American studies in Japan: support	84,000	158
International Center: J. M. Davis; travel	4,500	191
Jurisprudence: W. B. Harvey; travel and research	10,000	145
Medical School: exchange of faculty with University of Antioquia	8,500	29
Population studies: research	3,600	51
Survey Research Center: voting behavior; study	110,000	126
MINNESOTA		
UNIVERSITY OF MINNESOTA		
Agriculture: J. W. Lambert; travel	3,050	103
Development of concept of total war: J. Bowditch; study	3,000	148
Physiology: N. Lifson; travel and research	2,000	65
MISSOURI		
UNIVERSITY OF MISSOURI		
Rural Church as a Social Institution: study	4,245	147
NEBRASKA		
UNIVERSITY OF NEBRASKA		
Agronomy: J. H. Lonnquist; travel	3,050	103
NEW HAMPSHIRE		
DARTMOUTH COLLEGE		
Cellular biology: research	50,000	48
Summer Research Project on Artificial Intelligence: support	7,500	70
NEW JERSEY		
BOY SCOUTS OF AMERICA		
Conservation program: support	50,000	122

	Amount $	page
PRINCETON UNIVERSITY		
Muslem Brotherhood: R. P. Mitchell; study	3,200	166
Office of Population Research: support	500,000	127
Philosophy: W. Kaufmann; study	1,000	173
Théories et Réalités en Droit International Public: P. E. Corbett; translation and publication	4,000	148
NEW YORK		
AMERICAN-KOREAN FOUNDATION		
Health Consultant: expenses	10,000	39
AMERICAN MUSIC CENTER, INC.		
Music collections for Turkish conservatories	850	183
AMERICAN NATIONAL THEATRE AND ACADEMY		
Arena theatres: E. Mangum; book preparation	4,364	182
DR. L. BAUMGARTNER AND DR. N. ELIAS		
Public health organization in India: travel	6,500	191
COLGATE UNIVERSITY		
Role of humanities in general education program: study	10,000	185
COLUMBIA UNIVERSITY		
Adaptation of Chinese drama: W. Chou; support	9,000	181
American Press Institute: seminars for foreign editors; support	94,000	161
Barnard College: Electronic Music; O. Luening and V. Ussachevsky; research	9,955	181
British-Soviet-American relations: H. Feis; study	10,000	145
Comparative linguistics: U. Weinreich; travel and research	6,385	165
East Asian Institute: support	95,000	131
Enzyme research program: support	35,000	63
Higher education: L. M. Hacker; travel	1,500	191
Immunochemistry: M. Heidelberger; travel	1,900	32
International law: research and teaching	24,000	142
International Neurochemical Symposium: expenses of American participants	10,000	65
International politics seminar: support	9,500	145
Jurisprudence: Law Review staff; studies	500	145
Modern Chinese culture: research materials	2,500	166
Origins of modern political theory: R. D. Cumming; research	5,850	145
Potential audience for the arts in New York: study	4,000	181
Problems of linguistic policies: study	8,000	165
Public health: R. E. Trussell; travel	1,500	40
Thomistic legal and political thought: D. Bigongiari; study	5,400	145
THE CONSERVATION FOUNDATION		
General support	45,000	188
CORNELL UNIVERSITY		
Department of Pathology: research	95,000	25
History of Thailand: W. J. Gedney; study	15,130	165

	Amount $	*page*
COUNCIL ON FOREIGN RELATIONS, INC.		
International relations: research and general support	500,000	138
DANCE NOTATION BUREAU		
Labanotation: A. Hutchinson; book preparation	10,000	181
FAR EASTERN ASSOCIATION		
South Asian studies: expenses of meetings	2,000	167
FOREIGN POLICY ASSOCIATION		
Recruitment for foreign service: H. M. Wriston; discussion program	4,000	148
HASKINS LABORATORIES		
Microbiology: research	60,000	59
LONG ISLAND BIOLOGICAL ASSOCIATION		
Symposium on Quantitative Biology: expenses of foreign scientists	3,500	56
Virus research program: development	5,000	84
NEW YORK UNIVERSITY		
Dutch literature: S. L. Flaxman; purchase of books	500	172
Foreign student orientation program: S. W. Cook; study	15,000	133
Biography of J. M. Synge: D. H. Greene	6,000	172
Legal problems of the Welfare State: R. B. Looper; travel and research	4,500	147
POLYTECHNIC INSTITUTE OF BROOKLYN		
Protein structure: research	65,000	66
PUBLIC HEALTH RESEARCH INSTITUTE OF THE CITY OF NEW YORK		
Susceptibility to tuberculosis: research	5,000	39
ROCKEFELLER INSTITUTE FOR MEDICAL RESEARCH		
Electron microscopy: K. Porter; travel	1,400	71
Plant pathology: K. Maramorosch; travel	800	104
SARAH LAWRENCE COLLEGE		
Post-college experience of students: study	10,000	190
UNION THEOLOGICAL SEMINARY		
Religious drama program: development	55,000	175
UNION UNIVERSITY		
Albany Medical College: Postgraduate Education Program; equipment	4,000	30
UNIVERSITY OF ROCHESTER		
Canadian studies program: support	37,500	163
High-altitude physiology: H. Rahn; travel	2,400	31

