

The  
Rockefeller Foundation

Annual Report  
1950

THE ROCKEFELLER  
FOUNDATION

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1950

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<sup>1</sup> Elected April 5, 1950.

<sup>2</sup> Retired April 5, 1950.

<sup>3</sup> Resigned as member of the Executive Committee and Chairman of the Board of Trustees April 5, 1950.



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*Director for the Division of Medicine and Public Health*

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ANDREW J. WARREN, M.D.<sup>6</sup>

*Director for the Natural Sciences*

WARREN WEAVER

*Director for the Social Sciences*

JOSEPH H. WILLITS

*Director for the Humanities*

CHARLES B. FAHS

*Director of Agricultural Programs*

J. GEORGE HARRAR

*Counsel*

CHAUNCEY BELKNAP

VANDERBILT WEBB

<sup>1</sup> Retired June 30, 1951.

<sup>2</sup> Beginning July 1, 1951.

<sup>3</sup> Until June 30, 1951.

<sup>4</sup> Effective May 1, 1951.

<sup>5</sup> Retired May 31, 1951.

<sup>6</sup> Effective June 1, 1951.



To the Trustees of The Rockefeller  
Foundation

GENTLEMEN:

I have the honor to transmit herewith the Annual Report of the work of The Rockefeller Foundation for the period January 1, 1950, to December 31, 1950, including detailed reports of the Secretary and the Treasurer of the Foundation, the Director for the International Health Division, and the Directors for the Medical Sciences, the Natural Sciences, the Social Sciences and the Humanities.

Respectfully yours,

CHESTER I. BARNARD  
*President*



**FOREWORD**  
**BY THE**  
**PRESIDENT**



## FOREWORD BY THE PRESIDENT

**T**HE Annual Report of The Rockefeller Foundation has usually been preceded by the publication of a summary review of the year's work by the President of the Foundation. In view of present world conditions and related adjustments of Foundation program, the President's Review will not appear until early in 1952.

Brief public announcements of new appropriations by the Foundation are issued every three months. The following pages give a complete record of appropriations for the year 1950. Descriptions of the projects for which the grants were made are grouped under the several divisional programs.

Total appropriations made by The Rockefeller Foundation in 1950 amounted to \$11,247,964. The bulk of these funds went for support to projects falling within the five main fields of Foundation activities roughly as follows: for public health, the natural sciences and the social sciences — about \$2,000,000 each; for medical sciences and for the humanities — about \$1,500,000 each. An additional \$1,500,000 was absorbed by scientific services and general expenses coming under the head of administration. Exact figures are given in a statement on

page 23 of this Annual Report. Of the total made available for all divisions of work, 65 per cent was for activities in the United States and 35 per cent for activities in other countries.

#### CHANGES IN THE BOARD OF TRUSTEES

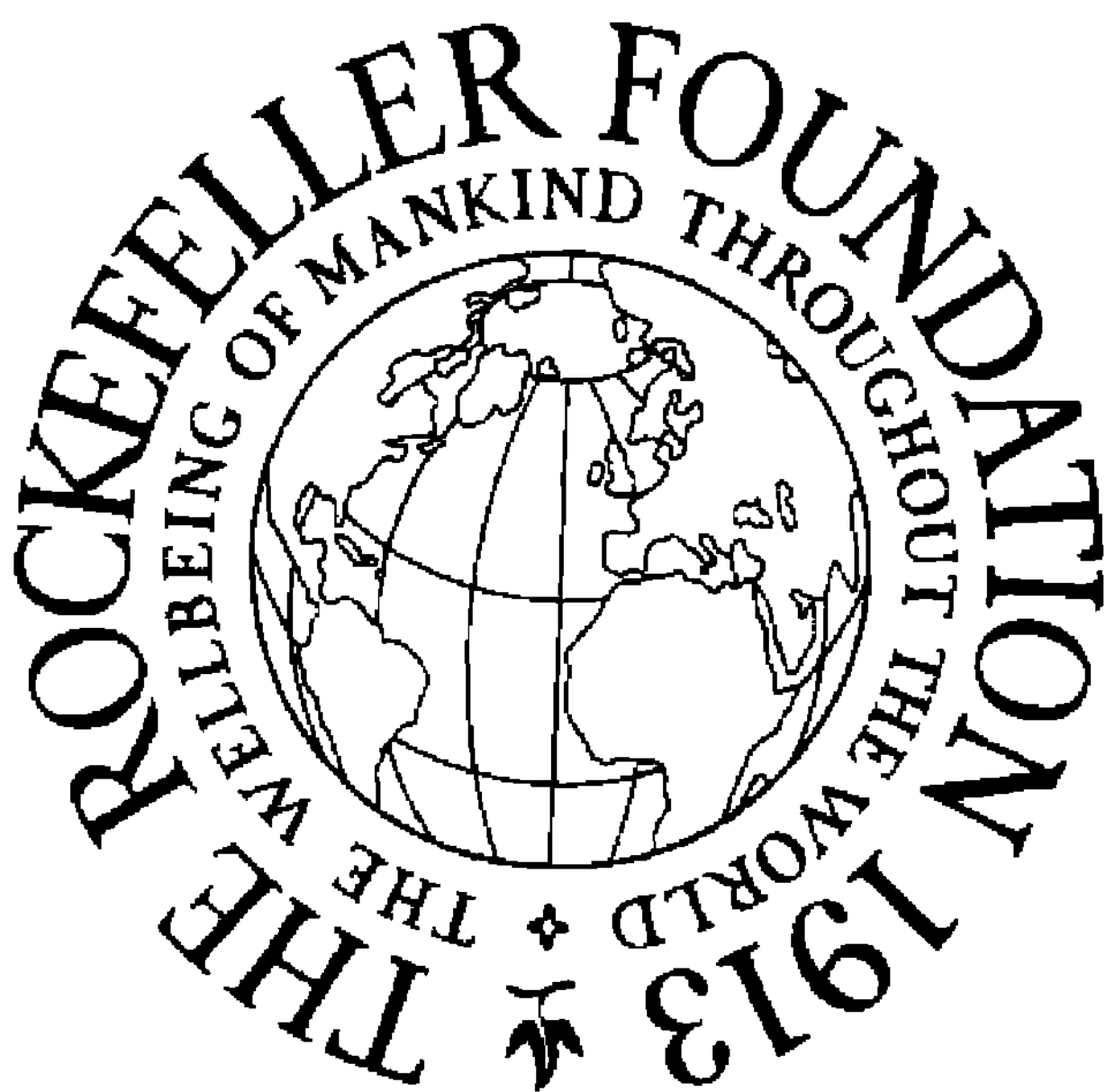
On April 5, 1950, The Hon. John Foster Dulles, who has been a Trustee of the Foundation since 1935, was elected Chairman of the Board to succeed Mr. Walter W. Stewart, who resigned as Chairman April 5, in advance of his retirement as a Trustee on December 5, 1950. The Hon. Lewis W. Douglas was elected a Trustee December 5, to fill the vacancy left by Mr. Stewart. Mr. Douglas had previously been a Trustee from 1935 to 1947, when he became United States Ambassador to Great Britain.

Mr. Geoffrey S. Smith, President of the Girard Trust Corn Exchange Bank, Philadelphia, Mr. William H. Claffin, Jr., of Boston, President of the Soledad Sugar Company, and The Hon. Dean Rusk, Assistant Secretary of State for Far Eastern Affairs, were elected April 5, 1950, to succeed Mr. John J. McCloy, Mr. Harold H. Swift and Mr. Walter S. Gifford. Mr. McCloy had resigned in 1949 to become United States High Commissioner for Germany; Mr. Swift and Mr. Gifford retired in April 1950.

#### ORGANIZATION MATTERS

For many years the International Health Division has been a quasi-autonomous division of the Foundation. This status was established and maintained





Photograph Excised Here

Delegates to the 1950 Inter-American Symposium on Plant Pests and Diseases inspect new corn varieties developed in the Mexican Agricultural Program





Photograph Excised Here



Photograph Excised Here

Annealing, or tempering,  
a glass ion-exchange column  
used for ammonia detection  
in enzyme chemistry research  
at Harvard University

Participants in the recent  
American Press Institute-  
Columbia University program  
for foreign editors arriving  
for a visit to newspapers  
in Houston, Texas

by making annually a lump sum appropriation for the Division, to be disbursed by a Board of Scientific Directors. The board consisted of six persons, plus the Director of the Division and the President of the Foundation *ex officio*. This procedure was entirely satisfactory under former conditions. Because of the broadening scope of public health functions, however, the growing necessity for judging major Foundation activities in the light of human ecological considerations, the increasing relevance of social and political factors to the work of the Division, and the continued importance of closely integrating all activities of the Foundation, it seemed desirable to bring directly to the Trustees of the Foundation all major appropriations and matters of policy. The Board of Scientific Directors was changed, therefore, to a Board of Scientific Consultants, with functions quite similar in substance, but advisory rather than executive in character. This was effected April 5, 1950.

The circumstances that led to this change, as well as the unstable conditions in many parts of the world, made desirable a further review of the functions of the International Health Division and a new assessment of the opportunities in public health work. At the same time questions arose on the policy of the Foundation with respect to the promotion of agricultural development and on the extent of support to be given to agriculture and to public health. Finally, there was the difficult question of how to organize field operations of both kinds in foreign countries, i.e., whether to engage directly in such operations or to provide for them through grants to existing agencies. These were all urgent problems upon which the very

best obtainable advice was desired. To secure this, the President, with the authorization of the Trustees, appointed a commission to review the activities of the International Health Division and to consider the desirability of changes in the scope and character of the Division's work, as well as to advise on the continuation of agricultural work and the relation of the Division to agriculture and to the Medical Sciences division. With one exception, all members of this special commission have or have had responsible working relationships with the Foundation, either as Trustees, officers, scientific consultants or staff members. All are familiar with The Rockefeller Foundation and its activities, both past and present.

The commission began its work on May 19, 1950. It was composed of the following:

*Present Trustees*

Robert F. Loeb, M.D., Bard Professor of Medicine, Columbia University College of Physicians and Surgeons

Henry Allen Moe, Secretary-General, John Simon Guggenheim Memorial Foundation, New York

William I. Myers, Dean, College of Agriculture, Cornell University

Thomas Parran, M.D., Dean, Graduate School of Public Health, University of Pittsburgh, who was also on the Board of Scientific Consultants of the International Health Division\*

John D. Rockefeller, 3rd

*Former Trustees*

Walter S. Gifford, Former President of the American Telephone and Telegraph Company (resigned from commission October 4, 1950, upon his appointment as United States Ambassador to Great Britain)

Walter W. Stewart, Professor Emeritus, School of Historical Studies, Institute for Advanced Studies, Princeton

\* Now serving in the same capacity for the Division of Medicine and Public Health.

*Officers*

Alan Gregg, M.D., Former Director for the Medical Sciences division, now a Vice-President of the Foundation  
Warren Weaver, Director for the Natural Sciences  
Joseph H. Willits, Director for the Social Sciences

*Former Staff Members of the International Health Division*

Lowell T. Coggeshall, M.D., Dean, Division of the Biological Sciences, University of Chicago  
Hugo Muench, M.D., Professor of Biostatistics and Assistant Dean, School of Public Health, Harvard University

*Members of the Board of Scientific Consultants, International Health Division\**

Dean A. Clark, M.D., Director, Massachusetts General Hospital, Boston  
Gordon M. Fair, Chairman, Division of Engineering Sciences, Harvard University  
Wilton L. Halverson, M.D., Director, California State Department of Public Health  
Kenneth F. Maxcy, M.D., Professor of Epidemiology, Johns Hopkins School of Hygiene and Public Health  
Hugh J. Morgan, M.D., Professor of Medicine, Vanderbilt University

*Former Member of Board of Scientific Directors, International Health Division*

Lowell J. Reed, M.D., Vice-President of the University and Hospital, Johns Hopkins Medical Institutions

*Advisory Committee for Agricultural Activities*

Richard Bradfield, Head, Department of Agronomy, Cornell University  
Paul C. Mangelsdorf, Director, Botanical Museum, Harvard University  
E. C. Stakman, Chief, Department of Agriculture, University of Minnesota

---

Fairfield Osborn, President, The Conservation Foundation, New York

\*Now serving in the same capacity for the Division of Medicine and Public Health.

Professor Gordon M. Fair, Chairman of the Board of Scientific Consultants, was appointed Chairman of the commission. One meeting of the commission as a whole was held in 1950, and was followed by several meetings of subcommittees. Although the work of the commission will not be completed until the fall of 1951, its preliminary deliberations were helpful with respect to important changes recommended by the President and adopted by the Board of Trustees at its meeting of April 5, 1951. These are briefly reported here. Resolutions were passed discontinuing the International Health Division and the office of the Director for the Medical Sciences as of April 30, 1951, and creating a new division, to be known as the Division of Medicine and Public Health, to conduct the Foundation's programs in the fields of public health and the medical sciences under the supervision of a single director.

The new division is designed to meet today's larger concept of medicine, in which the formerly distinct boundaries between curative and preventive medicine are rapidly disappearing. The Director of the new division is Dr. Andrew J. Warren, formerly Associate Director of the International Health Division. Associate Directors are Dr. Robert S. Morison, Dr. Wade W. Oliver and Dr. Robert R. Struthers, formerly Associate Directors for the Medical Sciences. Assistant Directors are Dr. Hugh H. Smith, Miss Mary Elizabeth Tennant and Dr. George C. Payne, formerly Assistant Directors of the International Health Division.

Dr. Alan Gregg, who served for 21 years as Director for the Medical Sciences, following previous service

in various capacities since 1919, was elected a Vice-President of the Foundation. He will be freed of administrative work to continue his studies of such broad questions as the new demands of medical education and the integration of the various branches of medical work. These issues bear on Foundation operations in all fields.

Dr. George K. Strode, Director of the International Health Division, retired in accordance with the Foundation's regular age-retirement rule as of May 31, 1951. Dr. Strode became a member of the Foundation's staff in 1916. He was stationed for the greater part of his service in foreign countries, and was concerned chiefly with the direction and administration of public health activities carried on by The Rockefeller Foundation in cooperation with foreign governments. From 1920 to 1926 he was stationed in Brazil. In 1927 he became Assistant Director of the International Health Division and was attached to the Paris office of the Foundation, serving there as chairman for all divisions of the Foundation's work from 1932 to 1938. In 1935 he was also placed in charge of the International Health Division activities in Africa and the Near East. He was appointed Associate Director of the International Health Division in 1938 and elected Director in 1944.

Dr. J. G. Harrar, who was in charge of field operations for the Foundation's Mexican and Colombian agricultural programs, became as of April 1951 Director of Agricultural Programs for the Foundation.





# REPORT OF THE SECRETARY



## SECRETARY'S REPORT

**T**HE members and Trustees of The Rockefeller Foundation during the year 1950 were:

WALTER W. STEWART, *Chairman*<sup>1</sup>

JOHN FOSTER DULLES, *Chairman-elect*<sup>2</sup>

WINTHROP W. ALDRICH

ROBERT A. LOVETT

CHESTER I. BARNARD

HENRY ALLEN MOE

WILLIAM H. CLAFLIN, JR.<sup>2</sup>

WILLIAM I. MYERS

KARL T. COMPTON

THOMAS PARRAN, M.D.

JOHN S. DICKEY

JOHN D. ROCKEFELLER, 3RD

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DEAN RUSK<sup>2</sup>

LEWIS W. DOUGLAS<sup>3</sup>

GEOFFREY S. SMITH<sup>2</sup>

DOUGLAS S. FREEMAN

ROBERT G. SPROUL

HERBERT S. GASSER, M.D.

ARTHUR HAYS SULZBERGER

WALTER S. GIFFORD<sup>4</sup>

HAROLD W. SWIFT<sup>4</sup>

ROBERT F. LOEB, M.D.

HENRY P. VAN DUSEN

The officers of the Foundation were:

WALTER W. STEWART, *Chairman of the Board of Trustees*<sup>1</sup>

JOHN FOSTER DULLES, *Chairman-elect of the Board of Trustees*<sup>2</sup>

CHESTER I. BARNARD, *President*

LINDSLEY F. KIMBALL, *Vice-President*

FLORA M. RHIND, *Secretary*

EDWARD ROBINSON, *Treasurer*

GEORGE J. BEAL, *Comptroller*

GEORGE K. STRODE, M.D., *Director for the International Health Division*

ALAN GREGG, M.D., *Director for the Medical Sciences*

WARREN WEAVER, *Director for the Natural Sciences*

JOSEPH H. WILLITS, *Director for the Social Sciences*

CHARLES B. FAHS, *Director for the Humanities*

<sup>1</sup> Resigned as Chairman of the Board of Trustees and member of the Executive Committee April 5, 1950.

<sup>2</sup> Elected April 5, 1950.

<sup>3</sup> Elected December 5, 1950.

<sup>4</sup> Retired April 5, 1950.

The Foundation's counsel were Chauncey Belknap and Vanderbilt Webb. Arthur Hays Sulzberger served as a Committee on Audit for the year 1950.

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

THE PRESIDENT, *Chairman*

HAROLD W. DODDS <sup>1</sup>	GEOFFREY S. SMITH <sup>2</sup>
JOHN FOSTER DULLES	WALTER W. STEWART <sup>4</sup>
ROBERT F. LOEB, M.D.	HERBERT S. GASSER, M.D., alternate member <sup>3</sup>
ROBERT A. LOVETT <sup>2</sup>	WALTER S. GIFFORD, alternate member <sup>5</sup>
HENRY ALLEN MOE	HENRY P. VAN DUSEN, alternate member
JOHN D. ROCKEFELLER, 3RD	

The following served as members of a Board of Scientific Consultants for the International Health Division of the Foundation during 1950:

DEAN A. CLARK, M.D.	KENNETH F. MAXCY, M.D.
GORDON M. FAIR	HUGH J. MORGAN, M.D.
WILTON L. HALVERSON, M.D.	THOMAS PARRAN, M.D.

MEETINGS

During 1950 regular meetings of The Rockefeller Foundation were held on April 5 and December 5 and 6. Six meetings of the Executive Committee were held in 1950 to take actions within general policies approved by the Trustees.

<sup>1</sup> Elected December 5, 1950.

<sup>2</sup> Resigned from Executive Committee December 5, 1950.

<sup>3</sup> Elected April 5, 1950.

<sup>4</sup> Resigned as Chairman of the Board of Trustees and member of the Executive Committee April 5, 1950.

<sup>5</sup> Retired April 5, 1950.

### APPOINTMENTS, RETIREMENTS AND RESIGNATIONS

In addition to the details regarding staff reorganization and Trustee changes mentioned in the President's Foreword, there were during 1950 the following appointments, retirements and resignations:

L. Sterling Wortman, Jr., was appointed Assistant Geneticist on May 1, 1950, and Douglas Barnes was appointed Assistant Entomologist on July 15, 1950, with the agricultural program in Mexico. Lewis M. Roberts was transferred May 15, 1950, from the Mexican Agricultural Program to be Local Director for the agricultural program which the Foundation is conducting in cooperation with the government of Colombia. At the same time Joseph A. Rupert, Field Agronomist, was transferred to the Colombian Agricultural Program.

Brian R. Dyer, for 23 years sanitary engineer with the International Health Division, retired August 31, 1950. Mr. Dyer, who had previously served with the Foundation's yellow fever commissions in Guatemala, Mexico and West Africa, was appointed in May 1927 to the field staff of the International Health Division for service in Ceylon, where the Foundation was instituting malaria control work. He was loaned to the Ceylon government to organize a division of sanitary engineering, of which anti-malaria operations were an important function. Mr. Dyer later served in West Africa, Ceylon, China,

India and the Leeward and Windward Islands, and finally in Egypt.

Dr. Fred L. Soper, Associate Director of the International Health Division, resigned as of October 31, 1951. Since February 1947 Dr. Soper has been on leave of absence, serving as Director of the Pan American Sanitary Bureau, and since 1949 also as Regional Director of the World Health Organization. Dr. Soper came to the Foundation in 1920 and conducted hookworm control work in Brazil and Paraguay from 1920 to 1927. From 1927 to 1942 his headquarters were in Brazil, where he directed studies on the epidemiology and control of yellow fever and was in general administrative charge of the International Health Division's program in Brazil. For the period 1935 to 1940 he was also in general charge of the Division's yellow fever program in all of South America. It was in Brazil that Dr. Soper directed the measures to eradicate the malaria mosquito, *Anopheles gambiae*, a campaign which demonstrated the possibility of species eradication. Dr. Soper was Consultant to the Secretary of War on Epidemic Diseases from 1942 to 1946 and Director of The Rockefeller Foundation Health Commission Typhus Team in North Africa and Italy from 1943 to 1944. He was in charge of malaria control for the Foundation in Italy and Egypt from 1944 to 1946.

Dr. J. Harland Paul resigned September 30, 1950, after 20 years of service as a member of the International Health Division staff. He came to the

Foundation July 31, 1930, and first made a study of respiratory diseases in Spitsbergen. In 1932 he began studies on yellow fever at the International Health Division Laboratories in New York, which he continued at the Yellow Fever Institute in Lagos, West Africa, in Brazil, in Colombia and as a member of the Foundation's research unit at the Yellow Fever Institute, Entebbe, Uganda, East Africa. Dr. Paul also conducted malaria control work and research in Haiti, Florida, India, China and the island of Taiwan (Formosa).

Thomas P. Hughes came to the Foundation June 1, 1931, and did research in yellow fever at the International Health Division Laboratories in New York for seven years. He then went to the Yellow Fever Institute at Entebbe, Uganda, to join the Foundation's yellow fever research unit there, and subsequently spent about five years in Brazil. He resigned August 31, 1950, to take up the post of Chief of the Virus Unit at the Virus and Rickettsia Division of the Communicable Diseases Center, Montgomery, Alabama.

Dr. Alexander J. Haddow was appointed to the staff of the International Health Division July 1, 1945, for service at the Yellow Fever Institute at Entebbe, Uganda. He had been serving at the institute as entomologist under British auspices, and was employed jointly by the British government and the International Health Division. Dr. Haddow resigned from the International Health Division February 3,

1950, to become epidemiologist with the Colonial Medical Research Service at the Entebbe institute.

Miss Margaret L. Varley was appointed to the staff of the International Health Division June 1, 1947, after experience as Regional Nursing Consultant in northern Greece as a member of the United States Public Health Service mission to Greece. Until her resignation March 15, 1950, she served in the North Africa — Asia Minor region, with headquarters at the Foundation's Cairo office. Miss Varley is now Associate in Public Health Nursing at the Harvard School of Public Health, Boston, Massachusetts.

Norman S. Buchanan, Associate Director for the Social Sciences, resigned August 31, 1950, after three and a half years of service, to return to his post as Professor of Economics at the University of California.

Leland G. Allbaugh, formerly with the Agricultural Relations Department of the Tennessee Valley Authority, was appointed Assistant Director for the Social Sciences January 1, 1948, to assist in a survey of the Island of Crete, made at the invitation of the Greek government. The Social Sciences division, the Natural Sciences division and the International Health Division of the Foundation collaborated in this survey. Mr. Allbaugh's appointment expired December 31, 1950.

Eilif V. Miller was appointed associate soil scientist for the Foundation's agricultural program in Mexico January 1, 1948. He served in that capacity until



August 28, 1950, when he resigned to accept a position as Research Associate Professor at North Carolina State College of Agriculture and Engineering, Raleigh.

#### APPLICATIONS DECLINED DURING 1950

The number of applications for aid that were declined in 1950 was 2,989. Many of these were in categories entirely outside the Foundation's field of work, such as assistance to displaced persons, to charitable agencies, to individuals for personal aid, and for support of institutions of purely local character. The category that had the largest number of applications declined — 1,064, or about 36 per cent — was as usual fellowships, scholarships and travel and training grants. While many of these were applications of legitimate interest to the Foundation that after consideration could not be granted for one reason or another, many others were from persons whose qualifications and purposes had no relation to the Foundation's program.

The Foundation does not make gifts or loans to individuals, finance patents or altruistic movements involving private profit, contribute to the building or maintenance of churches, hospitals or other local organizations, or support campaigns to influence public opinion.

Applications declined in 1950 were for the following purposes: fellowships, scholarships, travel and train-

ing grants, 1,064; development of educational and cultural institutions and projects, 390; studies and activities in the creative arts, 359; aid to institutions of purely local character, such as hospitals, churches and schools, 263; scientific research projects and teaching programs, 241; personal aid to individuals and assistance to displaced persons, 161; publication of miscellaneous manuscripts, 134; conferences and meetings, 73; continued aid to previously supported projects, 53; promotion of cures and remedies, investigations of theories and inventions, 51; aid to charitable agencies or programs, 49; purchase or disposal of real and personal property, 31; public health projects, 31; and other miscellaneous purposes, 89.