	Amount $	page
VASSAR COLLEGE		
Ceylonese foreign policy: W. H. Wriggins; study	14,800	145
VIRUS STUDIES	220,000	73
YESHIVA UNIVERSITY		
Medical education: A. A. Angrist; travel	525	33
YOUNG AUDIENCES, INC.		
General support	75,000	178
NORTH CAROLINA		
UNIVERSITY OF NORTH CAROLINA		
Division of Health Affairs: medical practice; study	80,600	41
Institute of Statistics:		
G. M. Cox; travel	1,200	123
G. W. Snedecor; travel	3,100	123
Regional Planning and Development: G. W. Blackwell; travel	700	138
OHIO		
AMERICAN PHILOSOPHICAL ASSOCIATION, WESTERN DIVISION		
Political and social philosophy: studies	4,500	172
JOHN CARROLL UNIVERSITY		
College enrollments: study	7,500	191
KENYON COLLEGE		
Fellowships in creative writing	52,200	173
OBERLIN COLLEGE		
International relations: R. W. Tufts; study	9,000	146
OHIO STATE UNIVERSITY		
Department of Agricultural Biochemistry: seed germination; research	25,000	99
Political science: D. Spitz; research	6,830	146
PENNSYLVANIA		
AMERICAN STUDIES ASSOCIATION		
Conference on the "Fugitive" Poets: expenses	4,950	182
BRYN MAWR COLLEGE		
Modern Japanese painting: E. D. Psaty; study	3,500	182
Political science: F. Gilbert; travel and research	5,400	147
CURTIS INSTITUTE OF MUSIC		
Production problems of modern opera: H. Graf; study	12,000	181

	Amount $	*page*
LEHIGH UNIVERSITY		
History: L. H. Gipson; research and writing	21,000	171
PENNSYLVANIA STATE UNIVERSITY		
Soviet foreign policy: V. V. Aspaturian; research	7,295	146
UNIVERSITY OF PENNSYLVANIA		
European criminal law: L. B. Schwartz; research	2,400	147
British concept of the judicial function: P. J. Mishkin; study	5,100	147
RHODE ISLAND		
BROWN UNIVERSITY		
Linguistics: W. F. Twaddell; travel	2,500	173
TENNESSEE		
UNIVERSITY OF THE SOUTH		
Fellowships in creative writing	52,200	173
James Harrington Papers: G. F. Gilchrist; research	2,230	148
Literature: M. K. Spears; travel	10,000	165
TEXAS		
UNIVERSITY OF TEXAS		
Algae: research	30,000	121
Southwestern Medical School: television microscopy; research and development	10,000	70
UTAH		
UNIVERSITY OF UTAH		
Jurisprudence: E. Bodenheimer; research and writing	6,900	146
VIRGINIA		
UNIVERSITY OF VIRGINIA		
U. S. foreign policy: L. J. Halle, Jr.; research	9,000	146
VIRGINIA MUSEUM OF FINE ARTS		
Community drama program: development	150,000	175
WASHINGTON		
UNIVERSITY OF WASHINGTON		
Japanese literature and drama: R. N. McKinnon; travel	3,350	166
Northeast Asian studies: support	250,000	157
Soviet-Muslem relations: I. Spector; travel and research	2,000	166

	Amount $	page
WEST VIRGINIA		
AMERICAN SYMPHONY ORCHESTRA LEAGUE, INC.		
Organization of information on orchestral groups	7,300	181
Organization of symphony orchestras: preparation of model patterns	6,082	181
Training program for conductors: support	49,500	178
WISCONSIN		
LAWRENCE COLLEGE		
Federalism: W. H. Riker; study	5,500	147
Phenomenology: H. Spiegelberg; completion of book	2,600	172
UNIVERSITY OF WISCONSIN		
Economic development of Japanese agriculture: M. Kaihara; research and writing	2,300	137
Law:		
Law Review staff; research	700	146
J. Mayda; research	2,500	146
Seminar on the Law of Land Use Control; support	7,740	146
Plant pathology: research	48,000	96
Solar energy: research	250,000	118
Symposium on Latency and Masking in Viral and Rickettsial Infections: support	4,500	84
Talent loss in the U. S.: W. H. Sewell; exploratory study	8,500	146
Tax administration in Wisconsin: study	36,000	144
University of Wisconsin Press: T. Webb, Jr.; research	2,200	185
NORTH AMERICA		
CANADA		
CONFERENCE TO PROMOTE STUDY OF PAKISTAN IN THE UNITED STATES AND CANADA	525	168
DEPARTMENT OF NATIONAL HEALTH AND WELFARE, OTTAWA		
Medical care: C. A. Roberts; travel	600	40
HUMANITIES RESEARCH COUNCIL OF CANADA, TORONTO		
Fellowships and general support	52,500	184
MCGILL UNIVERSITY, MONTREAL		
Conferences on studies of Pakistan	2,500	167
Institute of Islamic Studies: support	510,000	156
Biographical studies of W. L. Mackenzie King	17,850	171
Religion in Canadian history: H. H. Walsh; study	2,900	171
QUEEN'S UNIVERSITY, KINGSTON		
Conference on the Canadian Writer: expenses	7,875	181
MEXICO		
AGRICULTURAL OPERATING PROGRAM	301,300	106