### FINANCIAL STATEMENT

A summary of the Appropriations Accounts of the Foundation for the year 1950 and a statement of its Principal Fund follow:

## SUMMARY OF APPROPRIATIONS ACCOUNTS

FUNDS AVAILABLE		FUNDS APPROPRIATED	
Balance from 1949. . . . .	\$8,105,043	Appropriations	
Income for 1950. . . . .	12,828,195	Public Health. . . . .	\$2,326,840
Unexpended balances of appropriations allowed to lapse and refunds on prior year grants. . . . .	1,196,707	Medical Sciences. . . . .	1,240,900
		Natural Sciences. . . . .	2,092,515
		Social Sciences. . . . .	2,122,085
		Humanities. . . . .	1,491,250
		Miscellaneous. . . . .	477,500
		Administration	
		Scientific Services. . . . .	1,003,747
		General. . . . .	493,127
			<hr/>
			\$11,247,964
		Authorization for later appropriation by the Executive Committee	238,367
			<hr/>
			\$11,486,331
		Balance available for ap- propriation in 1951..	10,643,614
			<hr/>
	<hr/>		<hr/>
	\$22,129,945		\$22,129,945
	<hr/>		<hr/>

## PRINCIPAL FUND

Book value, December 31, 1949. . . . .	\$114,884,394
Amount by which the proceeds of securities sold, etc., during 1950 exceeded the ledger value. . . . .	3,851,353
	<hr/>
	\$118,735,747



**INTERNATIONAL HEALTH DIVISION**

# INTERNATIONAL HEALTH DIVISION

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<sup>1</sup> Changed from Board of Scientific Directors at meeting of Trustees, April 5, 1950.

<sup>2</sup> Resignation effective October 31, 1951.

<sup>3</sup> Appointed December 5, 1950.

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C. BROOKE WORTH, M.D.	

<sup>1</sup> Retirement effective August 31, 1950.<sup>2</sup> Resignation effective February 3, 1950.<sup>3</sup> Resignation effective August 31, 1950.<sup>4</sup> Deceased June 18, 1951.<sup>5</sup> Resignation effective July 9, 1951.<sup>6</sup> Resignation effective March 31, 1951.<sup>7</sup> Resignation effective September 30, 1950.<sup>8</sup> Deceased January 16, 1951.<sup>9</sup> Resignation effective March 15, 1950.





## INTERNATIONAL HEALTH DIVISION

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# INTERNATIONAL HEALTH DIVISION

## THE CONTROL OF INSECT-BORNE DISEASE

**S**INCE the turn of the century, following the discoveries of Sir Ronald Ross and Walter Reed, the control of insect-borne diseases has been increasingly accepted as an international problem. Individual nations soon found that against the ravages of such dread epidemic afflictions as yellow fever, typhus and plague, simple quarantine measures in their own ports were not adequate, and so, beginning in 1892, a series of international conventions was implemented. The idea has spread, and today the task of health promotion has been taken over on a global scale by the World Health Organization of the United Nations, whose work is supplemented by numerous regional and national agencies.

For the past 35 years or so, starting at a time when the organization of this disease control machinery was in its infancy, The Rockefeller Foundation has been privileged to participate in its development and expansion. As late as the second decade of this century one of the principal hindrances to effective disease control was the lack of basic knowledge about the cause and nature of some of the more troublesome insect-borne diseases. Ross had pointed out the rela-

tion between mosquitoes and malaria as early as 1897, but the role of the mosquito in the transmission of yellow fever was only vaguely surmised at that period. Even after Walter Reed and his co-workers on the United States Army Yellow Fever Commission in Cuba had concluded that the theory of Dr. Carlos J. Finlay of Havana was correct, and that the *stegomyia* (i.e., *aegypti*) mosquito was the vector of yellow fever (1900), the specific agent causing the disease remained unknown.

When, in 1914, the newly organized International Health Commission of The Rockefeller Foundation entered upon the scene, the situation was decidedly obscure. The construction of the Panama Canal had given new emphasis to the constant hazard from yellow fever-bearing mosquitoes in the New World, and the opening of the new canal aroused concern that the disease might be enabled to invade the Far East. In accordance with the then-current belief that yellow fever could be eradicated throughout the world by a persistent attack on *Aedes aegypti* mosquitoes in all endemic centers, the Foundation first sent a commission headed by General William C. Gorgas to investigate the status of endemic centers in South America. This gradually led to a full-scale program of investigation and control in cooperation with government authorities in both South America and Africa. But the road to yellow fever control proved neither short nor straight. Even after anti-*aegypti* methods had apparently succeeded in banishing yellow fever from well-known centers, a number of vexing ques-

tions remained. The actual agent that caused the disease continued to elude investigators; the identity or separateness of South American and African yellow fever was in dispute; no explanation was available for the cases of yellow fever that cropped up in places where no *aegypti* were present. Only by dint of long and patient research were the answers to these problems worked out.

Following the recommendation of the Foundation's 1920 Yellow Fever Commission to the West Coast of Africa, another commission, known as the West Africa Yellow Fever Commission, was sent out under the leadership of Dr. Henry Beeuwkes in 1925. In 1927 the Foundation established a Yellow Fever Laboratory in New York, headed by Dr. Wilbur A. Sawyer. Slowly the scientists in South America, in Africa and in New York began to piece together the yellow fever story. In New York the identity of the African and South American diseases was proved. Workers in Africa confirmed the fact that yellow fever was due to a filtrable virus and discovered that the rhesus monkey could be used as an experimental animal. From South America and from Africa came reports of mosquitoes other than *A. aegypti* that could transmit yellow fever virus. This soon led to the concept of jungle yellow fever.

From this point on, things moved more rapidly. The revelation of the susceptibility of mice to yellow fever virus sparked the development of an immunological test for past infection with yellow fever that was at the same time simpler and less expensive than

previous tests with rhesus monkeys. This new mouse protection test, applied in world-wide surveys, afforded yellow fever research workers a potent tool for determining the distribution of yellow fever. A further diagnostic weapon was provided by viscerotomy, a simple method of removing fragments of liver tissue for microscopic examination without resort to autopsy. With the mouse protection test for gathering *post facto* evidence of yellow fever infection in both humans and animals, and viscerotomy for obtaining information on actual occurrence of the disease, it became possible to fill in some of the gaps in our knowledge of the natural history of yellow fever.

Soon two epidemiologically distinct types of yellow fever were recognized for both South America and Africa, namely classic urban yellow fever and jungle yellow fever, each with its own characteristic transmission cycle. Urban yellow fever, as the name implies, occurs in cities and is transmitted from an infected patient to a nonimmune person by the house-visiting mosquito, *A. aegypti*. The elimination of this pest therefore cleared the cities of yellow fever. Jungle yellow fever, on the other hand, occurs in outlying areas, in or close to forest or jungle. Here *aegypti* are absent, and infection is tied not to the household, but rather to contact with the forest. A number of mosquitoes play a part in the transmission of the disease, but the chief culprits are members of the genus *Haemagogus* in South America and *Aedes africanus* in Africa.

While all this information on epidemiology and transmission was being worked out, the other side of

the picture was also receiving concentrated attention. It was not enough to know how people got yellow fever. It was also vitally important to find out how to keep them from getting it. Wiping out *aegypti* proved to be an incomplete solution. A practicable method of immunizing the large populations exposed to the disease was needed. Workers in the Yellow Fever Laboratory in New York had devised a technique for protecting researchers against the dangerous virus they were handling, but the method called for large quantities of blood serum from persons immune to yellow fever as the result of a previous attack. Aside from the expense involved, there just would not have been enough human immune serum to go around, so some other means for providing mass immunization had to be found.

From the various strains of yellow fever virus in the Yellow Fever Laboratory, one strain, the Asibi, was selected as source material for a potential vaccine. This virus took its name from Asibi, the 28-year-old African man from whom it had first been isolated in the field. When the experiments were started, the virus had been kept alive for over three years without being passed through a living animal host. A series of cultures through different mediums was begun. Many, many subcultures later, the Asibi virus emerged as the strain called 17D. When tested in monkeys the 17D virus produced only a mild generalized infection, followed by recovery and the development of a solid immunity against virulent strains of yellow fever virus. After careful testing in monkeys, vaccine made from this modified 17D virus

was tried in the field on human beings. The trial was successful, and as of 1937, medical and public health men have had at their command a safe, effective method for large-scale immunization against yellow fever. Recently, following the method developed by French scientists at the Pasteur Institute, Dakar, a technique for giving 17D by scratching it into the skin, as with smallpox vaccine, has been under study.

The availability of a sure prophylactic against the disease was indeed a notable achievement. Aegypti control, where feasible, plus immunization with 17D vaccine seemed to add up to the goal of yellow fever control. But yellow fever researchers did not consider their job done. Some of the pieces of the puzzle were still missing. The picture for urban yellow fever was fairly clear — it depended on the man-aegypti-man cycle. The facts with regard to jungle yellow fever were less apparent, and reliable control of the disease could not be attained unless the mechanism of jungle yellow fever was known. The search went on.

The jungle yellow fever suffered by human beings is an offshoot of the disease occurring within the forests or jungle. As far as is known, the virus is maintained in the forests by a cycle involving mosquitoes and forest mammals, chiefly primates. The infection is transmitted from animal to animal by a suitable mosquito. *Haemagogus* mosquitoes are the main vectors in South America. In Africa, through diligence and patience *A. africanus* was finally incriminated as an important vector among animals. The way in which yellow fever virus from the forest takes hold



as human jungle yellow fever differs somewhat for Africa and South America, however. In South America, man contracts his infection when he goes into the jungle or the forest for some purpose such as woodcutting and is bitten by the same mosquito that transmits yellow fever from animal to animal. In Africa, where people enter the forest less often and quit it before twilight (the favorite biting time of *africanus*), an intermediate vector, *Aedes simpsoni*, comes into play. *Simpsoni*, whose habitat is around houses and the fringes of the forest, has constant opportunity to bite both monkeys and human beings. When a monkey infected with yellow fever virus leaves the forest to raid a banana plantation for food, he may be bitten by a *simpsoni* mosquito, which in turn becomes infected with the virus. The human being contracts his infection by being bitten by this same mosquito; *africanus* feeds preferentially on monkeys and does not emerge from the forest to bite people, while *simpsoni* does not enter the forest to transmit the disease from animal to animal.

With the discovery of the mechanism of jungle yellow fever and the determination that the true reservoir of the disease lies in tropical forests, the yellow fever story appears relatively complete. More than three decades of painstaking investigation, involving cooperation between laboratory researchers and scientists in the field, between scientists and lay workers, between governments and private agencies, and between the government services of various countries, have resulted in a) identification of mos-

quitoes as the vectors of yellow fever; b) development of techniques for eliminating the urban vector, *A. aegypti*; c) isolation and identification of the causative virus of the disease; d) discovery of the cycle of jungle yellow fever and partial elucidation of the epidemiology of the disease; e) development of a workable method of protecting human beings exposed to the disease. In a sense, yellow fever may be said to have been conquered. However, it is not a dead foe; it is only a dormant one. The price of freedom from yellow fever is constant vigilance.

The work of yellow fever control is now in the hands of official national and international agencies, which in many cases have taken over programs begun by The Rockefeller Foundation. The Foundation itself has now withdrawn from research and field activities in yellow fever. The history of its part in the war against one of mankind's formidable enemies was summarized recently by Dr. George K. Strode, Director of the International Health Division, and eight members of the Division's staff in a book, *Yellow Fever*. This volume is more than an account of the waging and winning of a good fight. The work described in *Yellow Fever* constitutes an important contribution to the techniques of virology and epidemiology in general and points the way to the control of other insect-borne diseases.

#### INVESTIGATIONS ON NEW VIRUSES

Last year the program of the virus section of the International Health Division Laboratories in New

York was headed toward a systematic study of new viruses isolated in South American and African forests during the epidemiologic investigations of yellow fever. The recently discovered viral agents aroused the interest of yellow fever workers because in many instances they appeared to simulate the epidemiologic pattern of yellow fever. It seemed possible that, like the yellow fever virus, they were responsible for numerous unrecognized virus infections involving human beings as well as animals. The program has already provided evidence that this is the case.

Originally, the laboratories had a collection of 18 viruses, nine deriving from South America and nine from Africa. In the course of the initial investigations to discover the relationships between the viruses, it became possible to eliminate three. The Kumba virus from the British Cameroons proved identical with the Semliki Forest virus previously found in East Africa. The Mengo virus isolated in East Africa proved to be identical with the M.M., Columbia-SK and EMC viruses previously isolated in the United States and found to be indistinguishable from each other. One Brazilian virus had to be eliminated because no new viral agent could be obtained from the specimen materials.

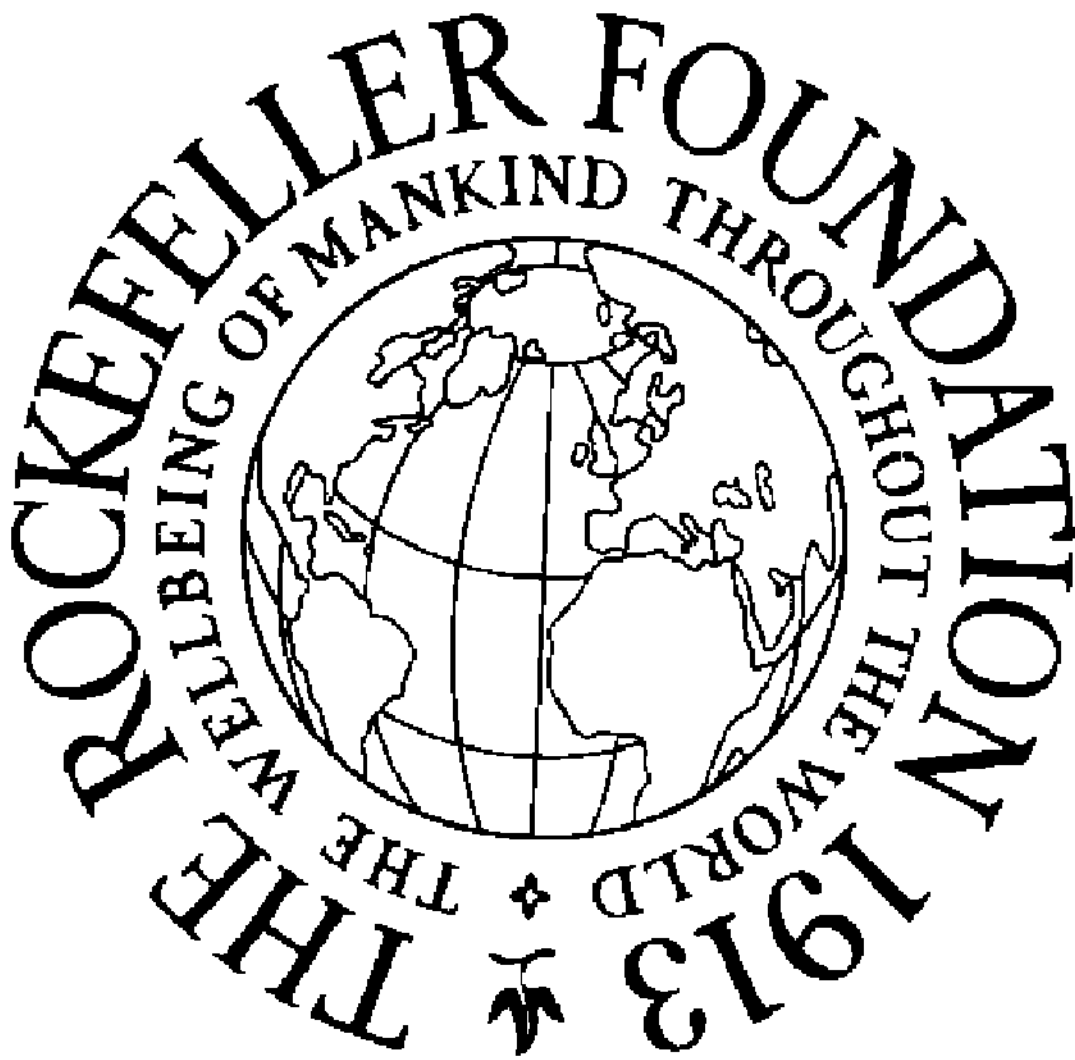
First efforts have been directed at determining the nature of each virus and comparing it with known viruses belonging to the encephalitogenic group. No less than five of the agents can now be tentatively assigned to this group: the West Nile, Zika and Ntaya viruses from Africa, and the Anopheles A and Ilhéus viruses from South America. These are

immunologically related to each other or to other recognized encephalitic agents. Several are already known to be pathogenic for man, either on the grounds that they were isolated from infected humans, or because their specific antibodies could be demonstrated in the blood of human beings.

Previous studies with the West Nile virus uncovered the important fact that it is immunologically related to both the St. Louis encephalitis virus and the virus of Japanese B encephalitis. In the western portion of the United States, the St. Louis virus produces a severe disease in man, as does the similar virus, Japanese B, in Japan and other parts of the Far East. Immunity to the West Nile virus is widely distributed in the equatorial regions of Africa, and in these same regions antibodies to both the St. Louis and the Japanese B viruses have been found in the human population.

The West Nile virus is related to Zika virus and may also be related to the virus of louping ill, a tick-borne disease of sheep and human beings in Scotland. The virus of louping ill, in turn, is related to both the Ntaya and the Russian spring-summer encephalitis viruses. The Ntaya agent is also related to Anopheles A and the St. Louis viruses, and the last, in turn, is related to Ilhéus virus. Zika and louping ill viruses are further related to dengue virus, which is also related to yellow fever virus. Other, yet undiscovered, relationships may exist.

There is thus a group of perhaps ten viruses which possess unique but complex interrelationships. The

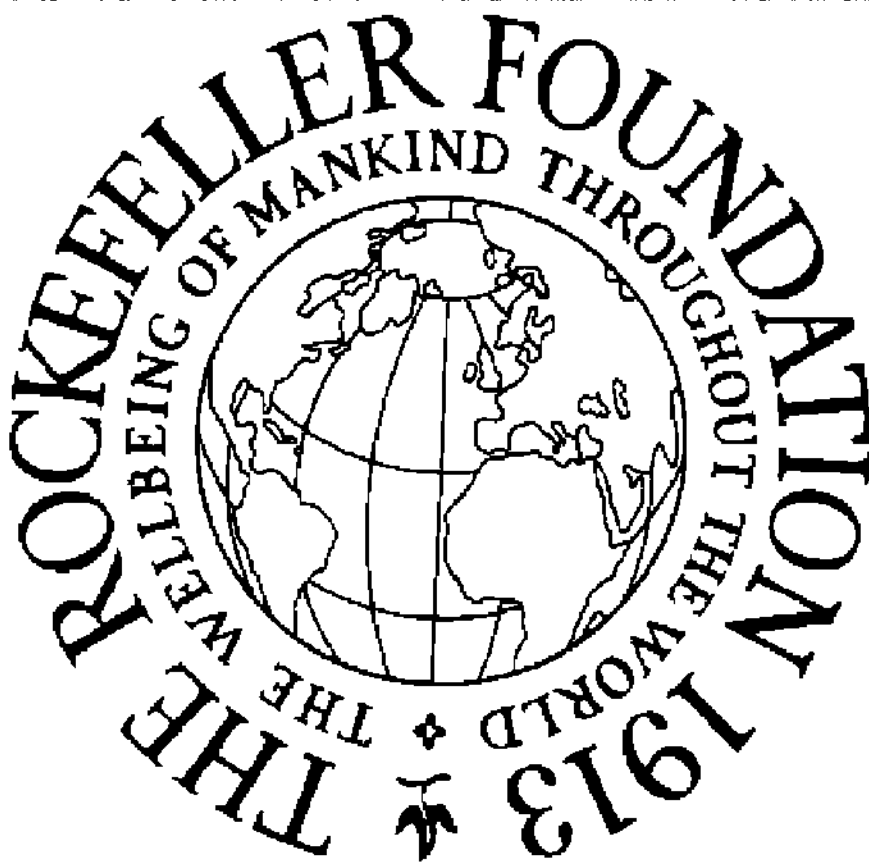


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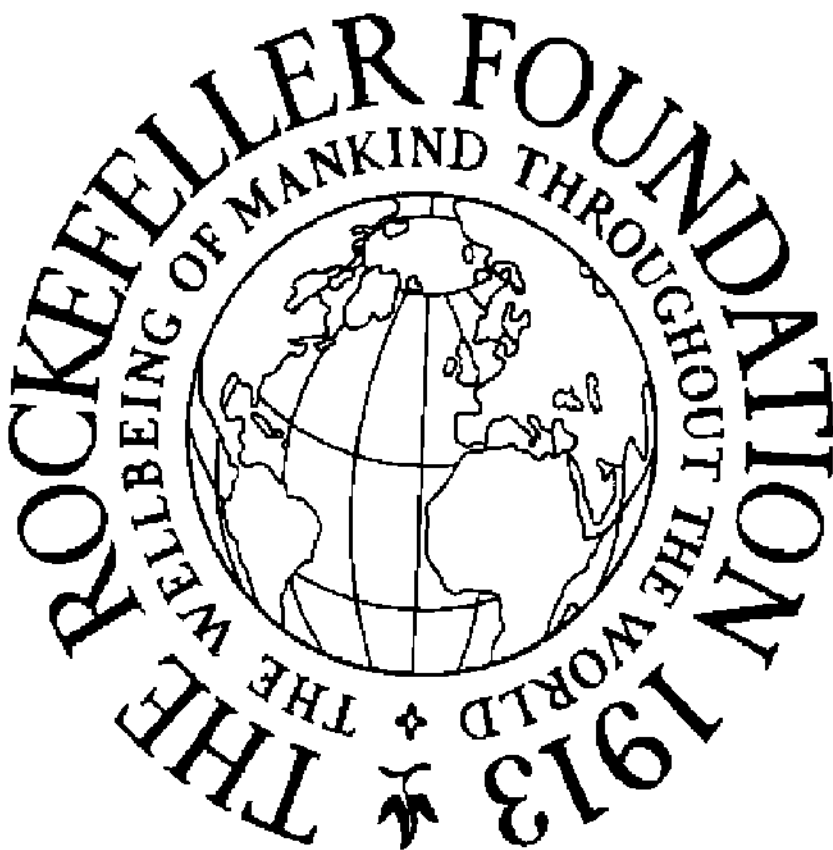


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Squad scouting for anopheles larvae during the Sardinian malaria control campaign. At left: a scout examines water caught in his dipping net



Photograph Excised Here



Photograph Excised Here

The Rockefeller Foundation  
Yellow Fever Commission to  
South America (1916).

Left to right:  
Mr. W. D. Wrightson,  
Major T. C. Lyster,  
Dr. Juan Gutierrez,  
General W. C. Gorras,  
Dr. Henry Rose Carter,  
Major F. R. Whitmore

The new synchronous speed control of the ultracentrifuge used for virus studies at the International Health Division Laboratories. Electromagnet circling the air turbine is controlled through electron tubes synchronized with signals from the Bureau of Standards

geographic range of the group covers nearly the whole world, including eastern Asia, Japan and many of the Pacific Islands, the United States, Central Africa, the United Kingdom, Central Europe, Colombia and Brazil. One might postulate that these agents are all derived from a common stock. Certainly they have many characteristics in common. As far as has been determined all are of approximately the same size. Many are capable of producing severe infections in man and his domestic animals. In the majority of cases, infected mosquitoes convey the diseases to man and domestic animals; however, in every instance some wild reservoir in nature must be assumed, just as in yellow fever. In yellow fever, monkeys play a prominent role. In St. Louis (and eastern and western equine) encephalitis, it would seem that various birds are involved. For Russian encephalitis, rodents as well as birds have been incriminated.

Still another point which these viruses have in common is that if a given species of mosquito is able to transmit one member of the group it can also, at least in the laboratory, transmit some others. *Aedes aegypti*, a widespread vector of yellow fever and dengue, is also able to transmit the equine encephalitis and Ilhéus viruses. *Aedes albopictus*, a known vector of dengue, can, under experimental conditions, transmit western equine encephalitis, Venezuelan equine encephalitis, Japanese B, West Nile and yellow fever viruses.

In studying the epidemiology of mosquito-borne virus diseases, one of the main problems has always

been to account for the persistence of the virus during the time of the year when mosquitoes are either absent or survive in very small numbers. In temperate zones this time corresponds to winter and in the tropics to the dry season. In a pure vertebrate-mosquito-vertebrate cycle, the virus must be maintained between seasons either in the vertebrate or in the mosquito. In the group of diseases under discussion, the vertebrate can probably be excluded, as no carrier state occurs: the infections are always acute, leading either to death or to recovery and lasting immunity. As for the mosquito, it can act as a reservoir only if an infected adult is able to remain alive during the winter or the dry season. Many species of mosquitoes which are known to be vectors, either in nature or in the laboratory, overwinter in the egg state. However, it has never been shown that a virus can be transmitted through the mosquito egg to the succeeding generation, so that these mosquitoes can probably be excluded as reservoirs of the virus during the winter or dry seasons.

With the viruses of louping ill and Russian encephalitis, this problem has been solved. In both infections ticks act as reservoirs because they are able to transmit the viruses through their eggs. This is a highly efficient mechanism from the point of view of the virus and must indicate a long evolutionary adaptation. Very good evidence has been obtained recently that a similar mechanism serves the three North American viruses: eastern and western equine



and St. Louis encephalitis. In these cases several species of mites have been incriminated.

For these five viruses, at least, an adequate mechanism for their maintenance in nature has been discovered. The mechanism involves not only a vertebrate, but, far more important, the transovarial transmission of the virus in the arthropod. Man and his domesticated animals are not directly involved in maintaining the virus cycle. In the case of louping ill and Russian encephalitis, man becomes infected by the bite of a tick which is normally parasitic on either sheep or wild rodents. In the case of the three North American viruses, man and his domestic animals probably become infected in some secondary cycle involving mosquitoes. The immunological relationship among all the viruses in the group makes it likely that the basic epidemiological pattern for their maintenance in nature is the same in all of them.

That all the recently discovered viruses currently under study do not belong to the above group is probable. The virus of Bwamba fever is much larger than the rest and is possibly transmitted by a small biting fly, culicoides. The Semliki virus, which is identical with the Kumba virus, may represent another group. Some of the South American viruses possibly form still another group. Neutralization and complement fixation tests indicate that Haemagogus A, Haemagogus B, Sabethes and Leucocelaenus are similar viruses and that they are probably related to the mouse encephalomyelitis group of viruses.

The fact that no severe clinical manifestations have been associated with some of the newly discovered viruses does not mean that they are of no importance. Human immunity to some of them is widespread, just as in yellow fever. While they may, like yellow fever, seem to produce a very mild disease, this mildness is not necessarily invariable. In 1940 a devastating epidemic of yellow fever occurred unexpectedly in the Nuba Mountain region of the Anglo-Egyptian Sudan. Similarly, until recently Japanese B virus was not known to exist in Korea. However, when that country was occupied by the United States during the Second World War, several members of the American forces came down with encephalitis due to Japanese B, and a subsequent survey among the Korean population revealed that immunity to this virus was very prevalent. Surveys of immunity to several of the newly discovered viruses have already been initiated.

#### THE CAMPAIGN AGAINST MALARIA IN SARDINIA

Since 1946 members of the International Health Division have participated in the Italian government's full-scale campaign against malaria in the Island of Sardinia. The campaign started out as a cooperative experiment to find out whether the leading native vector mosquito, *Anopheles labranchiae*, could be eliminated or at least substantially reduced in the island. Encouraged by the success of previous campaigns against disease-bearing mosquitoes in Egypt, Greece and South America, Italian authorities were

anxious to see what could be done in an island where malaria had been entrenched for centuries. Sardinia had a long and unenviable history as the most malarious area of Italy. A rate of some 350 cases of malaria per 10,000 population was reported from Sardinia, whereas the rate for Italy as a whole stood at 25 per 10,000. Malaria was considered a principal factor in impeding social and economic progress and possibly accounted for the relative sparseness of the island population.

The Rockefeller Foundation, which on invitation from the Allied Control Commission had previously collaborated in malaria work in southern Italy and the Pontine marshes, was asked to supply supervisory and technical personnel to direct the campaign. Funds and a large supply of DDT, jeeps and other equipment were forthcoming from the United Nations Relief and Rehabilitation Administration and later from the Economic Cooperation Administration.

Together with Dr. A. Missiroli, one of Italy's leading experts on malaria, International Health Division personnel mapped out a plan of action. In spite of the wild and mountainous character of the terrain, Sardinia seemed to present a favorable site to test out the techniques for mosquito eradication. In area the island measures little more than 9,000 square miles, and physically speaking it is cut off from the rest of Italy, the nearest point on the mainland being 125 miles away.

Following the establishment in 1946 of an official organization known as the Ente Regionale per la

Lotta anti-Anofelica in Sardegna (ERLAAS), the campaign was launched with an island-wide entomological survey. As had been expected, *A. labranchiae* proved to be the only important vector of malaria. This mosquito was found to breed in a wide variety of habitats over practically all of the island from sea level to almost 3,500 feet. While it prefers slow moving streams and rivers, isolated pockets of water and ground pools, it can apparently breed in almost any collection of water. Its inclinations are toward water with sunny exposure and considerable amounts of algae or other vegetation.

The year 1947 was devoted to assembling personnel and to training them in the techniques of experimental residual spraying campaigns and in field larviciding. With the exception of about a dozen top technical personnel, all of the staff were recruited in Sardinia. It was soon found that residual spraying of houses was best done during the cold months to get at overwintering female *labranchiae*. A five per cent DDT solution was generally used. At the outset of larviciding operations individual larviciders were made responsible for given areas, or sectors, and their work was done on a weekly cycle. The larvicide, usually a mixture of 2.5 per cent DDT and 0.5 per cent triton in fuel oil, was applied with small hand pumps or shoulder pumps as a rule, but in special circumstances the ERLAAS workers used airplanes and helicopters.

At the peak of operations, that is, during the all-out residual spraying and larviciding operations in 1947 and 1948, over 32,000 workers were employed. In

addition to culverts, bridges, mine shafts and caves, 337,000 buildings were thoroughly sprayed. For the larviciding operations, no less than 5,300 sectors were outlined, with every single water source scheduled for treatment and inspection. More than 250 jeeps and other types of automotive equipment were required, as well as hundreds of tons of DDT and thousands of tons of fuel oil.

Because of the mosquitoes' proclivity for vegetation, an extensive program of clearing land and draining swamps had to be carried out in preparation for thorough larviciding. Many miles of ditches were constructed with ditching machinery and dynamite. Brush was often cleared with flame throwers.

As a result of these extensive campaigns, *labranchiae* soon became very scarce. In 1949, the first year of the mopping-up period, trained scouts uncovered specimens of *labranchiae* only 573 times in the course of about ten million inspections. In 1950, after intensive work in the infected areas, *labranchiae* were found only 431 times and in much smaller numbers.

Malaria rates, too, have rapidly diminished. From 10,000 primary cases in 1946, the number dropped to 3,000 in 1947, 300 in 1948, 1 in 1949 and none in 1950.

The intensive malaria campaign was formally ended in October 1950. A small group of the ERLAAS staff remained, however, to complete a comprehensive report describing every phase of the campaign, analyzing techniques and pointing out whatever lessons there may be. The members of this staff will

also assist the Sardinian health authorities to organize a permanent insect control and quarantine service.

At a total cost of a little over \$12,000,000, of which The Rockefeller Foundation contributed about \$500,000, there has been completed a successful experiment demonstrating the possibility of reducing to harmlessness an indigenous mosquito species. The transmission of malaria has been completely suppressed in the island, and nearly 100,000 acres of marshland have been brought into use for agriculture or pasturage. What all this can mean in the way of lessening unhappiness and human misery is hard to say, but it is surely a step forward.

#### THE PROGRESS OF SANITARY ENGINEERING IN EUROPE

European engineers have long addressed themselves to the problems of environmental sanitation. They have made notable contributions in the design of sanitary engineering works and in research on particular questions. Today, however, many countries face critical problems in water supplies and sewage disposal. Most government institutes and university departments are concentrating upon the improvement of particular processes employed locally, to the exclusion of a more general attack. There is a growing awareness among the engineers of Western Europe that the potentials of the research laboratories are not fully exploited. More and more there is agreement that it is necessary to bring together the men who are interested in the control of environmental hygiene to

facilitate exchange of information, correlation of research and cooperation of all professional workers in public health.

While important efforts have been made to correct known defects in financially able countries and to extend such techniques to less favored areas, from a world point of view the application of the knowledge presently at the disposal of sanitary engineers falls far short of the ideal. There is need for more fundamental probing of the environment not only with hardened scientific tools but also with new techniques borrowed from other disciplines, thus making it possible to take advantage of the continually advancing front in biology, chemistry and physics.

It might seem to the layman that the tasks of providing safe water and disposing of liquid wastes have been solved from a research point of view and that a wider extension of these facilities is now the leading requirement. Water, like air, soil and heat, however, should not be taken for granted. In many parts of the world water threatens to become the limiting factor in the environment. In some localities the problem of balancing demand and supply with re-use and disposal reaches such dimensions that some experts believe that it should be approached on a national if not an international basis.

Another side of the picture is that water is an important vehicle of disease. Perhaps three-quarters of the world's population is still without sanitary safeguards against infection. Parasitic diseases continue to be serious obstacles to the physical, economic and social health of the world. Malaria, for example, still

affects some 200 to 300 million individuals each year. But with present knowledge the disease can be eliminated at an economically feasible cost from any community which has the will to do so and which can develop the organized community effort and the trained staff required.

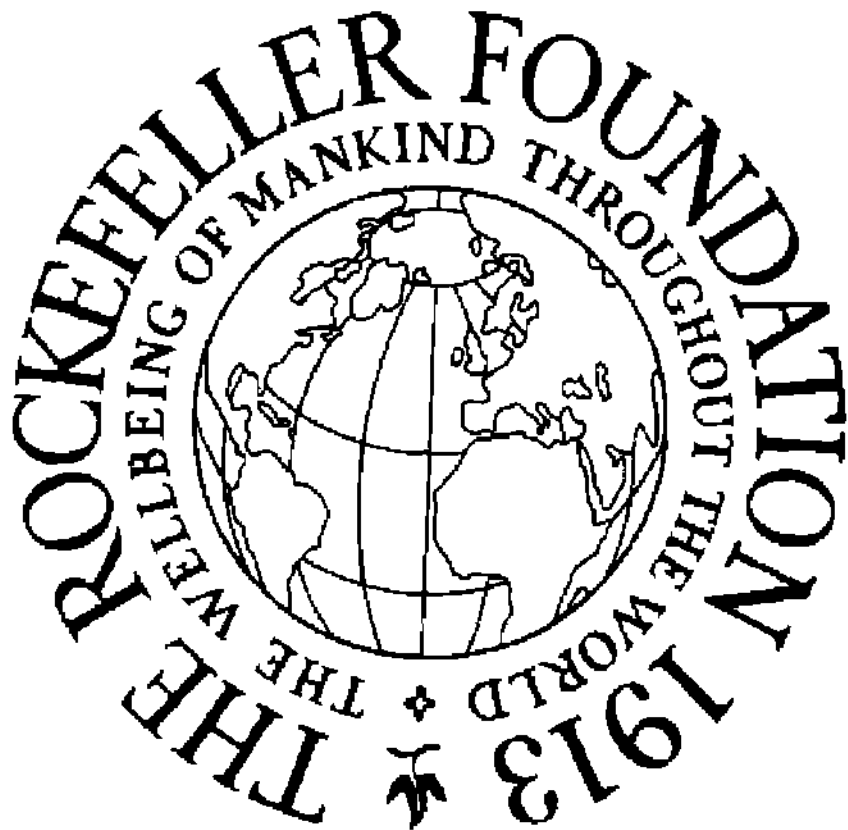
Paul F. Russell, in the introductory chapter to *Parasitic Infections in Man*,\* writes, "Apparently it is possible to become so interested in etiology, pathology, biochemistry, or treatment of a disease that there is no time to think about practical prevention. Yet a new era in parasite vector control is at hand. With such compounds as DDT, chlordane and benzene hexachloride, it is now possible to destroy certain arthropod hosts on a wide scale, effectively and economically. If to the sanitary disposal of sewage and waste products and the provision of safe water in a community is added the routine use of the new insecticides prompt and certain relief from some of the most serious parasitic diseases may be had at a price not too high for even economically depressed areas."

The priority of environmental sanitation is now recognized by a number of public agencies, including the World Health Organization (WHO). In the hope that the special types of services it is in a position to offer will give additional impetus to European progress in this field, the International Health Division has also made engineering control of the environment one of its primary interests.

During 1950 Dean Gordon M. Fair, chairman of the Division of Engineering Sciences at Harvard Uni-

\* *Parasitic Infections in Man*, edited by Harry Most. Columbia University Press, New York, 1951.





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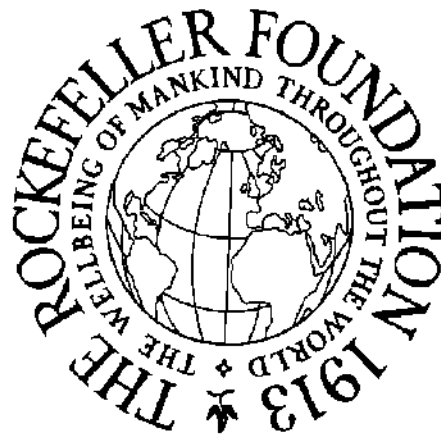
The Aconcagua rural health service in Chile encourages rabbit and poultry raising projects, demonstrates vegetable-gardening methods to teen-age groups



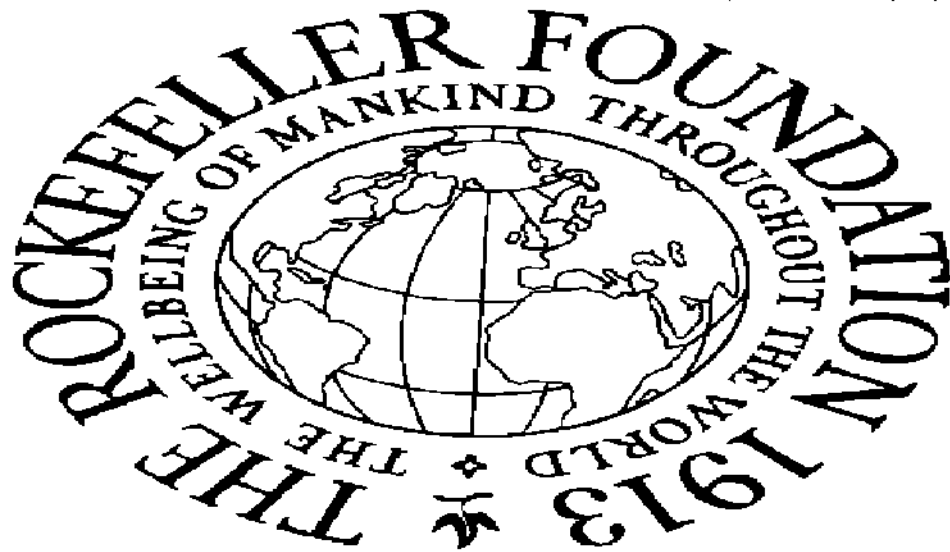
Rural laboratory  
for diagnosis of  
hookworm disease in the  
Dominican Republic

Photograph Excised Here

Mobile Laboratory of New Brunswick's Sanitary  
Engineering Division helps to inform public about  
dangers of contaminated milk and water



Photograph Excised Here



Photograph Excised Here

Sanitary engineering works in the  
Netherlands: an experimental  
activated sludge plant at Tillburg

versity and scientific consultant to the International Health Division, together with Dr. Robert P. Burden, one of the Division's engineering consultants in Europe, visited public health engineering schools and government agencies in most of the countries of Western Europe. Specific aid for research and teaching efforts is being given in Denmark, England, the Netherlands, Switzerland, Italy and Yugoslavia. At the request of WHO, Divisional representatives participated in the first seminar for European public health engineers, held in The Hague in 1950.

In the Netherlands considerable work in public health engineering is undertaken by the Applied Research Council, the Technical University of Delft and the Institute of Preventive Medicine in Leiden. The council is sponsoring basic research on the activated sludge process in sewage treatment at the Technical University, and the latter, with the collaboration of the International Health Division, has established a course of specialization in sanitary engineering under Professor W. F. J. M. Krul, director of the State Institute of Water Supply and chairman of the council's Research Institute for Public Health Engineering. To insure well-rounded training for public health personnel and to prevent duplication of effort, the Institute of Preventive Medicine is collaborating closely with both teaching and research personnel at Delft. The institute last year expanded to become an accredited school of public health.

Similar arrangements are proving highly successful at the Imperial College of Science and Technology

and the London School of Hygiene and Tropical Medicine in Great Britain. Professor A. J. S. Pippard, professor of civil engineering at the Imperial College and general director of the new graduate course in public health engineering, reports that about 40 per cent of the work is given at the London School and the rest at the Imperial College. The advisory committee created to supervise this project comprises representatives of most of the leading agencies concerned in the instruction or in the utilization of public health engineers in Great Britain.

In Denmark the Danish Technical University in Copenhagen has taken the lead in developing teaching and experimental facilities in public health engineering. Dr. K. Erik Jensen, who occupies the chair in public health engineering, is one of the leading Danish experts on methods of treatment of sewage and industrial wastes. With the aid of an International Health Division grant, Dr. Jensen has been able to strengthen his department and to obtain adequate equipment for research projects.

The Institute of Hygiene and the School of Engineering in Zagreb, Yugoslavia, are also proceeding with a new program to raise the quality of instruction in public health engineering. In promoting the development of public health services in Yugoslavia, the institute has always relied heavily on environmental sanitation in carrying out rural hygiene and municipal sanitation programs. The aim at present is to integrate the available training facilities in order to provide a full academic year of specialization in

this field. Again, reciprocal arrangements have been made between the Institute of Hygiene and the School of Engineering. Professor M. Petrik, who is in charge of this project, received a Master's degree in sanitary engineering from Harvard University. He is a member of the Expert Committee on Environmental Sanitation of WHO. Funds for equipment and special teaching expenses over the next three years have been supplied by the International Health Division.

The Federal Technical University in Zurich, Switzerland, one of Europe's outstanding engineering institutions, received a small International Health Division grant for investigations on the treatment of sewage and the recovery of waste products at the Institute of Water and Sewage, which is affiliated with the university.

At the Universities of Rome and Naples, which have also received International Health Division support for the development of instruction in public health engineering, good beginnings have been made. At Naples a small laboratory and field station have been established, while in Rome a series of lectures is now offered to engineers interested in public health.

#### GOVERNMENT HEALTH SERVICES IN LATIN AMERICA

During the past few decades the ministries of health and the medical faculties in Latin American countries have taken on increasing responsibilities in developing better health services for the people whom they serve.

Some of their efforts have received aid from international organizations with programs in health, medical care and medical education. One valuable type of outside backing has been for fellowships and travel grants to give health personnel an opportunity to expand their professional training. International congresses and meetings have helped the interchange of ideas among countries with common problems. Opportunities for the exchange of teaching staff and students are increasing. These developments have had a cumulative effect in enlisting stronger national support for existing health organizations and for the establishment of additional special services.

The International Health Division has operated in the Latin American field for over 30 years. Its activity in helping to shape national health programs in Latin America in many cases originated in projects for the control of specific diseases, initiated on the request of individual governments. These projects, essentially demonstrational in nature, were often taken over and expanded by official organizations, created by the state and supported by the people. In the past year or so the International Health Division has been asked to take part in several new long-term plans to improve administrative procedures and raise the quality of national health services in a number of Latin American countries.

At the request of health authorities in the Dominican Republic, International Health Division personnel recently collaborated in a comprehensive survey of health conditions and drew up recommendations for an effective attack on the island's endemic

disease problems. To demonstrate the practicability of the full-time principle for health department personnel a Division representative has for the past two years cooperated closely in the operation of an endemic disease control service. Present emphasis is on parasitic diseases.

The reorganization program of the Peruvian Ministry of Health continues to progress in adopting modern principles of health department operation. Through a special Division of Development of Program, combining a number of projects aided by the International Health Division over a period of years, attention is given to problems of full-time service, adequate salaries and training facilities for health personnel, the decentralization of authority in the administration of programs and the development of opportunities for experimental studies and peripheral interests. One of the ministry's leading concerns is the training of personnel to man new rural health services. The Ica Departmental Health Service, which has been in operation for some years and includes most of the detailed branches of hygiene, technical and administrative preventive care, preventive medicine and curative medicine, serves as a training base. In 1950 two anthropologists trained in the Departments of Anthropology at Harvard and Yale Universities were asked to help establish criteria for the selection and preparation of personnel to deal with the important task of educating the local people in good health habits.

In Chile, International Health Division representatives have been of assistance in establishing a number

of government health projects over the past eight years. In the belief that the over-all development of national health services could best be aided through combined demonstration and training projects, a community health center was set up in the city of Santiago in 1942, and about the same time a program of nursing fellowships was started. In 1943 a school of public health was organized, and in 1945 a tuberculosis studies program was set up in the health center. In 1947 an experimental rural health service was begun in the Province of Aconcagua. During 1950 the health department has taken steps to build up the national department of sanitary engineering.

The Division of Rural Endemic Diseases of the Bolivian Ministry of Health is making good strides in developing effective services for the control of yellow fever, malaria, plague, typhus and hookworm. Foundation interest in Bolivia's endemic disease problems began as far back as 1932, when a severe outbreak of yellow fever caused the government to request assistance from the International Health Division. A more extensive outbreak occurred in 1936. Then in 1950, after a lapse of 14 years, the disease again became severely epidemic in most of the known endemic areas and swept into a new region between the Azero and Pilcomayo rivers. As the people in this region had not been exposed to yellow fever, the majority were highly susceptible, and there were many fatalities. Employees of the yellow fever service, reinforced by members of the other services of the division, fought valiantly, under most difficult



conditions, to vaccinate as many people as possible. Normally, malaria control is the largest activity of the Division of Rural Endemic Diseases.

In Mexico a number of projects in disease control and investigation and in public health training are administered jointly by the government and the International Health Division. Their purpose is to further the development of new public health methods and give them adequate field trial in various parts of Mexico. Much stress is placed on the training of public health personnel to fill posts in the local health units established throughout the country. International Health Division staff members, together with Mexican personnel, are also devoting substantial efforts to the investigation of the malaria problem in several sections of the country, from the wet coastal regions of Guerrero to the desertlands of Baja California and the high altitudes of the Valley of Mexico.

#### PUBLIC HEALTH EDUCATION AND MEDICAL CARE

From 1913 to 1950 the International Health Division spent 33 million dollars on public health education, more than two-thirds of this for buildings, equipment and endowment for schools and institutes of hygiene and public health, including schools of nursing. In the early days of the International Health Division, public health education, both at home and abroad, was in a relatively undeveloped state. One of the first difficulties that this Division had to cope

with was the almost total lack of specially trained professional public health personnel.

The Johns Hopkins School of Hygiene and Public Health, which opened its doors in 1918, received substantial support through the International Health Division of The Rockefeller Foundation. The first school of public health to be established on foreign soil, also with the aid of Foundation funds, was that of São Paulo, Brazil. Since then the Foundation has assisted some 20 schools and institutes of hygiene in various parts of the world. About the same number of schools of nursing have been aided, especially in connection with the development of public health nursing programs. A feature of this aid given to schools of public health has been the stress on having them provided with training areas where students and future leaders in public health could obtain experience in field work.

An important branch of the aid given throughout the years in public health education has been the fellowship program. Over six million dollars has been expended for fellowships, travel of government officials and teachers of public health, and the training of health workers. The total number of International Health Division fellows, including nurses, was 2,566. Promising young men and women, selected with the advice of government agencies and university departments, were given an opportunity to study and do research in whatever countries and institutions best suited their needs. The Rocke-

feller Foundation during the duration of the fellowships, which as a rule is not less than a year, paid the living expenses of these fellows, their tuition and laboratory fees, and where necessary provided an allowance for their dependents. The fellowships were granted on the condition that the recipients return to work in public health in their own countries. There is evidence that many of these former fellows have advanced to positions of leadership in many parts of the world.

Today medical schools and schools of public health, although much better able to cope with standard demands for public health personnel than formerly, are confronted with new and increasing demands occasioned by world-wide trends in the direction of preventive medicine and medical care. Many governments are now assuming responsibility for nation-wide medical care programs. The success of these programs will depend on whether adequate training for the new tasks is provided by the organizations in charge of public health education.

The International Health Division during 1950 continued to give aid to a number of schools of public health for research and training in preventive medicine as well as to experimental health centers, many of them affiliated with university departments as field training centers. Aid has also been given to a number of special organizations, such as the Subcommittee on Medical Care of the American Public Health Association, the Educational Trust

of the American Hospital Association and the National League of Nursing Education.

Two years ago, in recognition of the expanding scope of public health and the merging of public health and preventive medicine throughout the world, Johns Hopkins University took stock of its interests in the field and appointed a medical development committee to coordinate the activities of the School of Hygiene and Public Health, the School of Medicine and the Johns Hopkins Hospital. These three organizations, now known as the Johns Hopkins Medical Institutions, under Dr. Lowell J. Reed, are enlarging and coordinating the Johns Hopkins medical interests in the light of recent developments in medical care and preventive medicine. Like Toronto's School of Hygiene, Johns Hopkins maintains close associations with a large city health center. By agreement with the Baltimore City Health Department, students in medicine, public health and nursing at Johns Hopkins utilize the Eastern Health District of Baltimore as a research and training field. The Rockefeller Foundation is currently assisting in these administrative developments and in addition is supporting several specialized projects.

In Canada the extensive planning for medical care which has been undertaken by both official and voluntary agencies has created an urgent demand for trained leadership. To meet this need the School of Hygiene of the University of Toronto last year set up a special program of instruction and studies in medical care administration. The course is in-

tended primarily for physicians who wish to elect a career in medical care administration but is also open to other candidates for the Diploma in Public Health who may be specializing in different fields. The course complements the already established program in hospital administration and receives modest International Health Division aid. Other Toronto projects to which the International Health Division contributes include a nutrition study and the East York-Leaside Health Unit, which is used as a practice field by the university.

A medical care course receiving support at the School of Public Health of the University of California is designed to give students a comprehensive view of the entire field of public health. It devotes considerable emphasis to the social and economic background of medicine and public health and to the current trends and problems in the medical care field. Beyond this, students have an opportunity to elect seminars and special courses in the field of medical care administration.