	Amount $	*page*
COLEGIO DE MEXICO, MEXICO CITY		
Contemporary Mexican history: research and seminar	13,880	171
INTERNATIONAL WHEAT RUST CONFERENCE: expenses	10,000	101
MEXICAN-AMERICAN CULTURAL INSTITUTE, MEXICO CITY		
Establishment of permanent headquarters	35,000	189
NATIONAL UNIVERSITY OF MEXICO, MEXICO CITY		
Institute of Chemistry:		
Chemistry of natural products; research equipment	30,000	62
O. H. Wheeler; research	5,000	65
PAN AMERICAN INSTITUTE OF GEOGRAPHY AND HISTORY, MEXICO CITY		
Commission on History: research	13,500	171
SCHOOL OF AGRICULTURE, CIUDAD JUAREZ		
Supplies and equipment	10,000	101
TECHNICAL INSTITUTE AND SCHOOL OF ADVANCED STUDIES OF MONTERREY		
Agriculture: V. Bravo A. and L. Robles G.; travel	1,400	104
UNIVERSITY OF CHIHUAHUA		
Medical school administration: J. Ornelas K.; travel	1,900	32
UNIVERSITY OF GUANAJUATO		
Medical school administration: J. A. Guedea L.; travel	1,800	32
CENTRAL AND SOUTH AMERICA		
LATIN AMERICAN SCHOLARSHIPS TO ROCKEFELLER FOUNDATION AGRICULTURAL OPERATING ACTIVITIES	35,000	117
BRAZIL		
AGRONOMY INSTITUTE OF THE SOUTH, PELOTAS		
Cereal improvement: research	60,000	91
BRAZILIAN NURSING ASSOCIATION, RIO DE JANEIRO		
H. G. Dourado: travel	2,525	35
Study of nursing needs and resources in Brazil: support	10,000	35
CAMPAIGN FOR THE IMPROVEMENT OF HIGHER EDUCATION PERSONNEL, RIO DE JANEIRO		
Training of medical school teachers: support	124,000	23
GAMMON INSTITUTE, LAVRAS		
College of Agriculture: support	60,000	91
INSTITUTE OF AGRONOMY, CAMPINAS		
Plant virus research: equipment	30,000	97

	Amount $	*page*
RURAL UNIVERSITY OF THE STATE OF MINAS GERAIS, VIÇOSA		
School of Veterinary Medicine: equipment	50,000	93
SANTA CASA DE MISERICORDIA, RIO DE JANEIRO		
Graduate medical training program: development	57,120	27
Orthopedic surgery: D. P. de Campos; travel	1,000	33
UNIVERSITY OF BAHIA, SÃO SALVADOR		
Department of Pathology: equipment and supplies	9,130	29
UNIVERSITY OF BRAZIL, RIO DE JANEIRO		
Institute of Biophysics: research	8,000	70
Medical education: J. Rodrigues da Silva; travel	1,000	32
Medicine: J. S. de Moraes; travel	920	33
Research Center of Brazilian Geography: support	2,400	85
UNIVERSITY OF MINAS GERAIS, BELO HORIZONTE		
Faculty of Medicine: support	339,000	20
UNIVERSITY OF PARANÁ, CURITIBA		
Bee bionomics: J. Moure; research	7,000	51
Genetics: N. Freire-Maia; travel	700	57
UNIVERSITY OF SÃO PAULO		
Piracicaba:		
Luiz de Queiroz College of Agriculture:		
Agricultural research programs; support	120,000	90
Bee genetics; W. E. Kerr; travel	4,300	103
Ribeirão Preto:		
Faculty of Medicine: equipment and supplies	278,000	21
São Paulo:		
Electron Microscopy Laboratory: equipment and supplies	6,000	70
Enzyme chemistry: research	10,000	64
Faculty of Medicine: equipment and supplies	35,500	21
Isotope Laboratory:		
Research expenses	12,000	69
T. Eston; travel	3,750	70
Laboratory for Cell Physiology: research	40,000	55
Physiology: G. A. Edwards; travel	1,750	70
Population genetics program: support	17,000	54
VIRUS STUDIES	50,000	73
CHILE		
AGRICULTURAL OPERATING PROGRAM	118,000	116
BACTERIOLOGICAL INSTITUTE OF CHILE, SANTIAGO		
Animal viruses: research equipment and supplies	4,600	103
Respiratory viruses: O. Avendano; travel	3,400	84