In 1948 there came into being in Great Britain a National Health Service as an ancillary to the general system of social insurance. Under it, free medical care became available to all the inhabitants of England, Wales, Scotland and Northern Ireland. An organization was set up to provide a coordinated hospital service for these regions; personal health services, however, remained the responsibility of the local authority. It was foreseen that the health center would be the coordinating agency for specialist and

general practitioner services and health services. Pending the establishment of large numbers of health centers, efforts are concentrated on developing trained leadership and on promoting experiments and demonstrations, all of which are needed to work out model techniques for effective operation. Two such projects, one in London and one in Manchester, have received International Health Division grants.

The London School of Hygiene and Tropical Medicine, one of the leading schools of its kind in Great Britain, is making every effort to attract promising candidates into public health careers and to reorient its program toward the new problems. Included in its current activity is a plan to set up an experimental area for testing new public health programs. For each specific public health problem investigated, a remedy within the economic resources of the local authority will be sought. While the aims and organization of the testing area will be primarily experimental, the fact that the work is to be conducted by individuals with teaching responsibilities will make the area eminently suitable for training purposes.

In Manchester, university authorities are engaged in the establishment of an experimental health center which can take on the job of working out the techniques best suited for bringing health care to the community. One of the center's leading concerns is the coordination of services supplied by hospitals, health services and general practitioners. Initially the health center has been included in the Department of Social Medicine of the university, and five

general practitioners have agreed to participate in the experiment.

In Finland the past seven years have brought into existence extensive legislation envisaging a systematically planned organization for medical care and public health. The medical school in Helsinki, now being rebuilt, forms the nucleus for a modern medical center. Included in the new program is an Institute of Industrial Hygiene. A joint enterprise of government, industry and labor, the institute has undertaken to develop techniques for the improvement of mental and physical health, with a consultant service to industry on problems of occupational medicine and hygiene. When the million-dollar building now under construction is completed, the institute will also be expected to serve as the main industrial health center for government offices and small industries in the Helsinki area. Current International Health Division assistance is for the purchase of research equipment for the new building.

An important development in Finland's program is the establishment of a demonstration training area in part of Uusimaa Province adjoining the city of Helsinki. Under the present director, Dr. Leo A. Kaprio, who received his Master of Public Health degree at Johns Hopkins under an International Health Division fellowship, the area is already filling the urgent need for a practice field in which organizational techniques and training patterns can be adequately demonstrated to future health personnel. The Uusimaa center has received initial support from the International Health Division.





# **THE MEDICAL SCIENCES**

# THE MEDICAL SCIENCES STAFF

During 1950

*Director*

ALAN GREGG, M.D.

*Associate Directors*

ROBERT S. MORISON, M.D.

WADE W. OLIVER, M.D.

ROBERT R. STRUTHERS, M.D.<sup>1</sup>

<sup>1</sup> Appointed Associate Director effective April 5, 1950.

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## THE MEDICAL SCIENCES

**A**S in previous years, the program in the medical sciences in 1950 emphasized psychiatry, neurology and physiology, both in this country and abroad. Fourteen grants, totaling \$557,850, were made for research and teaching projects in this category. Among them were appropriations for the establishment of a pioneer clinic for child guidance in Denmark, for the establishment of a new institute in Germany devoted to the encouragement of psychosomatic medicine in that country, for a project combining the genetic and psychological approaches to the study of intelligence and emotional variation, and for research in parapsychology.

In the field of medical education there were three grants, of which the largest was the \$100,000 allocated to the development of a program of postgraduate medical education in certain rural areas and towns in Massachusetts. A grant of \$30,000 provided continued support for work in the history of medicine, and an appropriation of \$21,350 furnished funds toward the production of a critical catalogue of medical motion picture films, which will be the first compendium of its kind.

The fields of endocrinology and human heredity were represented by two grants each, amounting to \$41,200 for endocrinology and \$40,500 for human

heredity. The remaining \$450,000 of the \$1,240,900 appropriated in the medical sciences during the year was devoted to grants in aid and fellowships, as follows. The 1950 grant-in-aid fund was augmented by \$30,000, and \$120,000 was reserved for grants in aid in 1951. The sum of \$200,000 was set aside for medical sciences fellowships to be awarded and administered by the Foundation itself in 1951, and the National Research Council and the Medical Research Council of Great Britain each received \$50,000 to support fellowships in the medical sciences (see pages 297-301).

### PSYCHIATRY, NEUROLOGY AND PHYSIOLOGY

UNIVERSITY OF HEIDELBERG

INSTITUTE OF PSYCHOSOMATIC MEDICINE

The intellectual and social isolation and paralysis imposed upon Germany by Nazism and the recent war took a toll of every field of human activity within that country. Medicine did not escape. Teachers of medicine who openly opposed the political authorities between 1933 and 1944 were in many cases supplanted by Nazi sympathizers or appointees. These in turn were removed during the denazification procedures after 1945. The survivors, many of them men of distinction, character and ability, but no longer young, together with the younger men who did not fall victim to the physical dangers of the war, are devoting themselves more commonly to the effort of recapturing and recreating what has been lost than to

pioneering in new directions. It cannot be claimed that between the two world wars German medical education was characterized by an interest in the emotional components of disease. In the main, German medical education focused the student's attention upon disease in a patient rather than on the patient with a disease.

However, there are medical men in Germany who realize the desirability of modifying the present orientation of their profession and who recognize the importance of developing the discipline of psychosomatic medicine. One of the groups working most actively in that direction is the group at the University of Heidelberg headed by Professor Viktor von Weizsäcker. They have spearheaded the establishment of a new Institute of Psychosomatic Medicine at the university in an attempt to integrate the emotional, psychological and physical aspects of the diagnosis and treatment of disease.

The main functions of the Institute of Psychosomatic Medicine are to provide an outpatient clinic for psychosomatic aspects of various diseases, including tuberculosis, allergic disturbances, gynecological disorders and excessive tension; to maintain a ten-bed inpatient department for exploration and treatment of patients sent by other clinics; to develop research in psychosomatic medicine, including psychoneuroses and the psychological aspects of social medicine; and to develop the field of psychological testing. Another aim of the new institute in Heidelberg is to train young men in psychiatric methods,

and above all in the psychosomatic approach to medicine.

Dr. Alexander Mitscherlich, Professor von Weizsäcker's assistant and one of the few men in Western Germany offering psychoanalytic training to young doctors, is the director of the new institute. The University of Heidelberg has provided quarters for the institute and the government of Baden has furnished funds for renovation and equipment of the quarters and for some staff salaries. In 1950 The Rockefeller Foundation contributed the sum of \$56,000, available for three years, toward establishment of the institute; the money is chiefly for library books, equipment, assistants' stipends and training and travel expenses.

#### UNIVERSITY OF COPENHAGEN

##### CHILD GUIDANCE CLINIC

With the aid of a grant from The Rockefeller Foundation, and with the cooperation of the Danish Ministry of Education and Ministry of Social Welfare, the University of Copenhagen in 1950 established its Child Guidance Clinic. A joint venture of the Departments of Psychiatry, Pediatrics and Psychology, the new center is one of the first clinics of its kind in Europe launched and operated under university auspices.

In Denmark, as in many other countries, the need to develop personnel and facilities for putting into practice the principles of child psychology and psychiatry has long been felt. The university has therefore organized the Child Guidance Clinic to serve the dual



purpose of providing both practical treatment for children with emotional problems and training for young psychologists; as the work of the clinic becomes established, research will occupy a larger role in the program. Also, the Ministry of Social Welfare plans to utilize the clinical services of the Copenhagen unit as a model for about 100 similar units that it has projected for Denmark as a whole.

Miss Bodil Farup, a psychologist and former Foundation fellow, directs a clinical and teaching staff that includes psychologists, social workers, a full-time pediatrician and a full-time psychiatrist. Students in training observe and assist this group in handling the cases of children who come to the clinic from public and private agencies in the city. The clinic also offers some 200 students an integrated course in all phases of child development. The training program aims to prepare new personnel to fill the ever-increasing calls for child guidance workers and to supply the needs of the clinics proposed by the Ministry of Social Welfare.

The Ministry of Education and the Ministry of Social Welfare are furnishing some of the funds required to start the clinic. The Rockefeller Foundation's 1950 grant in the amount of \$63,000, available for five years, is intended to help meet expenses for staff maintenance and for equipment.

#### DUKE UNIVERSITY PARAPSYCHOLOGY

In his book, *New Frontiers of the Mind*, Dr. Joseph B. Rhine, director of the parapsychology laboratory

at Duke University, Durham, North Carolina, defines parapsychology as a special branch of psychology dealing with problems which do not appear to fit the conventional view of psychology but which, nevertheless, seem to have some factual basis. The aim of workers in this field is to find out how sound the facts reported are and, if sound, what explanation can be given for them.

The staff of the parapsychology laboratory at Duke consists of a small group of psychologists with statistical training. For the past 15 years they have carried on controlled studies in an attempt to understand two types of phenomena not explicable by any generally accepted theories of communication or statistics. These two main groups of unexplained phenomena are: 1) There seem to be persons who possess a repeatedly demonstrated ability to perceive in some way the identity of cards they cannot see or touch. This form of perception has come to be known as extrasensory perception (ESP). The recorded ability to name the cards correctly exceeds statistical probability in such measure as either to invite study or to challenge our present reliance on statistical proof. 2) The ability is an individual one, and in some way a function of personality and physical condition.

No explanations of the phenomena of extrasensory perception that obviate the desirability of further study of this subject have as yet been advanced. A three-year grant of \$30,000 has been made by The Rockefeller Foundation to Duke University to enable Dr. Rhine and his staff to continue their studies,

especially with reference to variations in extrasensory abilities of subjects as related to personality structure and bodily health. The appropriation is made on theory that the sober and steady study of important and unusual abilities in certain human beings is worthy of support even if there is no present prospect that the final truth concerning these abilities can soon be established.

ROSCOE B. JACKSON MEMORIAL LABORATORY  
GENETIC PSYCHOLOGY

Rockefeller Foundation support to the Roscoe B. Jackson Memorial Laboratory, Bar Harbor, Maine, for studies on genetic factors of intelligence and emotional variation in mammals was first granted in 1945 with a five-year appropriation of \$282,000. In 1950 support for this research program was renewed with an allocation of \$150,000, available for a three-year period.

The staff of the Jackson Memorial Laboratory includes representatives of the basic disciplines necessary for a broad attack on the genetics of behavior. Dr. Clarence C. Little, director of the laboratory, specializes in genetics; two of his key collaborators are Dr. John P. Scott, an animal psychologist, and Dr. John L. Fuller, an experimental physiologist. The group has chosen the dog as the primary object of study, for a number of reasons. Dogs exhibit a wide assortment of behavior traits which vary markedly from strain to strain. Such diversity within a single species provides a unique opportunity to analyze the

role of heredity in the determination of behavior. The requisite cross-breeding is possible and convenient because, with dogs, mating can be arranged for purely scientific purposes, and the generations succeed one another rapidly enough to allow genetic analysis within a reasonable time.

Dogs also offer another important advantage. They are cheaper to raise than the great apes, yet some similarities between canine and human behavior suggest that careful studies of the dog may throw some light on fundamental aspects of human personality. Like the human being, the dog has a relatively long period of maternal dependency and, in the natural state, by preference belongs to a group dominated by one or more leaders. Affectionate, cooperative, highly social and responsive, the dog is in many respects the ideal animal for testing hypotheses of personality development derived from clinical observation of the human being. Within a rather wide range of selection the preliminary studies have resulted in the choice of basenjis, beagles, cocker spaniels and wire-haired fox terriers as the most suitable breeds for future investigations.

The physical arrangement of the laboratory at Bar Harbor permits the staff to keep the experimental animals under close and constant observation and at the same time to vary the environmental situation as desired. The project is housed in what was formerly a private stockfarm, and the surrounding grounds have been divided into large enclosures. Dr. Little and his colleagues can thus watch the results of such

procedures as transferring some of the members of one litter to another mother of quite different breed and temperament; they can also see what happens to dogs who receive intensive and continuous training as opposed to those who receive little or none. Some interesting facts have already turned up as a result of the initial effort to identify and control environmental influences for the purpose of studying them later in relation to hereditary factors. For instance, it appears that, contrary to classic psychoanalytic tenets, the earliest time at which painful emotional experiences influence later personality development does not come, in the dog at least, until several weeks after birth. The various ways that different breeds of dogs react to confinement, and the ways that they accomplish the nursing and weaning processes, have provided significant hints as to the operation of heredity.

There has been a great deal of research in both animal psychology and genetics, but the undertaking at the Jackson Memorial Laboratory is a well-staffed project devised deliberately to connect these two fields. In so doing the Bar Harbor research program gives promise of contributing facts and hypotheses applicable to the study of personality development and behavior in human beings.

STANFORD UNIVERSITY  
PSYCHOLOGY

Thirty years ago Professor Lewis M. Terman of Stanford University began a long-range study of 1,400 unusually intelligent children. The children,

then about ten years old, on the basis of comprehensive intelligence tests were rated among the top one per cent of the child population. The careers of the children have been followed closely through the intervening years. The most recent extensive survey was made ten years ago, and a smaller study was carried out five years later. The findings of the first 25 years were incorporated into a book entitled *The Gifted Child Grows Up*.

By now the life patterns of these gifted youngsters have assumed shape, and the time is favorable for a definitive assessment of their achievements. One thousand of the original group still living in California have expressed their willingness to participate in continuing studies. Professor Terman, in association with Professor Quinn McNemar and a staff of trained psychologists, has prepared a series of exhaustive tests to help determine to what degree the members of the study group have fulfilled their early promise of success.

Psychology, education, sociology and medicine all stand to profit from learning what role the gifted person can play in our society. First there is needed a factual answer to the question, "What happens to the unusually intelligent young person in our society?" That answer can help clarify the more challenging query, "What helps and what hinders an unusually gifted young person in making the most of his abilities?" Dr. Terman, in commenting on studies such as the one at Stanford, states ". . . the fruits of potential genius are indeed beyond price.

The task ahead is not simply that of finding how gifted children turn out; it is the problem rather of utilizing the rare opportunities afforded by this group to increase our knowledge of the dynamics of human behavior, with special reference to the factors that determine degree and direction of creative achievement.”

The present study is designed to determine the personal and intellectual changes which the subjects have undergone in the past ten years, with special emphasis on the marital adjustments during those years. Tests are all conducted by interviews. While each individual, of course, supplies the major part of the information, there are additional interviews with parents, relatives and associates in order to provide a complete picture. In conjunction with this research Professor Terman and his staff are also testing several hundred children born to members of the original study group.

Professor Terman and his co-workers have made provision to follow the subjects of their study for as long as possible, perhaps even for another 25 years. The Rockefeller Foundation in 1950 contributed \$11,000 toward expenses of the work now in progress.

PRINCETON UNIVERSITY  
PSYCHOLOGY OF PERCEPTION

Productive studies and tests dealing with the psychology of perception are going forward at Princeton University, New Jersey, in collaboration with Professor Adelbert Ames, Jr., who began these studies some 20 years ago when he was in the Department of

Physics at Dartmouth College. Professor Ames, now retired, continues this research in collaboration with Dr. Hadley Cantril and a group of young psychologists in the Department of Psychology at Princeton University.

Present work emphasizes factors involved in the perception of movement, a logical development from earlier research on space perception. Unusual tests devised by Professor Ames are employed to measure the extent to which past experiences enter into the ability to perceive the objective world, and the validity that can rightfully be attached to observations and inferences of many sorts. The testing methods and the findings, applicable to many fields of learning, have proved to be of considerable interest to artists, psychologists and educators.

The Rockefeller Foundation supported basic studies on visual perception at Dartmouth College under Professor Ames from 1934 to 1941 and in 1948 gave \$45,000 to Princeton University for three years of research on the psychology of perception. In 1949 and again in 1950 the Foundation allotted \$25,000 to Princeton University for this work carried on in collaboration with Professor Ames.

## COLUMBIA UNIVERSITY

### BRAIN CHEMISTRY

The major focus of the biochemical research program directed by Dr. Heinrich Waelsch of Columbia University and the New York State Psychiatric Institute is the chemistry of brain tissue. He and his

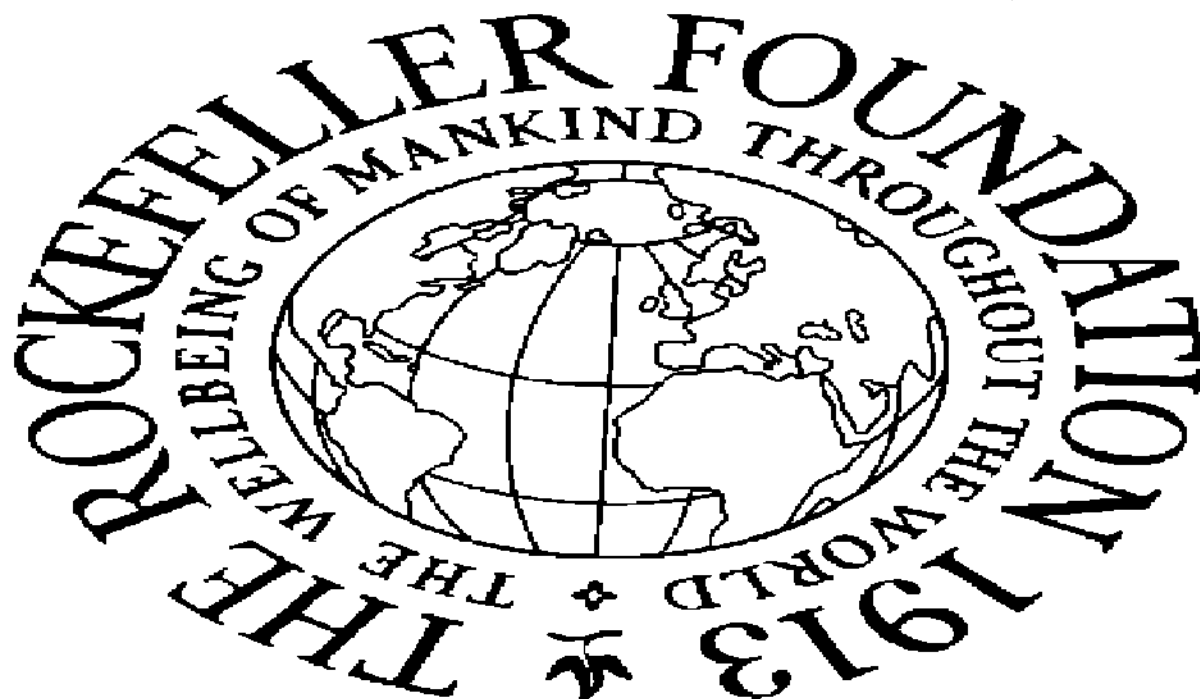




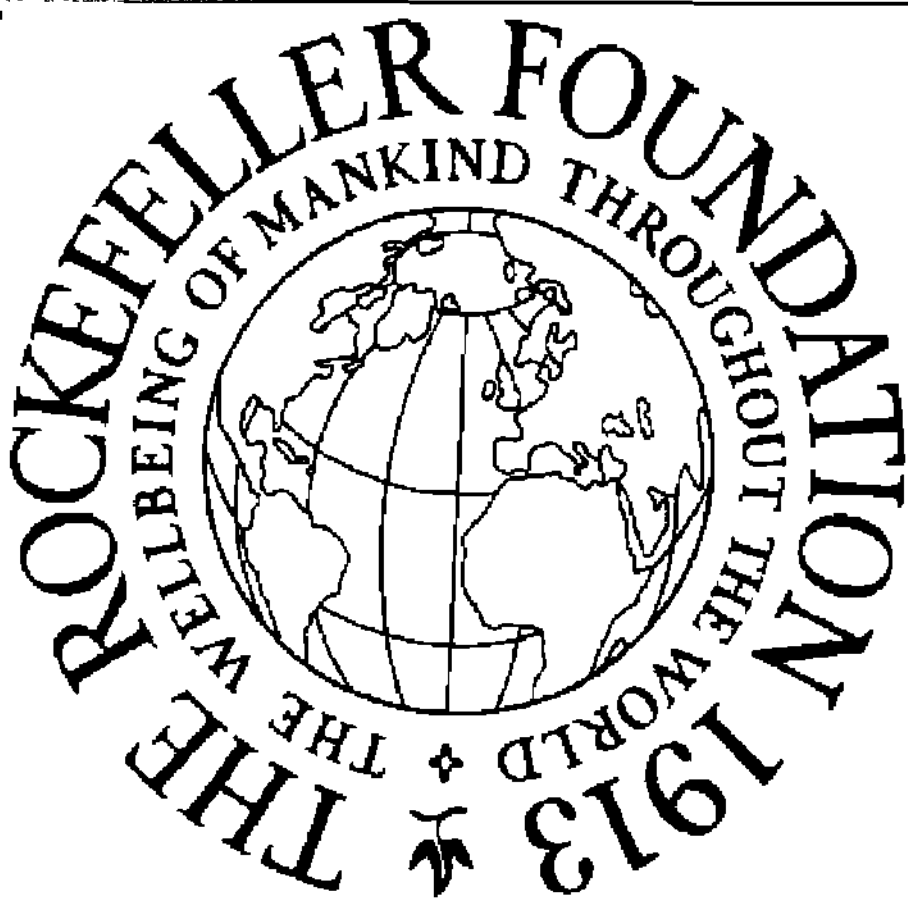
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Viki, a three year old chimpanzee, reared like a human child at the Yerkes Laboratories of Primate Biology, shows unusual imitative behavior

Behavior Laboratory of the Roscoe B. Jackson Memorial Laboratory is center for studies of genetic factors of intelligence and emotional variation in dogs



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Trapezoidal window used in investigations of the nature of perception at Princeton University



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Research on  
human genetics at the  
Galton Laboratory,  
University College,  
London

colleagues are attempting to elucidate both normal and abnormal mental states through analysis of the chemical factors in the metabolism and functioning of nervous tissue. The project has had assistance from The Rockefeller Foundation since 1947; further aid was granted in 1950 with an appropriation of \$16,000, available for two years.

Special attention is given at present to glutamic acid, one of the amino acids, and to glutamine, a close derivative of glutamic acid. These two compounds may be importantly related to both the structure and energy metabolism of nerve cells. Of all the body organs tested the brain was found to contain the highest concentration of glutamic acid. Dr. Waelsch and his co-workers have developed accurate methods for investigating the exact role of glutamic acid and have worked out techniques for determining just how much glutamic acid and glutamine is present in blood and in tissue.

Current efforts are aimed at finding out what factors control the concentration of glutamine, glutamic acid and the total amino acids in the brain. Recent experiments have pointed out that in the brain glutamine may possibly be a key element in the synthesis of peptides, the building blocks from which proteins are made. Newly discovered enzyme systems and newly synthesized antagonists of glutamic acid metabolism are being utilized to investigate this hypothesis. Work is also going forward on the origin of the high glutamic acid content in the brain and on the effect of the adrenocorticotropic hormone of the

pituitary (ACTH) and the adrenal cortex hormone (cortisone) on glutamic acid metabolism. It is hoped that these studies will aid in the understanding of the role of glutamine not only in brain function but in the protein metabolism of the body as a whole.

#### UNIVERSITY OF CAMBRIDGE

#### NEUROPHYSIOLOGY

At the Physiological Laboratory of the University of Cambridge, England, an extensive research program is in progress on the problem of nerve activity. Under the direction of Professor E. D. Adrian, a large staff is applying a variety of chemical, electrical and mathematical techniques to study of the complex events involved in the transmission of nervous impulses. Many of the procedures in use have been devised or modified by Professor Adrian and his co-workers, and new techniques are constantly being developed. The investigations utilize single nerve fibers, the simplest biological material available, because these relatively uncomplicated structures provide the most favorable medium for correlating electrical changes produced during nerve activity with the underlying chemical reactions. The solution to the riddle of just how the nervous system relays its messages may well depend to a considerable extent on an adequate understanding of the relationship between these electrical and chemical phenomena.

Professor Adrian's unit is widely known for its activities in training young scientists as well as its research work. The Physiological Laboratory is host

to neurophysiologists from all over the world who come to Cambridge to study and observe. The Rockefeller Foundation, which has aided Professor Adrian's program in neurophysiology since 1934, in 1950 made a further five-year grant of \$14,250, mainly to help meet expenses of these visiting scientists.

#### CHILD RESEARCH COUNCIL OF DENVER CHILD DEVELOPMENT

The Child Research Council of Denver is an organization devoted to the study of the phenomena of human growth and development. Its researches include simultaneous observations on children, their families and their environments by specialists in medicine, psychiatry, psychology, dentistry, physiology and social work. Dr. Alfred H. Washburn directs the council. The ultimate aim is to define what constitutes normal growth and behavior. The Rockefeller Foundation has given assistance to the Child Research Council of Denver since 1939. Aid granted as of the end of 1949 covers the period ending September 30, 1954; a 1950 grant of \$25,000 pledges Foundation support through September 1955.

#### YERKES LABORATORIES PRIMATE BIOLOGY

From 1925 to 1941 the Yerkes Laboratories of Primate Biology in Orange Park, Florida, operated as a division of Yale University under the leadership of Dr. Robert M. Yerkes. During this period, Dr. Yerkes and his collaborators, in developing methods

for breeding and rearing healthy chimpanzees in captivity, accumulated valuable information on the natural history and behavior of chimpanzees. Upon the retirement of Dr. Yerkes, the laboratories were reorganized under the joint sponsorship of Yale University and Harvard University, with a separate Board of Scientific Directors representing institutions in Canada and the United States that have special interests in the fields of psychology, neurology and endocrinology. Members of the research staff at the Yerkes Laboratories hold positions on the staff of Yale or Harvard, both of which universities allow credit toward degrees for work done at the laboratories. The present director of the laboratories is Dr. Karl S. Lashley of Harvard University, a distinguished experimental psychologist, who has oriented the work in the direction of experimental analysis of the primate nervous system. The work throughout has been based on the conviction that careful observation of a controlled group of primates could contribute importantly to the understanding of human behavior.

In 1950 the sum of \$90,000 was appropriated by The Rockefeller Foundation to the Yerkes Laboratories of Primate Biology toward general budget expenses over the period ending June 30, 1954.

#### UNIVERSITY OF BRUSSELS NEUROPHYSIOLOGY

In Belgium The Rockefeller Foundation in 1950 made a grant of \$25,000 to the University of Brussels for research, travel and the training of technical assistants connected with the work of Professor

Frederic Bremer. Professor Bremer, who has for many years occupied the chair of general pathology at the University of Brussels, is one of the eminent, productive neurophysiologists of Europe. Through his discussions at conferences, his own research work and his training of young neurophysiologists, he exerts a valuable international influence on physiology. Professor Bremer's neurophysiological program is carried on with the aid of visiting colleagues from countries other than Belgium, as well as in collaboration with a team of eight permanent associates. The published papers of this group deal with almost every phase of the physiology of the nervous system.

The following subjects currently under study at the University of Brussels illustrate the varied interests of the group: 1) synaptic delay in relation to the polarization of the nerve cell, 2) the representation of the auditory mechanism in the cortex of the brain, 3) electrical activity of the inner ear, 4) the effect of the regrowth of nerve on the restoration of function of denervated striated muscle, 5) the relationship of nutrition to fatigue of nerves, 6) changes in the electrical activity of nerves in animals deprived of adrenal glands, 7) the role of the nerve supply of the intestines and the changes observed in intestinal obstruction and 8) analysis of the dilation of blood vessels which follows local denervation.

#### HARVARD UNIVERSITY STUDENT HEALTH

A long-term project of the<sup>5</sup>Department of Hygiene at Harvard University, directed by Dr. Arlie V. Bock,

concerns the study of adult development. In 1938 the department started detailed investigations of more than 250 healthy, well-adjusted undergraduates. In order to acquire full anatomical, physiological and psychological histories, university physicians sought the participation of other departments for collaboration in the fields of psychiatry, psychology, social sciences, anthropology and physiology. This cooperative work resulted in the collection of a large amount of descriptive material on behavior traits and on the physical and psychological characters of the selected group. Details concerning the postgraduate careers of these men are now accumulating. Much of the field work and personal interviewing of the men, their wives and their families is being done by Dr. Margaret Lantis, cultural anthropologist.

More than 70 articles have been published by the research group in this study of adult development. These publications include two short monographs *What People Are . . . A Study of Normal Young Men* by Clark W. Heath and collaborators, and *Young Man, You Are Normal* by Earnest Hooton. The Rockefeller Foundation this year made a grant of \$15,000 to Harvard University to be used in this follow-up study over the next three years.

#### UNIVERSITY OF LIÈGE

#### LABORATORY OF NEUROANATOMY

The Rockefeller Foundation has made a three-year grant of \$20,800 to the University of Liège, Belgium, toward the development of its Laboratory of Neuro-



anatomy. The grant is supplying essential laboratory and operating room equipment, as well as an assistant, two technicians and a part-time secretary for Professor Agrégé Michael Gerebtzoff.

Professor Gerebtzoff's research in the field of neuroanatomy falls into three categories: 1) experimental anatomy, including a technique for exploring the experimental degeneration of unmyelinated fibers and of fiber endings in the peripheral nervous system, which Professor Gerebtzoff hopes to adapt to similar studies in the central nervous system; 2) experimental histochemistry, with investigations of the degenerating myelin sheath, the carbohydrates and lipids of the nerve cell, and certain nervous tissue enzymes; and 3) clinical and experimental histopathology, in particular studies of brain lesions in men who died of burns and nervous lesions in experimental intoxications of mammals by some contact insecticides.

#### UNIVERSITY OF ZURICH

#### PSYCHIATRIC CLINIC

In 1950 The Rockefeller Foundation made a five-year grant of \$16,800 to the University of Zurich, Switzerland, for the work of the Psychiatric Clinic under Professor Manfred Bleuler. Professor Bleuler is especially interested in the relationship between the endocrine glands and mental diseases such as schizophrenia. It is well known that the glands of internal secretion are capable of bringing about profound alterations in behavior, but there is as yet little quantitative information on the subject. The rapid

development of new methods for assaying the secretion of these glands, and the increasing availability of pure hormones for therapeutic tests in patients, provide a promising background for the research at the Psychiatric Clinic. Professor Bleuler has made arrangements with the Department of Medicine for assistance in carrying out the various tests of endocrine function. The Foundation grant is being used to add a full-time psychiatrist to Professor Bleuler's staff and to develop the endocrinology laboratory and the psychiatric teaching facilities at the University of Zurich.

#### HUMAN HEREDITY

GALTON LABORATORY, UNIVERSITY OF LONDON  
RESEARCH IN HUMAN HEREDITY

The Galton Laboratory of the University of London was founded in 1904 to carry on the work of Sir Francis Galton concerning the influences which may "improve or impair the racial qualities of future generations, either physically or mentally." At present the laboratory is seeking to analyze the specific genetic factors which may underlie both normal and abnormal human development.

The staff of the Galton Laboratory, which since 1945 has been headed by Dr. L. S. Penrose, consists of ten professional workers and six technical assistants. Current research includes such activities as identification and accurate description of human traits known or thought to be inherited; studies on morpho-

logical features such as hair, pigmentation, and dermal ridges of the hands; biochemical appraisal of metabolic functions such as amino acid excretion; and physiological investigation of functions such as color perception, hearing and special mental abilities. In studies of tone deafness the laboratory has the cooperation of the Department of Phonetics of the University of London and of the British Broadcasting Corporation. The Galton Laboratory received aid from The Rockefeller Foundation in 1950 through a grant of \$28,500, available for five years, to the University of London.

#### UNIVERSITY OF GENEVA

##### HUMAN GENETICS

The importance of heredity in explaining the occurrence of susceptibility to certain diseases, as well as its role in producing congenital malformations, is gradually becoming more evident. Regions such as Switzerland, where the population is relatively fixed and susceptible to effective observation through accumulated family records and inexpensive field work, are the areas where pioneer work on human heredity can best be undertaken. Professor A. Franceschetti, professor of ophthalmology at the Medical Faculty of the University of Geneva, has made use of these advantages in developing research in human genetics under the direction of one of his colleagues, Dr. D. Klein.

Professor Franceschetti now wishes to develop a center for registering all cases of hereditary disease

in Switzerland, as well as for conducting systematic investigations on the incidence and distribution of such diseases and their mode of transmission. The Rockefeller Foundation has approved a three-year grant of \$12,000 to the University of Geneva in support of this work, to be used chiefly toward the salary of Dr. Klein and for clerical and travel expenses incidental to his work.

### MEDICAL EDUCATION

#### JOHNS HOPKINS UNIVERSITY

#### INSTITUTE OF THE HISTORY OF MEDICINE

The Institute of the History of Medicine at Johns Hopkins University, Baltimore, presents medical history to students in the School of Medicine and the School of Hygiene and Public Health, with emphasis on the relationship between medicine and the society which medicine and physicians must serve. Medical history in this wider setting deals with some of the cause and effect relationships of medical sociology. It shows how major medical trends have been determined by the social and economic structures of the day, and by the scientific and technical means available to medicine at the time. In addition, certain aspects of medical history are related to the larger story of the history of science, and the latter, in turn, to the general social and intellectual experience of mankind.

Other functions of the institute include the promotion of graduate studies and research in the history of

medicine. The Rockefeller Foundation is currently providing \$30,000 annually toward the work of the institute. In 1950 it made a grant of \$30,000 which will carry this support through June 1953.

ASSOCIATION OF AMERICAN MEDICAL COLLEGES  
MEDICAL FILM INSTITUTE

Although the production of medical motion pictures has attracted interest since the beginning of the movie era in 1895, the full potentialities of the medical film as an educational instrument have never been realized. Most early motion pictures were merely records of surgical operations, clinical cases or experimental techniques. The Second World War, however, demonstrated that films designed specifically for teaching purposes could effectively impart certain kinds of factual knowledge and perhaps certain types of skills. Lately some promising attempts at conveying fairly complicated conceptual material have also been made. Many medical educators feel that with further development motion picture films could serve as a potent means of communicating medical knowledge not only to students of medicine but to practicing physicians and even to the general public.

With this idea in mind the Association of American Medical Colleges, a formal association of all the medical schools in the United States and Canada, in 1949 established the Medical Film Institute as an operating agency of the association. This institute, directed by Dr. David S. Ruhe, promotes the exchange of information and skills among the various groups con-

cerned with the many different aspects of educational film production. One of the tasks of the institute is the creation of a carefully prepared critical catalogue of the approximately 5,000 films now existing. Such a catalogue would enable teachers to select the film most appropriate for a given purpose and would point up the need for new films and set standards for their production. Also, an adequate critical catalogue of medical films could do much to further medical education in some foreign countries where medical teaching facilities are not yet adequately developed.

During the first year of work on the catalogue Dr. Ruhe and his colleagues intend to review about 750 films. The plan is first to screen the pictures on technical grounds and then to submit those that pass the tests of a good motion picture to selected committees of experts for consideration on the bases of scientific accuracy and teaching value. Results of these detailed appraisals in full form will be available from the institute; abstracts of the appraisals will be circulated to medical libraries on cards suitable for filing.

The Medical Film Institute derives its general support from the John and Mary R. Markle Foundation and the Commonwealth Fund. Initial funds for the cataloguing project have been provided in 1950 through a one-year grant of \$21,350 from The Rockefeller Foundation.

#### NEW ENGLAND CENTER HOSPITAL POSTGRADUATE MEDICAL EDUCATION

In various countries, including the United States, there has been in the past two decades a growth of

Physiological Laboratory,  
University of Cambridge:  
dissecting a single nerve fiber  
under a binocular microscope.  
Apparatus in background meas-  
ures electrical activity and counts  
the  $\beta$  particles emitted by  
radioactive sodium in nerve

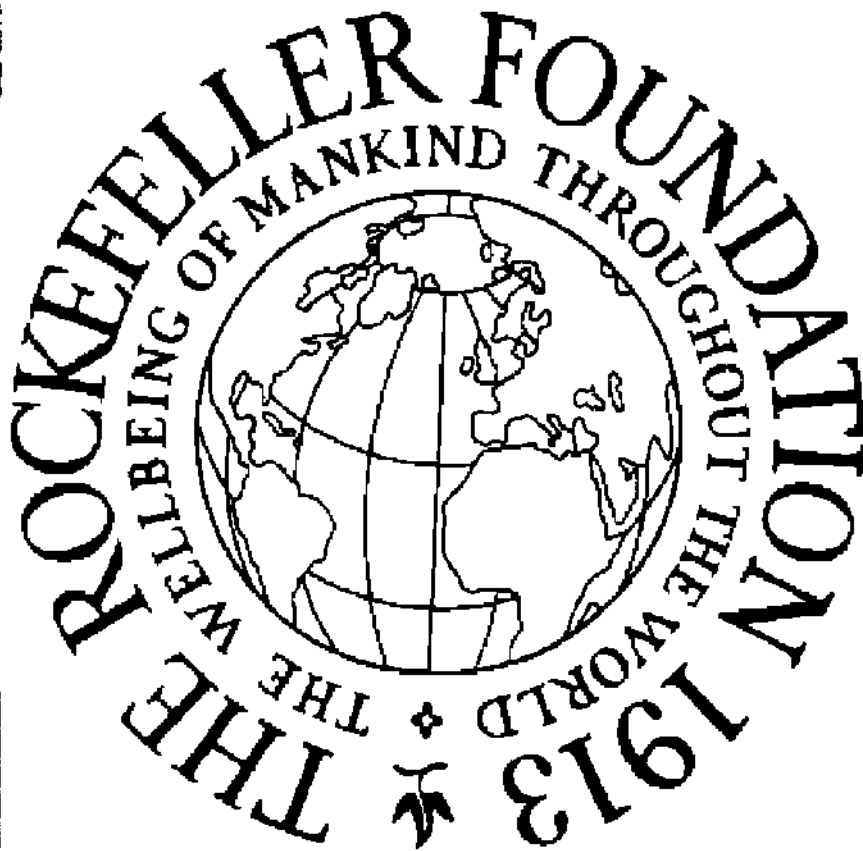


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Discussions in the Parapsychology Laboratory at Duke University



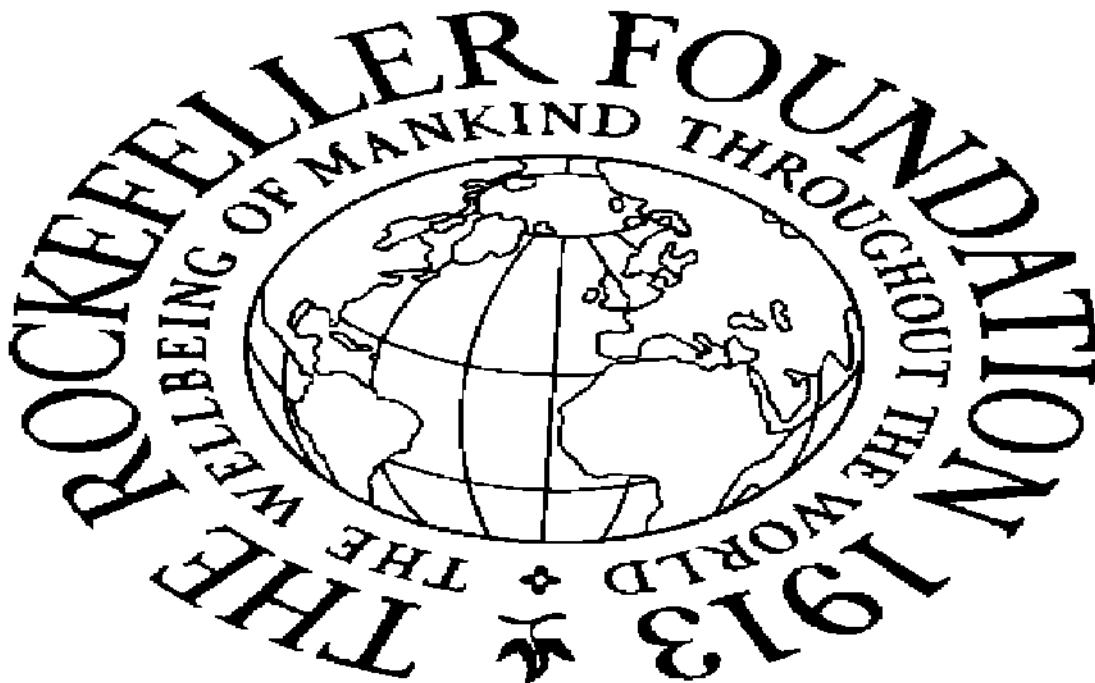
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Child Guidance Clinic, University of Copenhagen

An eight-year-old takes the Form Board test at the Child Research Council, Denver



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public interest in the wider distribution of first-rate medical care to all who need it. The problem presses for solution, especially in areas remote from medical centers. Ways and means of solving this problem, principally in certain parts of Massachusetts outside of the Boston area, have given much concern to the New England Center Hospital of Boston.

The New England Center Hospital, formerly known as the Bingham Associates Fund of Massachusetts, is an operating agency associated with Tufts College Medical School. Its program of improving medical care in rural areas, which began some 15 years ago, assumes that rising standards of medical care follow directly from improved education for practicing physicians. "Make Every Hospital a Teaching Hospital" expresses the strategy of this undertaking.

The first phase of the effort concerned itself with raising the standards of technical services provided in the cooperating hospitals. Schools for training medical technicians have been organized both in Boston and in the most important of the outlying base hospitals. Properly qualified specialists in roentgenology and pathology, whose headquarters are in these centers, make regular visits to all the hospitals cooperating in the plan. The establishment in hospitals of periodic (weekly or monthly) ward rounds, staff conferences, clinical pathological conferences and formal lectures has amplified the educational program. Success has also attended the recent courses in bedside teaching one day a week for a fairly extended period of time.

Since experiments of the type exemplified by the work of the New England Center Hospital may play an important role in serving as models for other communities, a considerable part of the administrative time is devoted to instructing visitors from other parts of the United States and foreign countries in the operations of the scheme. Plans somewhat like that of the New England Center Hospital are now being conducted in western New York, Michigan and Maryland. Other states have similar schemes under development. The Rockefeller Foundation has appropriated to the New England Center Hospital, for developing its program of postgraduate medical education in certain rural areas and towns of Massachusetts, the sum of \$100,000, available for four years.

## ENDOCRINOLOGY

### NEW ENGLAND MEDICAL CENTER

#### ENDOCRINOLOGY

In 1950 The Rockefeller Foundation made a five-year grant of \$30,000 to the New England Medical Center, Boston, for research in endocrinology at the Pratt Diagnostic Hospital, under the direction of Dr. Edwin B. Astwood. Dr. Astwood combines his responsibility for the care and treatment of all patients with endocrinological disorders at Pratt Diagnostic Hospital with a training program for young physicians anxious to master the clinical and theoretical aspects of this specialized field. At present he is

directing the training of a group of some 15 young endocrinologists. Dr. Astwood's personal contributions to the field of endocrinology and the physiology of the endocrine system include his discovery of a series of substances which inhibit the secretion of the thyroid gland, thus making it possible to treat thyrotoxicosis without resort to surgical operations. He has also been active in developing a simple method for preparing the pituitary hormone ACTH from hog pituitaries.

UNIVERSITY OF LUND  
INSTITUTE OF PHYSIOLOGY

Professor Georg Kahlson, of the Department of Physiology at the University of Lund, Sweden, is interested in the origin and activity of physiologically active substances elaborated by nerves and other normal tissues. He has recently found that the lymph which drains from certain organs contains high concentrations of many chemical agents, among them acetylcholine, adrenaline, nor-adrenaline, histamine and adenosine compounds. Especially noteworthy is the presence in lymph of histaminase, an enzyme capable of destroying histamine, which in turn is capable of producing grave bodily disturbances when allowed to accumulate in excessive amounts. Because of the widespread interest in the relationship of the pituitary and adrenal hormones to certain common diseases like arthritis, it is of interest to learn that Professor Kahlson has found that removal of the

pituitary or adrenal glands causes a marked drop in the concentration of lymph-borne histaminase.

A Rockefeller Foundation grant of \$11,200 to the University of Lund will allow Professor Kahlson and his collaborator, Dr. Dora Jacobsohn, to continue research on the active chemical agents found in the lymph, and on the enzyme systems (also contained within the lymph) corresponding to these agents.

### GRANTS IN AID

Grant-in-aid allocations in the medical sciences for the year 1950 came to a total of \$168,574.07. The grants made, which were 65 in number, encompassed a wide variety of projects and purposes within the general program of the division. A considerable proportion of them furnished money for such specific purposes as research and technical assistants, stenographic and clerical help, and equipment and supplies, particularly special apparatus.

Thirty-three grants in aid were used to finance the visits of mature research workers to other research centers. The intention of these scientists was not to work as students, but to observe, to exchange ideas with colleagues and to establish and renew contacts with workers in their particular fields. Twenty-eight of the visitors came from 15 foreign countries, chiefly to research centers in the United States and Canada. The large number of grants for travel reflects the isolation of scientists during World War II, the effects of which have not yet worn off.

The following list gives for each grant the name of the institution, the purpose for which the grant was made and the name of the person in charge of the work, where direction has been assigned to some one individual. In the case of travel grants, the name of the institution with which the individual is associated, together with his field of interest and the country or countries which he visited, is listed.

## GENERAL

Catholic University of Chile, Santiago Pharmacology and biochemistry; Dr. Joaquin V. Luco	\$ 2,500
Forsyth Dental Infirmary for Children, Boston, Massachusetts Expenses of Dr. A. LeRoy Johnson, con- sultant in dental education	6,000
General fund for small items, to be allotted under the immediate supervision of the director of the division	5,000
Harvard Medical School, Department of Pharmacology, Boston, Massachusetts Pathology and pharmacology; Dr. Eric A. Wright, lecturer in pathology, Guy's Hospital, London, England, for work while at Harvard	650
Harvard Medical School, Boston, Massa- chusetts Role of language in psychiatry and psy- chosomatic medicine; Professor John R. Reid, Department of Philosophy, Stanford University, who will work at Harvard	6,000
Instituto de Investigaciones Bioquimicas, Buenos Aires, Argentina Biochemistry; Dr. Luis Federico Leloir	3,000

Instituto de Investigaciones Medicas, Rosario, Argentina Chemical, pathological and general experimental laboratories; Dr. Juan T. Lewis, director of the institute	\$ 6,000
Johns Hopkins University School of Medicine, Baltimore, Maryland Neurophysiology; Dr. Stephen William Kuffler	4,000
Karolinska Institute, Stockholm, Sweden Neurophysiology; Dr. Carl G. Bernhard	9,200
Makerere College Medical School, Kampala, Uganda Exchange of personnel between Makerere College Medical School, Kitchener School of Medicine, Khartoum, Anglo-Egyptian Sudan, and University College, Ibadan, Nigeria	3,360
Medical Library Association, Nashville, Tennessee Scholarships for foreign medical librarians	10,000
Shipment of medical literature to various foreign libraries	5,000
Ohio State University, Columbus Navaho Indian study, from the standpoint of biology and human genetics; Dr. J. N. Spuhler	2,300
Swiss Institute of Public Hygiene, Geneva Immunology and epidemiology; Professor Edmond Grasset	4,500
University College of the West Indies, Department of Pathology, Jamaica Pathology; Professor Kenneth R. Hill	1,000
University of Cambridge, Department of Pathology, England Bacteriology and virology; Dr. J. A. R. Miles	1,950

University of Frankfurt, Institute for Vegetative Physiology, Germany Researches in connection with artificial kidney; Dr. Rudolf K. Zahn	\$ 600
University of Glasgow, Department of Materia Medica and Therapeutics, Scotland Action of drugs on heart and blood vessels; Dr. Stanley Alstead	1,000
University of Helsinki, Department of Bacteriology and Serology, Finland Establishment of virus laboratory; Dr. Kari J. Penttinen	1,500
University of Lund, Medical Clinic, Malmö, Sweden Study of human disease by means of radioactive isotopes, and salary of a psychiatrist	6,000
University of Marseille, Faculty of Sciences, France Department of Medicine, cardiac catheterization; Dr. Raymond Gerard	3,400
Department of Physiology; Dr. Paul H. Benoit	732
University of Munich, Pharmacological Institute, Germany Pharmacology; Dr. Melchior Reiter	3,500
University of Oslo, Norway Incidence of mental disease; Dr. Ørnulv Ødegard	450
University of San Marcos, Lima, Peru Institute of Andean Biology, acclimatization and chronic anoxia in the Andes; Dr. Carlos Monge, Jr.	1,000
Laboratory of Normal Anatomy and Pathology of the Nervous System, anatomy and pathology; Dr. Enrique Encinas	800

University of São Paulo, Department of Physiology, Faculty of Medicine, Brazil Nutrition, vitamin deficiencies; Dr. Alberto da Silva	\$ 800
University of Sydney Medical School, Australia Establishment of an electrophoresis lab- oratory; Dr. R. N. Lyons and other investigators	3,120
University of Toulouse, Laboratory of Experimental Surgery, France Cardiovascular disease; Dr. Pierre Ca- lazel	900
Vanderbilt University School of Medicine, Department of Pediatrics, Nashville, Tennessee Exchange of senior assistants between this department and the Pediatric Clinic of the Karolinska Institute, Stockholm, Sweden	3,000
Wilhelmina Hospital, Amsterdam, Neth- erlands Psychosomatic medicine; Dr. Juda Groen	6,205
Yale University, New Haven, Connecti- cut Effects of aging upon sexual behavior; Dr. Frank A. Beach	6,000

## TRAVEL GRANTS

Dr. Andrew A. Abbie, dean, Faculty of Medicine, University of Adelaide, Aus- tralia; medical schools; United States	544
Dr. William R. Adey, Department of Anat- omy, Faculty of Medicine, University of Adelaide, Australia; anatomy; United States	550