	Amount $	*page*
CATHOLIC UNIVERSITY OF CHILE, SANTIAGO		
Faculty of Agronomy: equipment and supplies	10,000	100
Faculty of Medicine: teaching and research	123,600	24
MINISTRY OF AGRICULTURE, SANTIAGO		
Plant physiology: A. Ramirez; travel	3,100	103
UNIVERSITY OF CHILE		
Faculty of Agronomy: equipment and supplies	10,000	101
Faculty of Medicine: general development	379,000	19
COLOMBIA		
AGRICULTURAL OPERATING PROGRAM	154,250	111
CREDIT BANK FOR AGRICULTURE, INDUSTRY, AND MINES, BOGOTÁ		
E. Chavarriaga; travel	1,400	104
NATIONAL UNIVERSITY OF COLOMBIA		
Medellín:		
Faculty of Agronomy: agricultural communication program; support	10,000	101
UNIVERSITY OF ANTIOQUIA, MEDELLÍN		
Biochemistry: J. Pelaez B.; travel	2,200	30
Department of Physiology: equipment	8,000	29
Microbiology: B. Jimenez; travel	2,675	29
Pathology: A. Correa-Henao; travel	775	30
Surgery: A. Gomez A.; travel	2,550	30
UNIVERSITY OF CALDAS, MANIZALES		
Faculty of Agronomy: equipment, supplies, and library materials	10,000	101
UNIVERSITY OF VALLE, CALI		
Faculty of Medicine:		
Library development	5,000	30
F. C. Lehmann V.; travel	2,300	30
J. A. Montoya O.; travel	2,750	40
School of Nursing: support	46,200	34
COSTA RICA		
INTER-AMERICAN INSTITUTE OF AGRICULTURAL SCIENCES, TURRIALBA		
Graduate School: equipment	7,500	102
Native food crops: study	7,500	102
Potato research program: support	4,500	102
UNIVERSITY OF COSTA RICA, SAN JOSE		
School of Agriculture: development	10,000	101

	Amount $	*page*
EL SALVADOR		
HOSPITAL ROSALES, SAN SALVADOR		
Department of Cardiology: equipment	3,500	56
GUATEMALA		
UNIVERSITY OF SAN CARLOS		
Faculty of Agronomy: equipment and supplies	10,000	101
JAMAICA		
UNIVERSITY COLLEGE OF THE WEST INDIES		
Chemistry: C. H. Hassall; travel	1,950	66
Faculty of Medicine: field training and research	314,000	36
Physiology: S. J. Patrick; travel	1,500	32
Protein metabolism: E. A. Kean; travel	1,250	66
PERU		
NATIONAL INSTITUTE OF NURSING, LIMA		
Teaching equipment	10,000	35
NATIONAL SCHOOL OF AGRICULTURE, LA MOLINA		
Cereals: teaching and research	45,000	95
UNIVERSITY OF SAN MARCOS, LIMA		
Department of Pathological Physiology: teaching and research	90,000	25
TRINIDAD		
DEPARTMENT OF MEDICAL SERVICES		
Health education: S. Moosai-Maharaj; travel	1,000	40
REGIONAL VIRUS LABORATORY	49,250	73
URUGUAY		
RESEARCH INSTITUTE OF BIOLOGICAL SCIENCES, MONTEVIDEO		
Electron microscopy: E. de Robertis; travel	1,960	70
Genetics: F. Sacz; research	2,500	56
UNIVERSITY OF THE REPUBLIC, MONTEVIDEO		
Faculty of Agronomy: construction of insectary	10,000	102
Faculty of Medicine:		
W. Buno; travel	2,250	52
R. Caldeyro-Barcia; travel	3,000	52
P. Ferreira B.; travel	1,125	52
Teaching and research facilities	32,500	28
Faculty of Veterinary Medicine:		
Teaching and research facilities	30,000	97
H. Trenchi; travel	1,300	102

	Amount $	*page*
EUROPE		
AUSTRIA		
SALZBURG SEMINAR IN AMERICAN STUDIES, INC.		
General budget support	125,000	159
UNIVERSITY OF VIENNA		
Social Science Research Laboratory: research	9,820	130
BELGIUM		
UNIVERSITY OF BRUSSELS		
Neurophysiology: research	30,000	49
DENMARK		
ORINGE MENTAL HOSPITAL, VORDINGBORG		
Psychiatric nursing: I. Nielsen; travel	3,050	36
FRANCE		
AMERICAN HOSPITAL OF PARIS		
Chest X-ray apparatus: operating costs	1,500	191
CONGRESS FOR CULTURAL FREEDOM, PARIS		
Science and Freedom Committee: support	12,000	85
ECOLE PRATIQUE DES HAUTES ETUDES, SIXTH SECTION, PARIS		
Area Studies:		
F. Braudel; travel	3,100	167
H. Chambre; travel	2,650	167
J. Train; travel	2,650	167
Asiatic, Slavic, and Islamic studies: development	60,000	161
NATIONAL CENTER FOR SCIENTIFIC RESEARCH, PARIS		
Neurophysiological research: equipment	7,500	51
PASTEUR INSTITUTE, PARIS		
Virus studies: J. Vieuchange; travel	682	85
UNIVERSITY OF PARIS		
Laboratory of Biological Chemistry: equipment	6,500	65
UNIVERSITY OF TOULOUSE		
Neurophysiology: research; staff expenses	4,000	51
GERMANY		
GERMAN ASSOCIATION OF AMERICAN STUDIES		
American studies program: support	30,000	163