Professor Henry Barcroft, St. Thomas's Medical School, London, England; cardiovascular physiology; United States and Canada	\$ 1,400
Professor Wolfgang Bargmann, Department of Anatomy, University of Kiel, Germany; anatomical problems, including endocrinology; United States and Canada	2,260
Dr. Paul H. Benoit, Department of Physiology, Faculty of Sciences, University of Marseille, France; electrophysiology; Sweden and Denmark	1,000
Dr. Paul Bonnevie, professor of hygiene, Rigshospital, Copenhagen, Denmark; social medicine; United States	2,200
Dr. Chandler McC. Brooks, professor of physiology and pharmacology, Long Island College of Medicine, Brooklyn, New York; departments of physiology and pharmacology; Europe	1,947
Dean Jacques Callot, Faculty of Medicine, University of Strasbourg, France; representative medical schools; United States and Canada	2,300
Gilbert Causey, Department of Anatomy, University College, London, England; anatomy and physiology; United States and Canada	1,308
Dr. A. E. Coates, University of Melbourne, Australia; surgery; United States and Canada	1,000
Dr. Nicholas E. Collias, Department of Zoology, University of Wisconsin, Madison; animal behavior (howler monkey); Barro Colorado Island, Panama Canal Zone	500

Dr. Gladys H. Dodds, Department of Obstetrics, Queen Charlotte Hospital, London, England; toxemias of pregnancy; United States and Canada	\$ 1,380
Dr. Carroll W. Dodge, Washington University, St. Louis, Missouri; medical mycology; visiting professor to Institute of Microbiology and Immunology, University of Chile, Santiago	1,046
Dr. Hector Ducci, College of Medicine, University of Chile, Santiago; hepatology; England, Denmark, Sweden, France and Switzerland	1,400
Dr. P. K. Duraiswami, honorary surgeon, Government Royapettah Hospital, Madras, India; orthopedic surgery; United States and Canada	1,860
Professor Barahana Fernandes, University of Lisbon, Portugal; psychiatry; United States and Canada	2,300
Dr. Asbjorn Folling, Veterinary High School, Oslo, Norway; biochemistry; United States and Canada	2,280
Dr. Albert Ginglinger, Faculty of Medicine, University of Strasbourg, France; obstetrics; United States and Canada	1,549
Dr. N. E. Goldsworthy, Institute of Dental Research, The Dental Hospital of Sydney, Australia; dental research; United States and Canada	3,900
Dr. Werner Jacobson, Strangeways Research Laboratory, Cambridge, England; hematology; United States and Canada	600
Dr. Alfredo Lanari, associate professor of internal medicine, Faculty of Medicine, Buenos Aires, Argentina; muscular diseases; United States and Canada	3,200

Dr. Adolfo Ley-Gracia, agrégé in neurosurgery, University of Barcelona, Spain; neurology, histopathology; United States and Canada	\$ 1,945
Professor Petar N. Martinovitch, State Laboratory for Experimental Biology and Medicine, Novi Sad, Yugoslavia; tissue culture; United States and Canada	2,600
Dr. Rafael Mendez, head of Section of Pharmacology, National Institute of Cardiology, Mexico, D. F.; cardiology; United States and Canada	1,500
Dr. Harry Most, Department of Preventive Medicine, New York University College of Medicine, New York; tropical medicine; England, Germany, France, Netherlands, Belgium, Italy and North Africa	1,566
Dr. Tsuneo Muramatsu, professor of psychiatry, Nagoya University Medical School, Nagoya, Japan; psychiatry; United States and Canada	3,200
Professor W. C. W. Nixon, University College Hospital, London, England; obstetrics and gynecology; United States and Canada	2,200
Dr. Vergilio Alves de Carvalho Pinto, College of Medicine, University of São Paulo, Brazil; pediatric surgery; United States and Canada	2,388
Representatives of European medical schools; expenses of attending symposium on medical education which was held in September 1950, at Deauville, France	3,500
Dr. Gunnar Rovig, Faculty of Medicine, University of Oslo, Norway; neurosurgery; United States and Canada	2,080

Dr. Lise Thevenin, chief of Clinic for Child Psychiatry, Lyon, France; child guidance; United States and Canada	\$ 2,044
Dr. John F. Williams, head of the Psychiatric Clinic, Children's Hospital, Carlton, Melbourne, Australia; psychiatry; United States and Canada	1,100
Dr. Ian Wood, Clinical Research Unit, The Walter and Eliza Hall Institute of Medical Research, Melbourne, Australia; gastrointestinal diseases; United States and Canada	560

**THE NATURAL SCIENCES**

THE NATURAL SCIENCES STAFF

During 1950

*Director*

WARREN WEAVER

*Associate Director*

HARRY M. MILLER, JR.

*Assistant Directors*

WILLIAM F. LOOMIS

GERARD R. POMERAT

# THE NATURAL SCIENCES

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## THE NATURAL SCIENCES

**T**HE grants made in the natural sciences in 1950, numbering 52 in all, reflected the division's continuing emphasis on the life sciences and on projects that give promise of increasing man's understanding of himself. Forty grants fell within the program in experimental biology, which in general is concerned with the constitution, structure and function of living organisms and their component parts. There is also a special interest in the application to basic biological problems of the analytical and experimental techniques developed in the physical sciences, i.e., chemistry, physics and mathematics. These 40 grants accounted for \$859,615 of the total \$2,092,515 appropriated during the year. Agriculture, which is in large measure applied biology, and hence a logical part of a program that stresses biology, was aided through eight grants, totaling \$558,300, in Latin American countries. Both the agricultural program and the program in experimental biology were characterized by a balance between substantial grants for large-scale projects (such as the grant of \$136,115 to the Polytechnic Institute of Brooklyn for X-ray crystallographic research on protein structure and the allocation of \$309,700 for the Mexican Agricultural Program) and modest appropriations for small-scale but neverthe-

less significant projects (for example, the \$11,100 grant for the tropical dairy cattle project at the Inter-American Institute of Agricultural Sciences and the grants of \$9,000 and \$8,500 to the University of Chicago for work in animal ecology).

Of the four remaining natural sciences grants, one, in the amount of \$113,600, was made to strengthen research and teaching in various branches of the natural sciences, including both experimental biology and agriculture, at a major South American university; another, for \$15,000, went to a project in the new field of social physics; the third was an appropriation of \$11,000 for specialized equipment for a leading British center of research in classical physics; and the fourth furnished \$60,000 to the National Research Council for fellowships in the natural sciences over and above those administered by the Foundation itself out of the \$175,000 set aside for natural sciences fellowships in 1951 (see pages 297-301). For support of natural science research through grants in aid during 1951 the Foundation appropriated the sum of \$300,000.

## EXPERIMENTAL BIOLOGY

### POLYTECHNIC INSTITUTE OF BROOKLYN RESEARCH ON PROTEIN STRUCTURE

Among the fundamental problems that still challenge scientific inquiry, the question of protein structure ranks as one of the most important and interesting. And with good reason: the dramatic point at which physical matter acquires a sufficient

degree of complexity and organization to be called "alive" is reached in nature with the nucleoprotein molecule. Thus the key to the structure of the protein molecule may unlock the age-old mystery of the essential organization and mechanism of life.

The determination of protein structure can be approached in a variety of ways. One particularly promising avenue of attack on the problem is through the extremely complex techniques of X-ray crystallography. Reduced to its simplest terms, X-ray crystallography involves directing a beam of X-rays onto a crystal substance, photographing the complicated pattern of reflections of these rays from the various crystal planes and then trying to calculate the structure which the crystal must have had to produce the observed reflections. It is a lengthy and laborious procedure, and one which requires the exercise of art and intuition as well as of science. Nevertheless, X-ray crystallography has succeeded in determining the structure of a considerable number of inorganic molecules and of at least a few rather complicated organic molecules. A few hints have even been obtained about the structure of a protein. The great difficulty in securing any data at all on the proteins lies in the fact that protein molecules characteristically contain not dozens or hundreds but many thousands of atoms.

However, for several reasons it now seems likely that a more concentrated assault by the X-ray crystallographic method on the structure of some protein might yield genuinely significant results. Experimental procedures have recently been refined

by at least one decimal point, and calculating machines now available are capable of carrying through, in a reasonable time, the exceedingly long and complicated reckoning which is necessary. In addition, important advances in the theory of X-ray crystallography have reduced the role of assumption and intuition to a relatively low point, while at the same time an accumulation of auxiliary knowledge is helping to formulate those assumptions which cannot yet be dispensed with.

These are some of the considerations that prompted the Polytechnic Institute of Brooklyn to expand its activities in the field of X-ray crystallography. In 1950 the institute, aided by a four-year grant of \$136,115 from The Rockefeller Foundation, established a new group specifically dedicated to research on the structure of protein through X-ray crystallographic methods. The leader of the project is Dr. David Harker. Dr. M. Kunitz, of The Rockefeller Institute for Medical Research, will collaborate in the project by furnishing crystalline proteins for analysis, and officials of the International Business Machines Corporation have indicated their willingness to participate in the computing work. The Rockefeller Foundation's appropriation will be used toward the general budget of the project.

#### UNIVERSITY OF VIRGINIA MEDICAL SCHOOL

#### ENZYME CHEMISTRY

A usual approach in pharmacology has been to test the effectiveness of a drug by its action on

various organs of the system. To explain the mechanism of such action, however, it is necessary to look inside the cell, and to determine the ways in which the drug in question affects the enzyme systems of the cell. Professor Chalmers L. Gemmill of the Department of Medicine of the University of Virginia has organized a research program in his department on the effects of drugs on enzyme systems.

Basic to investigations of this sort is the determination of the heat of reaction of various enzyme systems. Measuring the thermal energies involved is a delicate and difficult process involving the design and use of microcalorimeters sensitive to one one-thousandth of a degree Centigrade. Dr. Gemmill and his staff have constructed calorimeters which, while not wholly satisfactory, have led to new designs which they feel confident will be successful. Since no life is possible without some transfer of energy, the Medical School at the University of Virginia, in applying the modern biochemical approach to a study of the transfer of energy for growth and muscular contraction, is attempting to throw light on a fundamental biological problem. The project was assisted by The Rockefeller Foundation in 1950 through a three-year grant of \$30,000.

#### UNIVERSITY OF STOCKHOLM CHEMISTRY OF AMINO ACIDS

For the past ten years Dr. Gösta Ehrensvärd of the Wenner-Gren Institute, University of Stockholm, has been studying the metabolic pathways of

amino acids because he regards them as substances in transition rather than as end products ready to be incorporated into proteins. Using the techniques of biosynthesis, he and his co-workers have been labeling different atoms in various amino acids with stable and radioactive isotopes. Their purpose is to determine 1) how these acids are formed, 2) how they are transformed from one type to another, 3) how and in what proportions they contribute to the building up of proteins, and 4) how and in what forms they reappear when proteins are hydrolyzed and degraded.

This research program receives its major support from the Wenner-Gren Institute and from the Swedish National Medical and Natural Science Research Councils. However, dollar credits are lacking for the purchase and equipment of supplies available only in the United States. To meet this need The Rockefeller Foundation in 1950 appropriated the sum of \$12,000, available over a three-year period, to the University of Stockholm.

#### KAROLINSKA INSTITUTE BIOCHEMISTRY

The research activities in the field of biochemistry at the Karolinska Institute, Stockholm, have been expanding rapidly in recent years. The institute is an important training center for young scientists from Scandinavia and other regions of the world. Many have stayed on at the institute and inaugurated research programs of their own. Prominent among these is Professor Hugo Theorell, a former Rocke-

feller Foundation fellow and presently director of the Department of Biochemistry of the Medical Nobel Institute at the Karolinska Institute.

Under Professor Theorell's direction a large group of research workers are carrying out investigations on a number of biochemical problems. These include the structure and synthesis of oxidative enzymes; the nature of compounds containing hemin, the iron-containing, nonprotein constituent of hemoglobin and other related pigments; the crystalline structure of myohemoglobin, the hemoglobin found in muscle; the oxidation of alcohols and of a closely related class of compounds known as aldehydes; and the nature and functions of the fatty acids found in the tubercle bacillus. Numerous new techniques, some of which utilize radioactive isotopes, are being evolved in the pursuit of these studies. A specific micro-method has been worked out for determining quantitatively the amount of ethyl alcohol present in as little as one drop of blood, and a refined magnetic apparatus has been developed for studying hemin compounds present in microscopic quantity.

In 1948 the Department of Biochemistry moved into a new building that then seemed more than spacious and adequate for its needs. Now, only two years later, the new quarters have already become crowded, and more space and equipment are needed to permit the department's research to move forward properly. In order to alleviate the overcrowding the Wallenberg Foundation of Sweden has contributed a substantial sum for the construction of an addition

to the present building. The Rockefeller Foundation, which has given assistance to the Karolinska Institute for research under the direction of Professor Theorell since 1933, in 1950 made a further grant of \$45,000 to the institute. The money is to be used for specialized equipment for the additional laboratory quarters and for research expenses over a period of five years.

#### HARVARD UNIVERSITY

##### ENZYME CHEMISTRY

Research in physical and organic chemistry under the direction of Professor G. B. Kistiakowsky at Harvard University was aided by the Foundation from 1933 through 1943 by grants totaling \$98,200. In 1950 a further grant of \$18,000 was made. One of the main present interests of the Department of Chemistry at Harvard, directed by Professor Kistiakowsky, has to do with the kinetics and inhibition of reactions catalyzed by enzymes. The chemical nature of many reactions catalyzed by enzymes existing in biological systems and the coupling of these individual reactions into metabolic sequences is now reasonably well understood. However, it has never been possible to produce in the laboratory catalysts with comparable activity. While some information on the structure of the active centers in enzymes is available, details of the mode of action are by and large still unknown. Quantitative studies of the reactions of enzymes with various substances which inhibit their catalytic activity may, it is thought, lead to a further understanding of the mechanism of



enzyme action. The occurrence and the extent of this type of inhibition provide clues to the nature of the active centers. It is possible that the accumulation of such clues will lead to a better understanding of the catalytic activity. Basic to this type of work are such quantitative thermodynamic and kinetic measurements as have been undertaken in Professor Kistiakowsky's laboratory for the past three years. The 1950 grant, which runs over a four-year period, provides approximately \$3,000 annually for assistance and \$1,500 annually for supplies and equipment. The general aim is to strengthen the physicochemical approach to enzyme research.

#### HASKINS LABORATORIES

##### BIOCHEMISTRY

For the past ten years Dr. S. H. Hutner of the Haskins Laboratories, New York, has been conducting a program of nutritional studies designed to analyze the mechanisms of key cellular processes. Many of the problems involved are so complex that they have resisted direct attack. However, much has been learned about animal nutrition from research directed at the nutritional requirements of microorganisms.

By working with those protists, or one-celled organisms, which simulate most closely the nutritional requirements of higher animals, it is hoped to identify an assortment of growth factors which collectively could represent most, if not all, of the requirements for various tissue cultures and for

intact animals. The specific growth factor for the algal flagellate, euglena, for example, was last year identified as vitamin B<sub>12</sub>.

One of the extensions of this work which seems especially promising is a study of organisms which, in becoming internal parasites, have developed greater and greater dependence on metabolic intermediates manufactured by the host and intended for the nourishment of the host's own cells. These studies should reveal much about the nutritional requirements at the cellular level of animals and human beings; they may also have important applications in cellular physiology, in animal and human nutrition and in certain problems of medicine.

Research on the growth requirements of the lower forms of life also bears on the development of effective synthetic media for various tissue cultures; these cultures would seem to be the most specialized and exacting of all cells in their nutritional requirements. Certain of the "unconventional" microorganisms under study may prove to be effective tools of assay and analysis for vitamins and for large molecular fragments such as those of the nucleic acids.

Dr. Hutner, in cooperation with workers in other institutions and with students coming to the Haskins Laboratories for research experience, proposes to apply the basic information already obtained to continuing study of the more complex protists, and eventually to an investigation of the nutritional requirements of mammalian cells in tissue culture. The Rockefeller Foundation in 1950 made a two-

year grant of \$12,000 to the Haskins Laboratories in support of this program.

CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE  
INSTITUTE OF GENETICS, GIF

The Centre national de la Recherche scientifique (CNRS) of France, established and organized by law as a public institution having separate legal entity and financial autonomy, has its headquarters in Paris and is operated under the French Ministry of National Education. The CNRS is charged with the responsibility of developing, orienting and coordinating French research in the basic sciences and the humanities. In accordance with that responsibility the CNRS has established and is now maintaining in various French universities and governmental bureaus a large number of small, highly specialized laboratories and research institutes. In 1946 the center started on an additional ambitious project: on its property at Gif, in the suburbs of Paris, the CNRS undertook to create a City of Institutes devoted to research in the biological sciences. In the same year, in spite of the difficulties of the postwar reconstruction period, the center managed to set up the first of these institutes; the Institute of Genetics was established in provisional quarters in the laboratories of Physicochemical Biology at the University of Paris.

The purpose of the Institute of Genetics is to assemble and train scientific workers in the field of genetics, particularly for its own staff; to prepare

plans for the construction of its own laboratory buildings and to acquire the necessary scientific equipment; to undertake research in animal and in plant genetics; to establish relations with centers of applied research so as to furnish the scientific directives for their activities; and to promote, through publication of its own research results, the application of genetic methods to problems of agriculture and animal husbandry.

Under the guidance of Professor Boris Ephrussi, its director and a former Foundation fellow, the new institute has made considerable progress. Internally the institute has been organized into a section of formal genetics, a section of physiological genetics and a section of evolutionary genetics. A dynamic and productive scientific staff of 17 persons and a technical staff of seven persons have been assembled; ten of the scientific staff also hold appointments at the University of Paris. At present the group is attacking such significant problems as quantitative inheritance, physiological genetics, the biochemistry of gene-like particles, the genetic nature of respiratory enzyme activity, sex linkage and sex-linked mutations, detection of biochemical mutants, population problems in microbial genetics, intraspecific and interspecific selection in *Drosophila*, and the influence of experimentally induced mutation rates on the evolution of the genetic constitutions of competing populations.

The permanent home buildings of the institute at Gif are nearing completion and will soon be ready for

occupancy. The institute has already acquired a good deal of basic research apparatus and equipment. In 1950 a grant of \$54,000, available for three years, was made to the Centre national de la Recherche scientifique by The Rockefeller Foundation to provide funds for the purchase of additional essential research equipment, mainly in the United States.

#### NATIONAL RESEARCH COUNCIL

##### UNITED STATES NATIONAL COMMITTEE OF THE INTERNATIONAL UNION OF CRYSTALLOGRAPHY

The International Union of Crystallography was organized shortly after the close of World War II for the purpose of promoting international cooperation and providing stimulus in the field of X-ray crystallography. Its present membership includes Australia, Belgium, Canada, Czechoslovakia, France, Great Britain, India, the Netherlands, Norway, Spain, Switzerland, the Union of South Africa and the United States. Dr. Ralph W. C. Wyckoff, a distinguished American crystallographer, is the chairman of the union's executive committee; he is also a member of the United States National Committee of the International Union of Crystallography, which is a special committee of the National Research Council.

The International Union has been concerning itself with reestablishing the main international publications dealing with crystallography. One of these is a specialized journal known as the *Acta Crystallographica*; another is *Structure Reports*, an annual volume containing critical summaries of current work in

X-ray crystallography. The third publication, the *International Tables for Crystal Structure Determination*, consists of a compilation of numerical data needed by crystallographers; the first edition is now being brought together, and revised editions will appear approximately once every ten years. A Rockefeller Foundation grant of \$10,000 was made in 1950 to the National Research Council to be utilized by the council's special committee for support of this publication program.

#### MASSACHUSETTS GENERAL HOSPITAL ENZYME RESEARCH

The Massachusetts General Hospital, Boston, is erecting a new research building costing over \$1,500,000. In this building, to be completed during the present year, expanded new quarters have been provided for the enzyme research program of Professor Fritz Lipmann, who is director of the Biochemical Research Laboratories of the Massachusetts General Hospital and professor of biochemistry at the Harvard Medical School.

Professor Lipmann's research has to do with the problems of energy utilization in the body, particularly the mechanism of acetic acid metabolism in cellular reactions. He and his co-workers are also interested in the broad problem of the functions of pantothenic acid in intermediary metabolism and the enzyme systems concerned with the acetylation of such substances as choline and sulfanilamide. A two-year grant of \$55,000 was made in 1950 to the Massachusetts General Hospital by The Rockefeller

Foundation for equipment to be used for enzyme research in the new quarters.

#### UNIVERSITY OF CAMBRIDGE

#### NATURAL SCIENCES RESEARCH EQUIPMENT

In 1950 The Rockefeller Foundation made two one-year grants to the University of Cambridge, England, to provide the hard currency needed for the purchase outside Great Britain of highly specialized biochemical research equipment. The sum of \$5,000 was appropriated for the use of the Cavendish Laboratory under the general direction of Professor Sir Lawrence Bragg; \$7,000 was allocated to the University Chemical Laboratory under Professor Alexander R. Todd.

Sir Lawrence and his colleagues in the Cavendish Laboratory are engaged in an intensive effort to establish by X-ray crystallographic evidence the structure of a protein. By this means they hope to show how, out of some 20 amino acids, nature manages to fashion such a universally important substance. Sir Lawrence's laboratory, one of the finest in Europe for the study of biologically important molecules and an important training center for young scientists, already possesses most of the equipment essential for this task; it lacks only some newly perfected American apparatus. The Foundation grant will make it possible for the laboratory to overcome this handicap.

The University Chemical Laboratory, under Professor Todd's leadership, has become one of Great Britain's foremost centers for research in synthetic

organic chemistry. The work of the group there is turning more and more to the analysis and synthesis of biologically important substances, such as nucleic acids and nucleotides (the compounds resulting from the action of enzymes on nucleic acids); a special section for rapid microchemical analysis of the intermediate compounds produced in the synthesis of a given substance is now being set up. A 1949 grant from The Rockefeller Foundation enabled Professor Todd to acquire an infrared spectro-photometer for his laboratory. The instrument has proved extremely valuable, and Professor Todd wishes to expand its use. The 1950 Foundation grant will permit the purchase of the requisite accessories for the spectrophotometer as well as some other special apparatus for quantitative estimation of carbon, hydrogen and nitrogen.

#### GENETICS SOCIETY OF AMERICA GOLDEN JUBILEE MEETING

The year 1950 marked the fiftieth anniversary of the rediscovery of the experiments of Gregor Mendel, which furnished the foundation stones for the structure of modern genetics. The half century since 1900 has brought increasing recognition of the importance of this discipline to an understanding of the problems of agriculture, medicine, sociology and human ecology. To commemorate the semicentenary of genetic science the Genetics Society of America last September held a Golden Jubilee Meeting.

Upon the invitation of the society, an international group of distinguished geneticists met in Columbus,



Ohio, to appraise critically achievements in their field and the promise of these achievements for the future. Among the general topics discussed were biology in 1900 and the impact of Mendel's work upon it; the early years of Mendelism; drosophila genetics — past, present and future; the development of the theory of the gene; quantitative inheritance; cytogenetics; and the genetics of microorganisms. The delegates to the meeting also reviewed the past, present and future contributions of genetics to food production, livestock improvement, medicine, the problem of evolution, embryology and sociology. A \$15,000 grant from The Rockefeller Foundation furnished funds for the travel and living expenses of European guests, for general expenses of the conference, and for part of the costs of publishing as a monograph the papers presented at the Golden Jubilee Meeting.

#### UNIVERSITY OF CHICAGO ANIMAL ECOLOGY

The Rockefeller Foundation has given support to research in animal ecology at the University of Chicago since 1943. In 1950 two additional allocations were made to the university for work in this field. The first, a three-year grant of \$9,000, is for support of research under the direction of Professor W. C. Allee; the other appropriation, amounting to \$8,500 and also available for three years, is to assist the work being directed by Professor Thomas Park.

Professor Allee is known for his studies concerning group organization in flocks of birds and his experi-

ments dealing with various aspects of unconscious automatic cooperation in animal societies. His present research deals with the social hierarchy of flocks of common domestic hens, particularly the pecking order in flocks of mixed breeds. Professor Allee also plans to analyze the behavior resembling frustration that is demonstrated by some hens when they are simultaneously maintained as part-time members of a number of flocks.

Professor Park's work is devoted to a controlled investigation of the competition that results when two animal populations inhabit the same environment. All his experiments to date have shown invariably that one species becomes extinct while the other thrives, thus confirming under laboratory conditions and for a specific environmental condition the theory of the survival of the fittest species. Under laboratory conditions — for example, two species of flour beetles grown in the same bag of flour — success seems to depend on such factors as disease resistance and the capacity for favorable response to changes in the temperature and humidity of the environment. These controlled experiments can be expected to shed light upon the important problem of competing populations in nature.

#### COLUMBIA UNIVERSITY

#### ENZYME RESEARCH

For more than seven years a small group has been working on enzyme chemistry in the Department of Medicine at the College of Physicians and Surgeons of Columbia University, New York. In the earlier

stages the work concerned chiefly the isolation of enzymes and the study of the action of these enzymes outside of the body. It is now planned to carry this research to the next level, that is, to correlate specific enzyme activities with specific organ functions in living animals.

A principal member of this group is Dr. John V. Taggart. For some time Dr. Taggart has been concerned with studying the intimate biochemical details of the complex filtrative, reabsorptive and secretive processes which go on in the kidney. Renal tubular transfer requires energy which must be furnished by cellular metabolic processes. Dr. Taggart is especially concerned with the enzyme control of these particular energy-furnishing processes. It has recently been discovered that preparations from isolated renal tubules of fresh flounder, directly visualized under the microscope, could be made to display the chemical processes of transport and accumulation. The same use can be made of sections of rabbit kidney cortex. This new technique promises to facilitate biochemical studies on transport mechanisms in mammalian kidneys. The Rockefeller Foundation has made available \$12,000 to Columbia University in support of this research over a two-year period beginning July 1, 1950.

#### MONTREAL GENERAL HOSPITAL BIOCHEMISTRY

Since its establishment by the Montreal General Hospital two years ago for the study of cell metabolism and the biochemical processes which lead

to pathological disturbances, the Research Institute of the Montreal General Hospital (formerly the Institute of Special Research and Cell Metabolism) has stressed investigations in the field of enzyme chemistry. The institute, under the supervision of Dr. Juda H. Quastel, a former Rockefeller Foundation fellow and professor of biochemistry at McGill University Medical School, now has a staff of 25 persons and is housed in a separate building adjacent to McGill University.

Current Foundation support goes to three projects. The first of these is the development of the two-dimensional paper chromatography technique in studying blood and enzyme proteins. It is hoped that this method can be used for diagnostic purposes. Some 17 protein fractions have already been separated from plasma.

The second project is a study of the metabolism of the central nervous system. In particular, the synthesis of acetylcholine is being investigated, together with the inhibition of this action by narcotics. Dr. Quastel has a theory that under ether or chloroform narcosis, free acetylcholine is released from a previously protein-bound form, producing the initial excitement phase. Following this, the narcotic inhibits the respiratory enzymes and thus prevents further synthesis of acetylcholine, resulting in true anesthesia.

Also under study is the metabolism (particularly the oxidation) of steroids and their effects on intracellular oxidations. Stilbestrol has been shown for

the first time to be, together with the normal co-enzymes of the cell, an intracellular hydrogen carrier.

The institute, which gets support also from the National Cancer Institute of Canada, received a three-year grant of \$30,000 from The Rockefeller Foundation in 1950. This money is to be used principally to provide trained permanent technicians.

#### UNIVERSITY OF WISCONSIN

##### ENZYME RESEARCH

In the 1948 Annual Report of The Rockefeller Foundation an account was given of a \$100,000 grant to the University of Wisconsin for the purchase of equipment in connection with the university's new Institute for Research in Enzyme Chemistry. In 1950 a \$20,000 grant was made to the University of Wisconsin in support of a research program on enzyme chemistry under the direction of Professor Philip P. Cohen, head of the Department of Physiological Chemistry. Professor Cohen is working at present on the problems of enzyme chemistry involved in the synthesis of urea and of peptide bonds. It is well known that proteins are formed by linking together, through peptide bonds, various amino acids. Thus, this program in the field of enzyme chemistry bears directly upon the fundamental problem of protein synthesis.

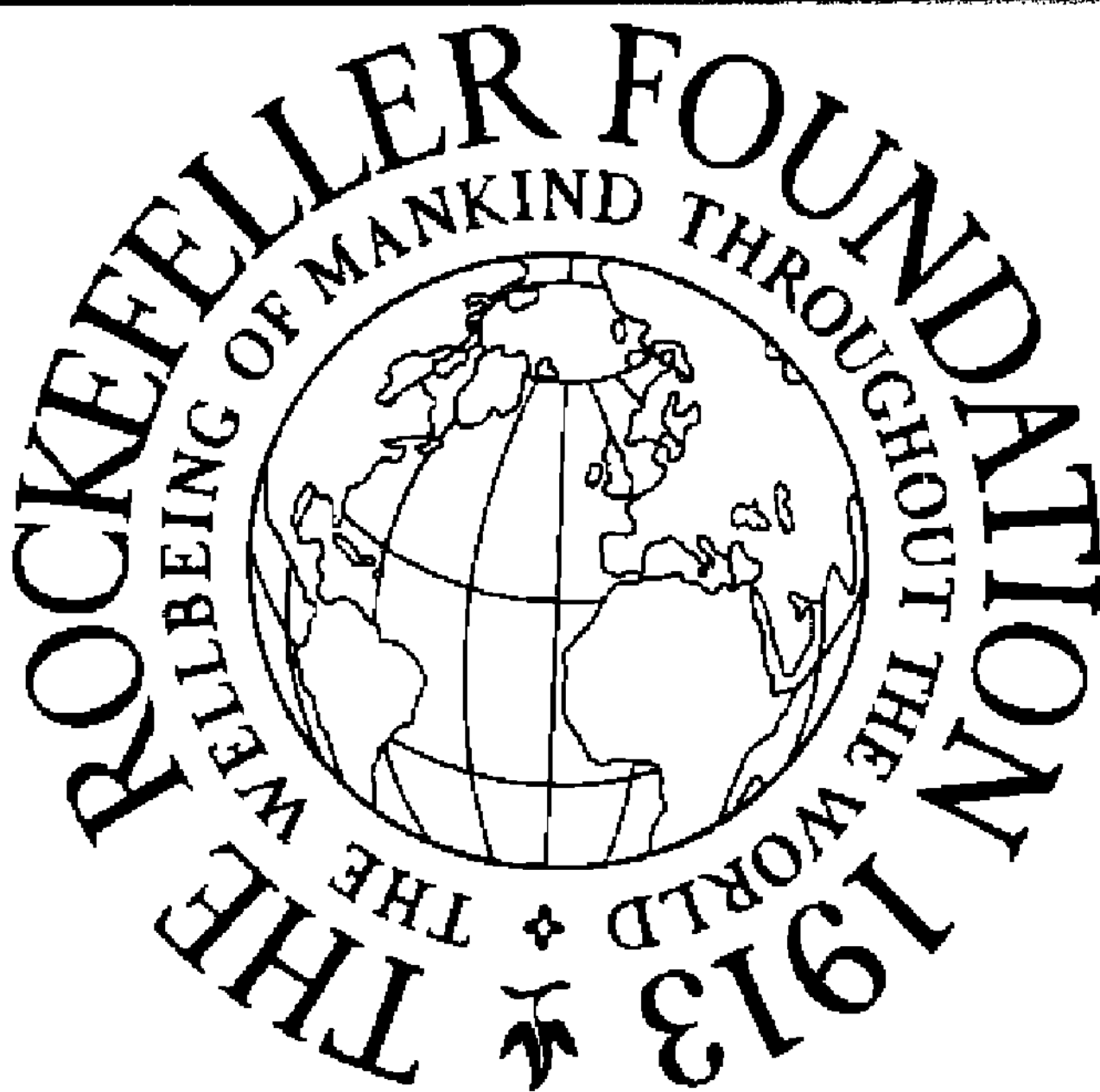
Professor Cohen's group is engaged in a long-range search to obtain information on the nature of energy-coupling reactions. In particular, the group is concerned with analyzing the reaction system

whereby ornithine is converted into citrulline. To date, this particular chain of reactions has been catalyzed only by relatively impure preparations. Recent studies give promise of effective purification of certain of the enzyme components required for this system.

#### LONG ISLAND BIOLOGICAL ASSOCIATION EXPENSES OF THE LABORATORY

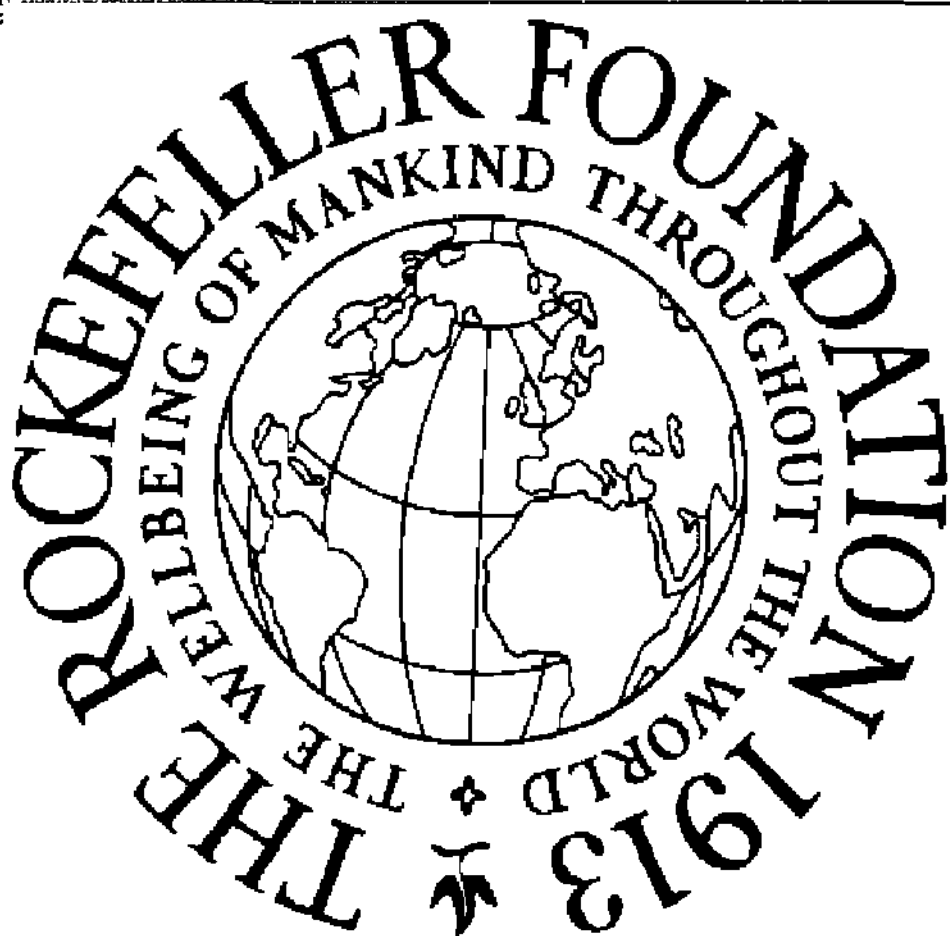
Among the most significant of present-day international scientific conferences are the annual summer symposia held at the Cold Spring Harbor Laboratory of the Long Island Biological Association. To these meetings, each of which is devoted to a new phase or topic in quantitative biology, come scientists from all over the world. Approximately 100 experts, representing a wide variety of disciplines, attend each symposium, spending several weeks studying the subject under consideration and exchanging views. The emphasis is not upon the classic divisions of science, but on the central problem. In this way the symposia serve as extremely valuable supplements to the more formal and particularized scientific meetings. In 1950, for instance, specialists in many different branches of biology turned their attention to the genetic aspects of population problems.

The Long Island Biological Association has a fairly extensive physical plant at the Cold Spring Harbor Laboratory, and an active program of research is conducted there all year round. The annual summer symposia, however, severely tax these facilities. The



Photograph Excised Here

Soil Perfusion Room, Montreal General Hospital



Photograph Excised Here

Radioactivity measurements at the Wenner-Gren Institute, Stockholm

A laboratory in the Botanical Institute, University of Bern



Photograph Excised Here



buildings and laboratories need considerable repair and renovation in order to continue to properly service the summer colloquia. To help the Long Island Biological Association meet the expenses of carrying out such work, The Rockefeller Foundation in 1950 made a grant of \$45,000, available for two years.

#### UNIVERSITY OF LONDON

##### BIOPHYSICS

Shortly after the close of the recent war Professor J. T. Randall, chairman of the Department of Physics at King's College, University of London, began to organize a research program aimed at applying the complex tools of modern experimental physics to the study of living tissues. In 1947 The Rockefeller Foundation assisted in this undertaking with a three-year grant of \$21,000; a further appropriation of \$37,000, available for four years, was made in 1950.

The work of the group is still largely concerned with the properties of single cells and their components. However, the project has matured and expanded considerably, so that it now constitutes what might be called a separate subdepartment of biophysics. The original staff of 15 has grown to more than 30 and now includes about seven senior physicists, two senior biologists, some 20 junior physicists and biologists, a biochemist and a number of part-time scientific consultants. In the last three years detailed studies have been completed on the ultramicroscopic structure of sheep spermatozoa, on the chemical nature of the liquid constituent of cell nuclei and on

the structure of tobacco mosaic virus crystals. Much attention has also been given to the perfecting of existing scientific apparatus and to the design of new analytical tools. In this sphere substantial progress has already been made in the development of an achromatic reflecting microscope, that is, a microscope which will refract light without breaking it up into its component colors. A number of new techniques for electron microscopy, ultraviolet photography and infrared spectroscopy have also been worked out.

At present Professor Randall and his colleagues are engaged in investigations on the infrared and ultraviolet analysis of nucleic acids in cells at rest and cells undergoing division; on the submicroscopic structure of chromosomes and of mitochondria, the granular or rod-shaped structures found in cytoplasm; on the properties of highly purified nucleic acid fibers; and on the use of cytochemical and ultraviolet methods for following the development and movement of nucleic acids and ascorbic acid (vitamin C) in plant root tips. Work is also in progress on the construction of a 500 kilovolt electromicroscope capable of giving exceedingly high penetration.

Professor Randall plans to invite several advanced British or foreign scientists to his laboratory for various lengths of time in order that they may avail themselves of the special equipment which his department possesses and, in turn, contribute to the research endeavors of the group their own particular specialized knowledge. Nine thousand dollars of the

Foundation's 1950 grant is toward the support of these visiting investigators; the remainder will be used for the salaries of junior personnel, for equipment and for research expenses.

#### UNIVERSITY OF WISCONSIN CYTOGENETICS

At the University of Wisconsin, Professor C. Leonard Huskins and a group of collaborators in the Department of Botany have for some years now been engaged in an active program of research in cytogenetics, combined with graduate training for young cytogeneticists. The program of the group under Dr. Huskins emphasizes research aimed at clarifying the basic concepts of cytology, which deals with the structure and functions of cells, and at bridging some of the current gaps between cytology, genetics and cellular physiology.

In the course of this effort the bases of accepted cytological and genetic theories have been re-examined and many of the classic concepts of both cytology and genetics have been challenged. Through painstakingly detailed investigation and the use of new techniques, Dr. Huskins and his colleagues have opened up new avenues of approach to the problem of how heredity operates.

The project at present follows three main lines of research. These are chromosome activity in somatic tissues, chromosome status in mature, differentiated tissue as opposed to embryonic or maturing tissue, and the effects of various chemicals and extracts,

particularly of substances natural to the cell, upon cell structure and function. The Rockefeller Foundation in 1950 appropriated \$30,000, available for three years, to the University of Wisconsin to continue the aid first granted in 1948 for support of this program.

#### UNIVERSITY OF BERN

##### THEODOR KOCHER INSTITUTE

The Theodor Kocher Institute, Bern, Switzerland, was established as a private research institution designed primarily to serve the interests of scientists whose work requires the elaborate and costly tools of biophysics, biochemistry and quantitative biology. Organized in 1948, the institute recently moved into a new building located between the Institutes of Physiology, of Chemistry and of Biochemistry of the University of Bern. Funds for the building and for much of its equipment were provided mainly from an endowment set up by the late Professor Theodor Kocher with his 1909 Nobel Prize; other financial contributions came from the Canton of Bern and the Swiss Confederation.

The institute functions as a center for advanced special studies rather than as a laboratory for routine work. Its facilities include highly specialized and complicated apparatus for work in such fields as radioactive isotope methods, mass spectrography, protein chemistry, electrophysiology, and plant and animal culture; equipment not available in the Kocher Institute itself is readily accessible in the adjoining institutes. Scientific administration of the

institute is vested in a committee composed of Swiss leaders in the fields of physiology, medicine, chemistry, agriculture and zoology; Professor A. von Muralt heads the committee. The regular staff of Swiss scientists is already at work in the institute, and plans have been made to have a number of scientists from other countries come to Bern for various lengths of time and partake in the work.

In July 1950 the Kocher Institute was formally transferred to the government of the Canton of Bern and became an integral part of the University of Bern. The cantonal government thereby accepted the responsibility for the major support and maintenance of the institute. In supplementation of this The Rockefeller Foundation in 1950 made a four-year grant of \$25,000 to the University of Bern; \$5,000 is for the purchase of special research equipment for the Theodor Kocher Institute and \$20,000 is to help defray expenses of visiting scientists.

#### COLUMBIA UNIVERSITY BIOCHEMISTRY

The problem of the biosynthesis of the porphyrins is an important one. These nonprotein substances occur universally in protoplasm and form the basis of the respiratory pigments, without which neither plant nor animal life could go on. The porphyrin constituent of hemoglobin, the pigment found in the red blood cells of animals, is known as heme. The detailed mechanism of the biological synthesis of this vital compound is the subject of an intensive research program conducted by Dr. David Shemin of the

Department of Biochemistry at the College of Physicians and Surgeons, Columbia University.

In this work Dr. Shemin employs as an experimental medium the nucleated red blood cells of the duck, which unlike nonnucleated mammalian red cells are capable of synthesizing heme outside the circulatory system of the living animal. In order to trace the steps involved in the synthesis, different derivatives of glycine and of acetic acid (the precursors of heme) labeled with  $C^{14}$ , the radioactive isotope of carbon, have been put to use. Dr. Shemin and his associates have worked out a method of degrading the resultant labeled heme molecule so that they are able to determine the exact source of each particular carbon atom of heme. The derivation of eight of the 34 carbon atoms contained in one molecule of heme has already been described. The influence of various metabolites on the synthesis of heme and the conditions necessary to prepare a cell-free system capable of carrying out heme synthesis have also been investigated. Isotope experiments are now in progress on the substances intermediary between glycine and heme and between acetic acid and heme.

The Rockefeller Foundation aided this project in 1948 and 1949 through two grants in aid. Foundation support was continued in 1950 with a two-year grant of \$14,400.

UNIVERSITY OF GENEVA  
ORGANIC CHEMISTRY

For many years the Department of Organic Chemistry at the University of Geneva, Switzerland,

has been a center for research on the constitution of cellulose, starch and proteins. Under the direction of Professor Kurt Meyer the department has emphasized the pure chemistry, as opposed to the biochemistry, of biological substances. Much effort has also been devoted to training young scientists in this type of research, and in particular, in the separation and purification of enzymes. At present a number of promising young research workers are collaborating with Professor Meyer on a variety of problems. The Rockefeller Foundation in past years has assisted the program directed by Professor Meyer through two small grants in aid for the purchase of equipment. In 1950 a three-year grant of \$15,000 was made to the University of Geneva, chiefly to provide stipends for two senior research assistants.

#### THE WORCESTER FOUNDATION FOR EXPERIMENTAL BIOLOGY

##### PHYSIOLOGY OF MAMMALIAN EGGS AND SPERM

The Worcester Foundation for Experimental Biology, Shrewsbury, Massachusetts, was formally organized in 1944 for research chiefly in steroid chemistry and basic biochemical problems. One of the foundation's most promising projects is that currently under way on the physiology of mammalian eggs and sperm. This program of study was aided by The Rockefeller Foundation in 1950 through a three-year grant of \$22,500.

Three major aspects of the problem are being considered. The first is an investigation of the factors involved in the activation and fertilization of the

mammalian egg. Here there are a number of questions to be answered. For instance, is the mechanism that initiates ovum development in the mammalian egg different from that for ova of lower animal species? Does the activating mechanism depend upon an enzyme or enzymes, is there a special activating substance in sperm, and does the process require the presence or the absence of oxygen? The second phase of the study centers on the processes that control ovum cleavage and growth, specifically, the enzymatic process that provides the chemical energy required for the initial step from one-celled ovum to two-celled embryo. The third part of the project revolves around the factors acting upon the ovum in the early stages which influence its later development. This investigation includes examination of the role played by specific nutrients, differences in temperature and various hormones. It is hoped that this experimental work on the very early embryology of the mammalian egg will contribute some of the fundamental information needed for a clear understanding of mammalian reproduction.

UNIVERSITY OF ILLINOIS  
INSECT BIOCHEMISTRY

The sum of \$12,000, available for two years, was appropriated in 1950 by The Rockefeller Foundation to the University of Illinois for support of a research program in insect biochemistry under the direction of Professor Clyde W. Kearns. Through his earlier studies on the relation between chemical structure



and toxicity Professor Kearns has become interested in the detailed mode of action of insecticides. His present project concerns the absorption, transport and metabolism of DDT in insects. A number of interesting discoveries have already been made. For instance, some insects, like the milkweed bug, metabolize DDT in a manner different from that of both warm-blooded animals and certain other species of insects; DDT-resistant house flies have an abnormal capacity to degrade DDT to a nontoxic metabolite called DDE and this degradation may occur in the upper layers of the insect's skin; only a minute fraction of the applied dosage of DDT required in practice to poison an insect ever penetrates through the skin by the time violent symptoms of poisoning or even death occur. Dr. Kearns and his colleagues are now trying to elucidate the fundamental biochemical mechanisms underlying these phenomena. These efforts can be expected to yield results of value not only for basic science but for important practical problems of insect control in the fields of public health and agriculture.

#### UNIVERSITY OF WISCONSIN

#### PHYSICAL CHEMISTRY AND BIOLOGY

In recent years, research at the University of Wisconsin has contributed to a rapidly expanding knowledge of the physical-chemical properties of proteins. Actively interested in this subject for many years, Professor J. W. Williams of the Department of Chemistry is now concentrating on the field of

immunochemistry, with special reference to the function of blood proteins in disease resistance.

Among the protein components of human blood are the gamma globulins, rich in antibodies (the defensive substances generated when a foreign protein known as an antigen is introduced into the blood stream). The antigen-antibody combination is therefore studied as a definite chemical reaction to which the basic physical-chemical principles of equilibrium and kinetics may be applied. Of primary importance is the exact knowledge of the interaction of proteins with each other and with other atoms and molecules. This information has become increasingly available by the use of certain physical-chemical tools, including electrophoretic analysis. A grant of \$15,000, to cover a three-year period, was made by The Rockefeller Foundation to the University of Wisconsin in 1950 to aid Professor Williams in continuing his research.

#### UNIVERSITY OF BRUSSELS BIOCHEMICAL EMBRYOLOGY

The University of Brussels, Belgium, in 1950 received a two-year grant of \$15,000 from The Rockefeller Foundation for research in biochemical embryology in the university's Laboratory of Animal Morphology. The program is directed by Professor Jean Brachet, a former Foundation fellow and the holder of the chair of experimental and chemical embryology in the Faculty of Sciences of the University of Brussels.

There are many approaches to the study of animal development. The group under Professor Brachet in the Laboratory of Animal Morphology concentrates on the chemical aspects of early embryonic growth and on biochemistry, particularly of proteins, at the cellular level. Among the investigations now going forward are the role of enzymes in regulating the development of the animal egg; the action of sera containing specific antibodies on structural development; the nature and functions of the acids found in cell nuclei on the various constituents of the cell; and the synthesis of peptides and proteins by living organisms. The Foundation's grant will be used for the purchase in the United States of three major pieces of equipment — an ultracentrifuge, a spectrophotometer and an electrophoresis apparatus — needed for this work.

WASHINGTON UNIVERSITY  
EXPERIMENTAL EMBRYOLOGY

The study of the growth and maturation of the nervous system bears not only on various aspects of general embryology but also on the origin of behavior and on the origin of structural and functional deficiencies of the nervous system. For a number of years this problem of how the nervous system develops, starting with the very beginning of life, has been the focus of a research program in the Department of Zoology at Washington University, St. Louis. Under the direction of Dr. Viktor Hamburger, a former Rockefeller Foundation fellow and

now head of the department, a group of research workers in neuroembryology have been applying the delicate techniques of experimental embryology to analysis of the factors controlling differentiation of nerve cells and outgrowth of nerve fibers.

One of the techniques they have used to modify nerve patterns and influence the outgrowth of nerve fibers is known as embryonic transplantation. In this procedure, supernumerary limb buds are grafted onto young embryos (usually chicks), which then attract extra nerve cells. A variant of this manipulation consists of removing the bit of tissue destined to become a limb from the young embryo and thereby inhibiting outgrowth of the fibers that would normally innervate the limb. In this way it has been possible to study both quantitatively and qualitatively the finely balanced interactions between the growing nervous system and the structure to be supplied with nerves.

Current experiments deal with the affinities of specific nerve centers for specific tissues, that is, the reasons why motor nerves connect unfailingly with muscles alone and sensory nerves only with sense organs. Work is also going forward on the biochemical aspects of differentiation, specifically, on the roles that enzymes play in carrying out vital developmental phenomena. Dr. Florence Moog is in charge of this portion of the program.

The work in experimental embryology at Washington University has had the support of The

Rockefeller Foundation since 1936. Aid was continued in 1950 with a three-year grant of \$31,200.

#### UNIVERSITY OF BERN

##### PLANT PHYSIOLOGY

The chief research aim of the program in plant physiology and biochemistry at the Institute of Botany of the University of Bern, Switzerland, is the study of vitamins and antivitamins. Under the direction of Professor W. H. Schopfer, scientists there have devised several new methods for the identification, assay and biosynthesis of these substances. At present Professor Schopfer and his staff are attempting to determine which constituents of the cell are responsible for the elaboration of vitamins and antivitamins and are studying the distribution of both classes of compounds in plants. Work is also in progress on the interrelations and antagonisms which exist between vitamins and antivitamins in both the normal and pathologic metabolism of microorganisms and higher plants.

With the aid of the cantonal government, the University of Bern is completing the construction and equipment of a new building to house the Institute of Botany. These new laboratories will permit expansion of the research program of Professor Schopfer and his colleagues. The Rockefeller Foundation in 1950 appropriated the sum of \$10,000, available for two years, to the University of Bern for specialized equipment for the new institute.