	Amount $	*page*
PHILIP UNIVERSITY, MARBURG		
Biochemistry: equipment	22,000	63
UNIVERSITY OF HAMBURG		
Linguistics program: development	6,900	172
UNIVERSITY OF HEIDELBERG		
Physiological Institute: teaching program	7,500	30
Political science: research and teaching	37,150	143
UNIVERSITY OF MUNICH		
Experimental zoology: research	20,000	50
Organic chemistry: R. Huisgen; travel	3,600	65
Symposium on Medical Education: T. von Uexküll; expenses	17	33
GREAT BRITAIN		
LIONEL J. F. BRIMBLE		
Publication of scientific articles: travel	1,750	85
DR. AND MRS. JULIAN HUXLEY		
Evolutionary biology: travel	6,250	51
LONDON SCHOOL OF ECONOMICS AND POLITICAL SCIENCE		
International relations: fellowships and studentships	55,200	142
Structure of Turkish peasant communities: A. P. Stirling; travel	400	168
QUEEN'S UNIVERSITY OF BELFAST		
Department of Chemistry: equipment	16,500	64
Department of Microbiology: equipment	21,000	73
ROYAL INSTITUTION OF GREAT BRITAIN, LONDON		
Protein structure: research	30,300	67
UNIVERSITY OF ABERDEEN		
Agricultural biochemistry: A. J. G. Barnett; travel	2,600	103
UNIVERSITY OF BIRMINGHAM		
Department of Experimental Pathology: equipment	25,000	61
UNIVERSITY OF BRISTOL		
Medicine: C. B. Perry; travel	2,800	31
UNIVERSITY OF CAMBRIDGE		
Biophysics: research	18,000	69
Cavendish Laboratory: X-ray crystallography of proteins; research	40,000	67
Chinese *Ts'ung-shu:* P. van der Loon; travel	1,500	167
Department of Colloid Science: equipment	25,000	61
Economics: P. T. Bauer; travel	1,400	131
Far Eastern history: V. W. W. S. Purcell; travel	3,900	148
Physiology: W. A. H. Rushton; travel	2,675	52
Psychological Laboratory: O. L. Zangwill; travel	2,250	52

	Amount $	*page*
UNIVERSITY OF DURHAM		
Chemistry: J. Weiss; travel	1,700	71
UNIVERSITY OF EDINBURGH		
Department of Biochemistry: equipment	7,500	65
Nursing teaching unit: establishment	90,000	34
Pharmacology: H. M. Adam; travel	900	51
Department of Zoology: equipment	12,000	51
UNIVERSITY OF GLASGOW		
Department of Biochemistry: J. Paul; equipment	300	66
Latin American literature: W. C. Atkinson; study	550	168
UNIVERSITY OF LONDON		
King's College: nucleic acid structure; research	35,000	58
St. Bartholomew's Hospital Medical College: Biochemistry; A. Wormall; travel	700	71
St. Mary's Hospital Medical College: protein metabolism and enzymology; research equipment	13,000	64
London School of Hygiene and Tropical Medicine: Department of Occupational Health; establishment	45,000	37
Environmental sanitation; G. G. Don; travel	2,575	40
School of Oriental and African Studies: Conference on Historical Writing on Southern Asia	23,500	165
University College: Biology; research equipment	8,500	51
Human genetics; research	30,000	54
UNIVERSITY OF OXFORD		
Laboratory of Chemical Crystallography: research	9,000	70
Queen's College: Causation in the Law; A. M. Honoré; research	5,365	147
St. Anne's College: higher education for women; M. Ogilvie; travel	1,000	186
St. Antony's College: the Reformation; S. Kot; study	15,000	171
School of Medicine: research and teaching facilities	156,000	22
Sir William Dunn School of Pathology: W. E. van Heyningen; travel	650	66
Somerville College: Ludwig Wittgenstein Papers; G. E. M. Anscombe; preparation for publication	8,700	171
University College: conference on American studies and fellowships	12,500	165
VICTORIA UNIVERSITY OF MANCHESTER		
Architecture: T. Howarth; travel	6,650	181
GREECE		
UNIVERSITY OF SALONICA		
College of Veterinary Science: equipment and supplies	10,000	101
ITALY		
INSTITUTE OF MILAN		
Sanitary engineering: F. Cambi; travel	318	41

	Amount $	page
ITALIAN INSTITUTE OF HISTORICAL STUDIES, NAPLES		
General support	55,000	170
UNIVERSITY OF BOLOGNA		
Embryology and histology: research equipment and supplies	3,500	52
Institute of Biochemistry: equipment	12,500	64
UNIVERSITY OF NAPLES		
Microcythemia genetics: research	42,500	53
UNIVERSITY OF PARMA		
Human genetics: research	10,000	56
Physiology: research equipment	3,000	52
Plant physiology: F. Lona; travel	4,250	103
UNIVERSITY OF PAVIA		
Institute of Zoology: genetics; research	1,300	57
UNIVERSITY OF ROME		
Biologically significant molecules: research	10,000	70
NETHERLANDS		
HAGUE ACADEMY OF INTERNATIONAL LAW		
International law and international relations: scholarships and administrative expenses	122,000	139
INTERNATIONAL ASSOCIATION FOR PLANT TAXONOMY, UTRECHT		
Meetings: expenses of American participants	1,300	57
TECHNOLOGICAL UNIVERSITY, DELFT		
Education: J. Kiers; travel	3,050	185
UNIVERSITY OF AMSTERDAM		
Virus research: F. Dekking; travel	2,500	84
UNIVERSITY OF LEIDEN		
Education: A. A. van den Brandeler; travel	3,050	185
Social medicine: P. Muntendam; travel	2,625	40
UNIVERSITY OF UTRECHT		
Genetics: research equipment	2,500	56
NORWAY		
NORWEGIAN RADIUM HOSPITAL		
Biochemistry: research equipment	7,500	65
UNIVERSITY OF OSLO		
Neuroanatomy: A. Brodal; travel	2,400	52
Nucleic acid structure: research	2,000	65
Register of Hereditary Diseases: establishment	9,450	56
X-ray crystallography: research	12,000	70

	Amount $	*page*
THE SAAR		
UNIVERSITY OF THE SAAR		
Franco-American relations: J. B. Duroselle; research	8,400	146
SWEDEN		
KAROLINSKA INSTITUTE, STOCKHOLM		
Brain physiology: research equipment	23,400	48
Enzyme chemistry: research	45,000	57
Nucleic acids: research	29,000	57
UNIVERSITY OF LUND		
Endocrinology: research	13,260	50
Genetics and plant breeding: research	40,000	96
Neuropharmacology: S. W. Thesleff; travel	825	33
UNIVERSITY OF STOCKHOLM		
Biochemistry: research	12,000	64
UNIVERSITY OF UPPSALA		
Biochemistry: research	60,000	60
Biophysics: research	22,000	68
Chemistry of biologically active molecules: research	6,000	65
Plant science: research	25,000	100
SWITZERLAND		
FEDERAL TECHNICAL INSTITUTE, ZURICH		
Botany: A. F. Frey-Wyssling; travel	630	71
Chemistry of physiologically important compounds: research	15,000	64
GRADUATE INSTITUTE OF INTERNATIONAL STUDIES, GENEVA		
J. Freymond: travel	2,750	148
INTERNATIONAL PRESS INSTITUTE, ZURICH		
General budget support	100,000	160
UNIVERSITY OF GENEVA		
Philosophy, psychology, and logic: cooperative study	69,120	168
UNIVERSITY OF LAUSANNE		
American literature: R. Rapin; travel	5,200	166
YUGOSLAVIA		
INSTITUTE OF INDUSTRIAL HYGIENE, ZAGREB		
Industrial medicine and hygiene: V. B. Vouk; travel	2,625	40
UNIVERSITY OF ZAGREB		
Genetics: research equipment	3,000	56

	Amount $	*page*
AFRICA		
EGYPT		
EGYPTIAN SERVICE OF ANTIQUITIES		
Kamose stela: L. Habashi; travel	1,450	173
EGYPTIAN SOCIETY FOR HISTORICAL STUDIES, CAIRO		
Modern Arab World: book preparation	19,500	164
MUSTAFA MOSHARAFFA		
Modern Egyptian music: study	1,500	183
UNION OF SOUTH AFRICA		
SOUTH AFRICA VIRUS LABORATORY, JOHANNESBURG	22,500	73
UNIVERSITY OF PRETORIA		
Plant biochemistry: research	7,500	65
UNIVERSITY OF WITWATERSRAND		
Anthropology: P. V. Tobias; travel	3,200	56
NEAR EAST		
IRAQ		
COLLEGE OF ARTS AND SCIENCES, BAGHDAD		
Arts Faculty: research	10,000	165
ISRAEL		
HEBREW UNIVERSITY, JERUSALEM		
Near Eastern history: D. Ayalon and U. Heyd; study	6,300	166
LEBANON		
AMERICAN UNIVERSITY OF BEIRUT		
Pediatrics: H. M. Idriss; travel	1,400	32
NATIONAL CONSERVATORY OF MUSIC, BEIRUT		
A. Fuleihan: purchase of equipment and supplies	1,500	182
TURKEY		
TURKISH AMERICAN UNIVERSITY ASSOCIATION, ISTANBUL		
Development of Modern Turkey: book preparation	10,000	165
UNIVERSITY OF ANKARA		
American literature: H. Dereli; travel	600	168
Pediatrics: I. Dogramaci; travel	2,750	31
Pharmacology: I. Kantemir; travel	3,230	31

	Amount $	*page*
UNIVERSITY OF ISTANBUL		
Near Eastern studies:		
O. Okyar; travel	1,250	168
H. Timur; travel	1,250	168

FAR EAST

AUSTRALIA

ALFRED HOSPITAL CLINICAL SCHOOL, MELBOURNE		
Medical education: E. T. T. Downie; travel	1,000	32
AUSTRALIAN BROADCASTING COMMISSION, SYDNEY		
N. Hutchison: travel	1,000	183
AUSTRALIA-NEW ZEALAND FELLOWSHIP COMMITTEE		
Support	2,760	131
CANBERRA UNIVERSITY COLLEGE		
Economics: R. H. Barback; travel and study	900	131
History: C. M. H. and Mrs. Clark; travel	1,800	167
COMMONWEALTH SCIENTIFIC AND INDUSTRIAL RESEARCH ORGANIZATION, MELBOURNE		
Radio telescope: construction	250,000	187
QUEENSLAND INSTITUTE OF MEDICAL RESEARCH, BRISBANE		
Encephalitis research: P. E. Lee; travel	1,300	84
UNIVERSITY OF ADELAIDE		
American studies: B. R. Elliott; travel	24,000	164
Biochemistry: research equipment	15,000	64
Obstetrics and gynecology: L. O. S. Poidevin; travel	525	33
UNIVERSITY OF MELBOURNE		
Economic development: M. M. Bayne; travel	1,000	138
Library development	3,555	166
UNIVERSITY OF WESTERN AUSTRALIA, NEDLANDS		
Botany: B. J. Grieve; travel and study	1,800	104

CEYLON

DEPARTMENT OF AGRICULTURE, PERADENIYA		
Chemical Division: laboratory equipment and supplies	5,000	103
UNIVERSITY OF CEYLON, COLOMBO		
Drama and theatre arts: library development	1,000	183
Department of Education: T. L. Green; travel	3,875	166
Human and economic geography: R. and Mrs. Wikkramatileke; travel	1,425	138
Pediatrics: P. C. C. de Silva; travel	2,850	31

	Amount $	*page*
INDIA		
B. J. MEDICAL COLLEGE, POONA		
Medical education: J. K. Adranvala; travel	4,225	39
CHRISTIAN MEDICAL COLLEGE, LUDHIANA		
Preventive medicine: research and teaching	8,500	39
CHRISTIAN MEDICAL COLLEGE, VELLORE		
Department of Preventive and Social Medicine:		
Development	4,800	39
Support	34,100	38
Thoracic Surgery Department: equipment	8,000	29
University administration: staff members; travel	4,600	29
GAJRA RAJA MEDICAL COLLEGE, GWALIOR		
Anatomy Department: equipment	5,600	30
GOKHALE INSTITUTE OF POLITICS AND ECONOMICS, POONA		
General budget support	150,000	134
GOVERNMENT OF INDIA, NEW DELHI		
Ministry of Health: Rajkumari A. Kaur; travel	406	40
GOVERNMENT OF UTTAR PRADESH		
Horticultural Research Station: equipment and library materials	47,000	93
INDIAN CANCER RESEARCH CENTRE, BOMBAY		
Laboratory for Studies on Human Variation: support	14,500	56
INDIAN COUNCIL OF MEDICAL RESEARCH, NEW DELHI		
Construction of office building	49,500	42
Virus research: M. G. Raja Varma; travel	3,300	84
INDIAN INSTITUTE OF ART IN INDUSTRY		
A. Mookerjee: travel	5,650	182
KARNATAK UNIVERSITY, DHARWAR		
Library development	1,000	168
LITERARY SOCIETY OF BENGAL, CALCUTTA		
Modern Bengal: S. Ray; study	2,640	172
MEDICAL COLLEGE, TRIVANDRUM		
Obstetrics and gynecology: K. Ponnamma; travel	4,100	30
STATE MEDICAL COLLEGE HOSPITAL, TRIVANDRUM		
Development of clinical teaching facilities	35,000	28
MINISTRY OF HEALTH		
Conference of Indian medical educators	3,000	31

	Amount $	*page*
PATNA UNIVERSITY		
Orthopedic surgery: B. Mukopadhaya; travel	2,325	32
K. PAVRI: virus research; travel	1,350	84
SCHOOL OF NURSING, TRIVANDRUM		
L. A. Johnson: equipment and supplies	5,000	35
UNIVERSITY OF BARODA		
Department of Sociology: study	7,315	137
UNIVERSITY OF CALCUTTA		
Economics: A. K. Datta; travel	2,125	137
UNIVERSITY OF DELHI		
Modern Indian history: research and training	21,000	165
UNIVERSITY OF LUCKNOW		
Public administration: R. U. Singh; travel	5,000	137
UNIVERSITY OF RAJPUTANA		
Medical education: S. K. Menon; travel	427	33
VIRUS STUDIES, POONA	51,000	73
INDONESIA		
INDONESIAN NATIONAL FILM COMPANY, LTD., DJAKARTA		
Drama instruction: U. Isma'il; travel	5,675	182
INDONESIAN NATIONAL THEATRE ACADEMY FOUNDATION, DJAKARTA		
Library development	2,000	182
LIBRARY OF POLITICAL AND SOCIAL HISTORY, DJAKARTA		
Social sciences: purchase of books	7,350	137
MOHAMAD RASJIDI: Arabic studies; travel	3,145	167
MUSLEM UNIVERSITY OF INDONESIA, MAKASSAR		
Library development	2,000	186
NATIONAL HIGHER SCHOOL OF ISLAM RELIGION, JOGJAKARTA		
Library development	2,000	186
JAPAN		
HIROSHIMA UNIVERSITY		
International relations: T. Horikawa; travel and research	2,700	148
INSTITUTE OF PUBLIC HEALTH, TOKYO		
Department of Microbiology: Viral Studies; support	4,400	84
Public health: K. Saito; travel	925	40

	Amount $	*page*
JAPAN SOCIOLOGICAL SOCIETY, TOKYO		
Sociological studies: support	13,000	130
KANSAI UNIVERSITY, OSAKA		
Mysticism in literature: M. Hori; study	4,290	172
KEIO UNIVERSITY, TOKYO		
Interdisciplinary studies of Japanese fishing villages	3,000	137
Pathology: T. Aoki; travel	3,475	31
KOBE UNIVERSITY		
Economics: K. Tanaka; travel	3,225	137
Higher education for women: M. Namba; travel	4,300	185
KYOTO UNIVERSITY		
American studies: support	46,200	158
Research Institute for Fundamental Physics: support	5,000	85
KYUSHU UNIVERSITY, FUKUOKA		
Surgery: H. Miyake; travel	600	33
NATIONAL INSTITUTE OF AGRICULTURAL SCIENCES, TOKYO		
Research program: equipment	50,000	92
OKAYAMA UNIVERSITY		
Ohara Institute for Agricultural Biology: equipment and supplies	10,000	101
OSAKA UNIVERSITY		
Econometrics: S. Ichimura; travel	900	131
TOKUGAWA INSTITUTE FOR BIOLOGICAL RESEARCH, TOKYO		
H. Tamiya: travel	800	122
TOKYO CENTRAL HEALTH CENTER		
Public health nursing: M. Hirai; travel	3,675	35
TOKYO INSTITUTE FOR MUNICIPAL RESEARCH		
Municipal organization and administration: R. Kojima; travel	4,150	137
TOKYO INSTITUTE OF TECHNOLOGY		
Design and architecture: S. Kiyosi; travel	2,700	182
TOKYO UNION THEOLOGICAL SEMINARY		
Linguistics: T. Miyamoto; study	707	173
TOKYO UNIVERSITY		
Comparative religion: H. Kishimoto; research	1,200	168
Faculty of Medicine:		
Biochemistry; N. Shimazono; travel	3,750	31
Hazards of radioactive dusts and vapors; studies	6,500	39
Tissue culture; studies	9,500	51
Political science: library development	2,500	173

	Amount $	*page*
WASEDA UNIVERSITY		
Political science: S. Nishijima; research	6,264	172
KOREA		
NATIONAL POSTGRADUATE SCHOOL OF NURSING, SEOUL		
Teaching activities: equipment and support	10,000	35
MALAYA		
UNIVERSITY OF MALAYA, SINGAPORE		
Chinese Societies: W. L. Blythe; research	2,784	167
Virus research: J. H. Hale; travel	1,350	84
NEW CALEDONIA		
SOUTH PACIFIC COMMISSION, NOUMEA		
Control of the Rhinoceros beetle: research	47,000	94
OKINAWA		
UNIVERSITY OF THE RYUKYUS FOUNDATION, SHURI CITY		
Education: C. Goeku and R. Nakada; travel	4,575	185
PHILIPPINES		
BUREAU OF FORESTRY, LOS BAÑOS		
A. C. Reyes: travel	2,200	104
PHILIPPINE WOMEN'S UNIVERSITY		
Biography of General Emilio Aguinaldo: C. Quirino	3,000	172
SILLIMAN UNIVERSITY, DUMAGUETE		
Library development	5,000	166
Philippine music: study, recording, and performance	13,900	180
UNIVERSITY OF THE PHILIPPINES		
Laguna:		
College of Agriculture:		
N. L. Calo; travel	2,200	101
Equipment and teaching materials	40,000	89
Library development	10,000	101
Scholarships for Indonesian students	120,000	90
D. L. Umali; travel	750	101
Manila:		
Institute of Public Administration: research and training	68,000	132
Quezon City:		
College of Nursing: A. F. Lara; travel	5,100	35
Institute of Hygiene:		
Exchange program with Johns Hopkins University	12,200	38
H. Lara; travel	3,500	39

	Amount $	*page*
Library science: N. P. Verzosa; travel	2,150	185
School of Medicine: J. S. Salcedo, Jr.; travel	600	33
Sociology: expenses of visiting American sociologist	1,600	138

THAILAND

KASETSART UNIVERSITY, BANGKHEN

Department of Home Economics: development	25,000	98

Index

INDEX