UNIVERSITY OF MANCHESTER  
ORGANIC CHEMISTRY

The Department of Organic Chemistry at the University of Manchester is one of Great Britain's outstanding centers for chemical research and for the training of young chemists. The department, headed by Professor E. R. H. Jones, provides instruction for a large number of undergraduate and graduate students and also furnishes research facilities for 45 candidates for higher degrees. The vigorous research program of the department has purposely been kept broad in scope so that both staff members and student research workers may develop and pursue their own interests. At present, investigations in the department follow five main lines:

1. A survey of the sterols (alcohol-like compounds of high molecular weight) produced by microorganisms, some of which might prove convenient for the ready preparation of cortisone and other allied sterols, of interest because of their action in rheumatoid diseases.
2. Study of a group of hydrocarbons known as triterpenes.
3. Attempts at the synthesis of vitamin A<sub>2</sub> and of various carotenoids, compounds which enter into the formation of the vitamin.
4. Work on a class of compounds which form simple molecules constructed like long chains. These substances are of great interest for X-ray analysis and for studies on the strength of the bond between the various atoms in the molecule.
5. Studies on the chemistry of nucleic acids and nucleotides.

All these investigations would be very much facilitated and increased in value through the use of an infrared spectrophotometer. The Department of Organic Chemistry receives generous support for its activities from the university, but dollar funds to purchase this piece of equipment in the United States are not available. The Rockefeller Foundation in 1950 therefore made a one-year grant of \$15,000 to the University of Manchester to permit acquisition of the apparatus.

#### JOHNS HOPKINS UNIVERSITY BIOCHEMISTRY

The Rockefeller Foundation has made a two-year grant of \$20,000 to Johns Hopkins University for the use of the university's McCollum-Pratt Institute in pursuing a program of biochemical research. The institute was established at Johns Hopkins in 1947 "for the study of trace elements in nutrition." These trace elements, or micronutrients, are essential substances required in very small amounts for plant and animal metabolism. Under the direction of Dr. William D. McElroy, an outstanding staff of biochemical investigators has made considerable progress in studying these aspects of nutrition at the enzyme level.

The main emphasis of the institute is on the mechanisms by which the cell converts the latent, oxidative energy of foodstuffs into the phosphate bond energy that uniquely serves as a "power supply" for all the reactions concerned with growth

and repair. These reactions, in which magnesium seems to be a vital component, are isolated in soluble form for an investigation of the individual steps involved in the transfer of electrons from substrate to oxygen. The role of phosphate in each step is carefully analyzed. Dr. McElroy proposes to explore this field using not only mammalian tissues as the enzyme source, as has previously been done, but also microorganisms and higher plants. In these studies special attention is paid to the functional significance of the trace elements, which include magnesium, manganese, cobalt, boron, iodine and iron.

The Foundation grant is to enable the institute to extend its activities and investigate further problems in phosphate metabolism, and also to employ additional technicians.

#### UNIVERSITY OF WASHINGTON

##### MICROANATOMY

The University of Washington School of Medicine, Seattle, was established in 1945. One of the major aims in organizing the program and appointing the staff of the school has been to assure a healthy emphasis on basic research. This is particularly true in the Department of Anatomy, where Professor H. Stanley Bennett heads a team that includes a neuro-anatomist working with isotope techniques, an expert in phase microscopy and an X-ray diffractionist, as well as the more conventional specialists. Plans have also been made to add a spectroscopist and an



associate professor specializing in electron microscopy to the departmental staff.

The department has recently moved into the new building erected to house the School of Medicine, and its quarters are now equipped with the extensive tools needed for an active research program in anatomy. One of the most important of these tools, an electron microscope, was provided in 1950 by a one-year grant of \$17,500 from The Rockefeller Foundation. With this machine, Professor Bennett and his associates are now in a position to pursue fully their analysis of the minute details of structure and function of the single cell and its components.

#### UNIVERSITY OF EDINBURGH

##### BIOCHEMISTRY

A two-year grant of \$17,000 has been made by The Rockefeller Foundation to the University of Edinburgh, Scotland, for the purchase of a Spinco analytical ultracentrifuge with accessories. The equipment facilitates studies conducted by Professor Edmund Langley Hirst of the Department of Organic Chemistry.

Professor Hirst is in the midst of a program of research on 1) starches, including wood starches and a series of polysaccharides derived from protozoans; 2) celluloses and hemicelluloses derived from wood, seaweeds and cereal grains; 3) plant gums and mucilages, including seaweed products; and 4) the chemistry of growth and aging processes in grass and fodder plants, particularly an investigation of

the stage of growth at which the maximum concentration of carbohydrates occurs. The last project, carried out in conjunction with the university's Department of Agriculture, may lead to better methods for the harvesting and preservation of crops.

#### OTHER GRANTS IN EXPERIMENTAL BIOLOGY

In addition to the grants already described The Rockefeller Foundation in 1950 made appropriations of \$8,000 or less to seven institutions to help meet special needs in the field of the natural sciences. These appropriations were as follows:

The sum of \$5,700 was set aside to assist the UNIVERSITY OF EDINBURGH, Scotland, in establishing predoctoral scholarships in genetics over a period of four years. The students appointed (up to three per year) under this program will work in the Department of Animal Genetics under the direction of Professor C. H. Waddington.

The KAROLINSKA INSTITUTE, Stockholm, received \$5,000 as a two-year contribution toward the purchase in the United States of equipment for research at the Anatomical Institute under the direction of Dr. Fritiof S. Sjöstrand. Dr. Sjöstrand is concerned with anatomy at the microscopic and ultrastructural level, particularly the minute structure of retinal and other sensory cells. The funds are to be used for additional parts for the electron microscope employed in his studies, an apparatus for shadow-casting

tissue preparations and new tools for cutting ultra-thin tissue sections.

Aid was renewed for the researches carried out by Professor G. C. Heringa in the Laboratory of Histology of the UNIVERSITY OF AMSTERDAM, Netherlands, with a three-year appropriation of \$4,500. In this laboratory the most modern tools of spectrophotometry and X-ray crystallography are applied to the study of cells at the biochemical and molecular levels. Dr. Heringa and his staff are especially interested in the structure and water-binding capacity of collagen and other constituents of connective tissue, in the chemistry of the enzyme phosphatase and its production by cells, in the role of mucoproteins in the development of the cornea, and in the histochemistry of blood, bone, kidney and the endocrine glands. The Foundation's first support for this program was a grant in aid in 1947.

Support in the form of grants in aid had similarly been provided in the past for the biochemistry research program directed by Professor John L. Wood of the UNIVERSITY OF TENNESSEE at Memphis. In 1950 a grant in the amount of \$7,000 furnished another two years' aid for this project on the step-by-step metabolism of the sulfur-containing amino acids. Professor Wood and his staff have been working with microchemical and isotope tracer techniques and have already succeeded in developing methods for synthesizing two of these acids, cystine and methionine, with radioactive sulfur.

An appropriation of \$8,000 to SMITH COLLEGE, Northampton, Massachusetts, extended for another 12 months the assistance The Rockefeller Foundation has given since 1942 to the genetics research program of Professor A. F. Blakeslee. Professor Blakeslee, a former member of the Carnegie Institution of Washington, is a specialist in plant genetics, and he and his co-workers are utilizing plant materials for their investigations of basic problems in genetic science. Amherst College, Mount Holyoke College and the University of Massachusetts maintain an active interest in the work in genetics at Smith, and the four schools regularly hold joint seminars and conferences on their individual programs and on developments in genetic science in general.

Advancement of the field of microbial genetics is the aim of another 1950 Foundation grant. There are in various European countries a number of scientists interested primarily in the genetics of microorganisms who feel that their research would be greatly benefited if they could meet periodically under fairly informal circumstances to discuss new ideas and techniques. Accordingly, several men from Scotland, England, France, Italy, Denmark and Sweden have made plans to hold two relatively small symposia on microbial genetics. About 25 persons actively working in this field will be invited to these working conferences, the first of which will be held in Copenhagen in 1951 and the second in 1953 or early 1954, probably in Cambridge or Paris. The UNIVERSITY OF COPENHAGEN, Denmark, has accepted

the responsibility of administering the \$5,000 fund allocated by The Rockefeller Foundation toward expenses of the meetings.

A three-year grant of \$4,200 went to the UNIVERSITY OF STOCKHOLM, Sweden, for research in radiobiology under the direction of Professor George Hevesy. Dr. Hevesy's radiobiological studies have received Rockefeller Foundation support through appropriations and grants in aid since 1930, first at the University of Freiburg and more recently at the University of Copenhagen and the University of Stockholm. In 1949 Professor Hevesy was awarded the Copley Medal of the Royal Society of Great Britain "for his distinguished work on the chemistry of radioactive elements and especially for his use of isotopes as tracers in the study of biochemical problems." His present investigations at the University of Stockholm deal principally with the chemical effect of X-radiation on tissues and on the uptake of various isotopes by living cells.

## AGRICULTURE

### MEXICAN AGRICULTURAL PROGRAM

The Mexican Agricultural Program is aimed at improving the volume and quality of the basic food crops of Mexico and at developing additional trained Mexican personnel for agriculture. A full account of this work was presented in the 1949 Annual Report of The Rockefeller Foundation.

The program now includes the following main activities: 1) corn improvement; 2) improvement of

wheat and other small grains; 3) increased attention to the protection of beans from plant diseases and insect pests; 4) introduction, testing and distribution of forage legumes and grasses; 5) study of methods of soils management and conservation; 6) plant pathological studies as related directly to the diseases of corn, beans, potatoes, tomatoes and other vegetables; 7) entomological researches related to the production of Mexico's chief field and vegetable crops; 8) studies related to the management and enrichment of Mexican soils, including heavy emphasis on green manures; 9) attention to auxiliary crops, including sorghum, soybeans, legumes, grasses and vegetables; 10) demonstration of the possibility of raising good potatoes in Mexico, using native Mexican seed; 11) cooperation with the Mexican government in the production and distribution of improved seeds; 12) training of technical agricultural personnel; 13) cooperation with other agricultural projects in Latin American countries.

The 1951 plans call for continuation of this program, and for the expansion of work on potatoes, vegetable crops and pasture problems; the start of work on poultry and pigs; and intensified production of corn varieties for regions of Mexico not as yet benefited by this program. The Rockefeller Foundation has appropriated for the Mexican Agricultural Program the sum of \$309,700 for the year 1951. The publication program of the project continues to grow in response to an active demand for

the technical and popular bulletins concerning the progress of this work.

#### LATIN AMERICAN SCHOLARSHIPS IN AGRICULTURE

Approximately two years after the inception of the Mexican Agricultural Program in 1943, a grant of \$5,000 made to the Faculty of Agronomy at Medellín, Colombia, enabled that faculty to send one or two top students of each graduating class to Mexico for a year of practical training. Candidates were selected on the basis of character, initiative and academic record. The experiment was so successful that the same opportunities were extended two years later to graduates of the Faculty of Agronomy at Palmira, the second constituent agricultural school of the National University of Colombia. Subsequently other grants to these two institutions provided modest funds to keep up a small but steady stream of trainees in practical agricultural fields. The purpose of these grants was to provide a stimulus to the student body; to supplement theoretical training by intensely practical work, under conditions similar to those in the trainees' own countries; and to strengthen the international aspect of the Mexican program.

In an effort to extend the same type of assistance to faculties of agronomy in other Latin American countries, including Peru, Bolivia and Brazil, The Rockefeller Foundation has made available \$50,000 to provide a year's training in Mexico for approximately 24 young Latin American graduates in

# Second Intentional Exposure

agriculture. The money to support these Latin American scholarships to the Mexican Agricultural Program will be available for the period ending December 31, 1953.

## COLOMBIAN AGRICULTURAL PROGRAM

A plan adopted in 1949 for undertaking in Colombia, at the invitation of its government, a collaborative program in agriculture, similar to the one now operating in Mexico, has now been further implemented with a Rockefeller Foundation grant of \$50,000 for one year. As in the Mexican program, the purpose is to improve the yield and the quality of basic food crops of the people, with emphasis on corn and wheat. The initiation of the Colombian program was preceded by the development of resources both in trained men and in materials at the two national colleges of agriculture at Medellín and Palmira.

The collaborative program officially began on May 15, 1950, when Dr. Lewis M. Roberts, a corn breeder, and Dr. Joseph A. Rupert, a wheat breeder and agronomist, both previously on the Foundation staff in Mexico, began their duties in Colombia. It is too soon to report on the technical progress being made, for the pace of agricultural programs, as set by nature, is of necessity measured by years rather than by months. However, Dr. J. G. Harrar, who is in general charge of the field operation in Colombia as well as the work in Mexico, and who enjoys the fullest cooperation of the Colombian Ministry of Agriculture and the technical agricultural personnel,





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The Inter-American Institute of Agricultural Sciences, Turrialba

Dedication of a new agricultural experiment station in the State of Hidalgo, Mexico, 1957

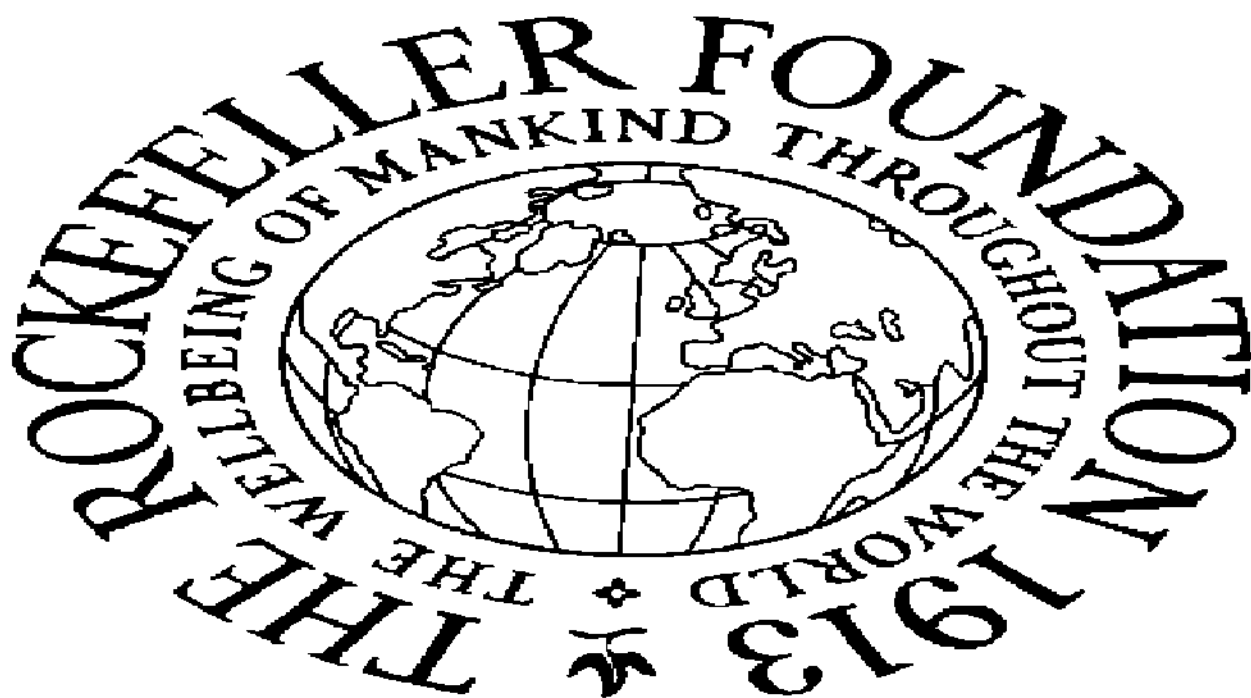


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Research in population ecology of flour beetles at the University of Chicago. Flour siftings yield living stages of beetles, which can then be examined for species and recorded in the census



Photograph Excised Here

Crystals of the pure enzyme, amylase, obtained in the Laboratory of Organic Chemistry of the University of Geneva. Left to right, top and bottom: pig pancreas; human saliva; human pancreas; *Bacillus subtilis*

states that all original goals in respect to finances, availability of personnel and acreage have been considerably surpassed.

The 1950 Rockefeller Foundation grant is contributing to the salaries and traveling expenses of staff members as well as to the equipment and general expenses of this program.

#### NATIONAL UNIVERSITY OF COLOMBIA FACULTIES OF AGRONOMY

The Rockefeller Foundation has been assisting work in agriculture at the National University of Colombia since 1944, first through grants to the Faculty of Agronomy at Medellín and later through grants to the more recently formed Faculty of Agronomy at Palmira. Foundation aid to the two faculties for the training of personnel and for equipment during this period comes to approximately \$200,000. Further support was provided in 1950 through two additional appropriations, both aimed at expediting the training of personnel.

In the years since 1944 the Faculties of Agronomy of the National University have played an increasingly prominent role in advancing the status of agriculture in Colombia. Their work contributed importantly to the establishment of the operating program in agriculture begun in 1949 as a cooperative venture of the Colombian government and The Rockefeller Foundation (see above), and their activities continue to represent a key aspect of that program. Imported North American personnel can

introduce improved agricultural practice and can help develop improved seed materials. But the ultimate and long-range success of any operating program in agriculture depends clearly on the possibility of training a good enough and large enough body of local agriculturalists. This consideration motivated the Foundation's past appropriations to the university to enable the two faculties to appoint promising graduating-class students to special training scholarships under the direction of The Rockefeller Foundation's agricultural staff in Mexico. The plan has proved extremely effective, and the first of the two 1950 Rockefeller Foundation grants was made to continue the scholarships. The sum of \$9,000 was appropriated for the benefit of five students from the Palmira faculty during the period ending December 1952.

The second Foundation grant approaches the problem of training Colombian personnel from a different angle. This grant, in the amount of \$50,000, is designed to improve the agricultural educational situation in Colombia itself. The recruitment of a sufficient number of good students and the effectiveness of their training at both faculties have in the past been handicapped seriously by the lack of housing facilities for students. The activities of a large and busy city are distracting to the students at Medellín, and at Palmira the nearby student accommodations are not satisfactory. To overcome these obstacles the university plans to build two new dormitories, one at each of the campuses. In view of the important

relation of agricultural education to the joint Colombian-Foundation operating program in agricultural research, The Rockefeller Foundation took exceptional action in 1950 in providing \$50,000 toward the cost of these two dormitories.

UNIVERSITY OF SAN MARCOS  
FACULTY OF VETERINARY MEDICINE

Professional training in veterinary science in Peru began in 1940 with a specialized course for military officers, designed to supply veterinarians for the army. This was expanded in 1943 into a Military Veterinary School, and in 1946, in recognition of the general needs of the country for trained veterinarians, the school became the Faculty of Veterinary Medicine of the University of San Marcos, Lima. Here, Dean José Santivanez M. has succeeded in building up a promising staff of young and well-qualified men, and much progress has been made in developing a curriculum of broad professional training. The Rockefeller Foundation in 1949 provided the sum of \$14,000 to the faculty for the purchase of equipment and supplies. In 1950 aid was renewed with a grant of \$66,000, available until the end of 1953.

One of the faculty's principal aims is to overcome Peru's present meat shortage, primarily through an attack on animal diseases. In order to provide the corps of veterinary specialists required for such a task, the faculty has undertaken to enlarge its student body, its program and its plant. A Latin American Veterinary Congress will meet in Lima

during October 1951 under the auspices of the Faculty of Veterinary Medicine to discuss animal diseases of major economic importance, veterinary public health and veterinary education. The University of San Marcos is appointing three full-time professors in the faculty. The presence of these men, the first full-time professors to be named to any faculty in the 400-year old university, will considerably strengthen the Faculty of Veterinary Medicine. The university has also given high priority to the construction of permanent buildings for the faculty in the new university city. The Foundation's grant furnishes \$23,000 for the purchase of equipment and supplies for the Department of Parasitology, the Department of Bacteriology, the mobile laboratory-clinic and the small-animal clinic; the remaining \$43,000 of the appropriation will provide equipment and supplies for the large-animal clinic, the dairy barn and the poultry research station when the appropriate buildings have been completed.

#### INTER-AMERICAN SYMPOSIUM ON PLANT PESTS AND DISEASES

Stimulated by the success of the 1949 Inter-American Symposium on Plant Breeding, The Rockefeller Foundation sponsored another technical agricultural conference in 1950. The subject this time was plant pests and diseases. A ten-day series of meetings was held in and near Mexico City at the end of September and the beginning of October, again under the auspices of the Office of Special

Studies of the Mexican Secretariat of Agriculture and Animal Industry. Delegates from Brazil, Chile, Colombia, Costa Rica, Cuba, Ecuador, El Salvador, Guatemala, Honduras, Peru, Mexico, the United States and Uruguay attended and participated in the symposium and the field trips. Members of the Foundation's agricultural staff in Mexico accepted the responsibility for the immediate direction of the proceedings and also reported specific results of that portion of their program dealing with plant pests and diseases. The travel and living expenses of visiting delegates to the symposium were defrayed by means of The Rockefeller Foundation's \$12,500 appropriation.

INTER-AMERICAN INSTITUTE OF  
AGRICULTURAL SCIENCES  
TROPICAL DAIRY CATTLE PROJECT

In spite of the traditional Spanish interest in stock-raising, agricultural research in Latin America has centered largely on plant problems. A notable exception to this general pattern is the work of the Animal Industry Division of the Inter-American Institute of Agricultural Sciences, Turrialba, Costa Rica. A prominent feature of the current program of the division, which is headed by A. O. Rhoad, is the project dealing with tropical dairy cattle, for which The Rockefeller Foundation in 1950 made a grant of \$11,100 to the institute.

The aim is to develop a superior strain of dairy cattle by applying modern genetic and breeding

techniques to the improvement of native races of cattle. The decision to conserve and utilize the genes present in existent stocks is based on the fact that such animals are descended from the original importations of the Spaniards and hence are now highly adapted to the prevailing climatic conditions. As a result of a thorough search, native cattle of above-average quality were located in an isolated region in Nicaragua. Several cows were purchased there and brought back to the institute, where two of them are at present producing more milk than any others, including the imported purebreds, in the institute herd. The institute therefore proposes to buy about 50 additional, carefully selected cows and two bulls from this same locality; these will serve as basic stock for controlled breeding experiments seeking to develop a commercially important type. The Foundation's grant, which is available until the end of 1952, provides for the cost of the animals, for the expenses of transporting them and of maintaining them for the first year, and for graduate fellowships for two Latin American students who will work on the project. It is expected that after the first year the herd itself should be self-supporting by virtue of its milk production.

#### OTHER GRANTS

##### UNIVERSITY OF SÃO PAULO

##### NATURAL SCIENCES

Since 1942 a total of \$174,400 has been granted by The Rockefeller Foundation to the University of



São Paulo, Brazil, for work in the natural sciences. This has included support for the Department of Physics as well as funds for research equipment and supplies for the programs in biology, geology and paleontology, botany, mineralogy, zoology, biochemistry and other fields. The earliest grants to the University of São Paulo were in the physical sciences, but emphasis has gradually shifted to support in experimental biological fields; in addition, during the last few years more attention has been given to opportunities to improve the quality of teaching in the agricultural faculty and to assist agricultural research programs.

The São Paulo faculties, together with certain affiliated state institutions for research in agriculture, constitute one of the foremost teaching and research centers in Latin America. A large number of professors and investigators occupy full-time posts, and conditions with regard to such important factors as equipment, libraries and salaries are good. The Foundation in 1950 made a grant of \$113,600 to the University of São Paulo and two affiliated institutions. The funds are almost entirely for support of activities in the two major branches of the Natural Sciences program, experimental biology and agriculture. Details of the appropriation are as follows: The Faculty of Philosophy, Sciences and Letters received aid for research mainly in experimental biology in such fields as genetics, general physiology, biochemistry, plant physiology and genetics (\$30,000 over three years) and for the establishment of a marine biological station (\$10,000 over two years).

The University Radiochemistry Laboratory in the Faculty of Medicine was granted \$13,600 over two years for work with radioactive isotopes in experimental biology and medicine. To the School of Agriculture (located at Piracicaba) went the sum of \$20,000, available for two years, for use principally in the Departments of Entomology, Plant Pathology, Botany and Mathematics. The sum of \$20,000 was allocated for use during a two-year period by the Instituto Agronômico (a university-affiliated institution centered at Campinas), chiefly for work in microbiology and irrigation. The Instituto Biológico (an affiliated institution located in the City of São Paulo, with a large experimental farm near Campinas) likewise received a two-year appropriation of \$20,000, principally for work on plant viruses and animal and plant pathology.

#### ROYAL INSTITUTION OF GREAT BRITAIN

##### DAVY FARADAY RESEARCH LABORATORY

Outstanding staffs and pioneering research have given the Royal Institution of Great Britain a distinguished historical position in English science. Twenty years ago a Rockefeller Foundation appropriation of £23,000 was made to the Royal Institution, of which £20,000 was to be used for the endowment of the Davy Faraday Laboratory. Since that time the studies of the laboratory have ranged from crystal physics to colloid chemistry, according to the particular interest of each director. While many aspects of the present activities of the Davy Faraday

Laboratory lie outside the fringe of experimental biology, the program centers about general scientific problems which cannot but increase our knowledge of living things.

Under the new director, Professor Edward Neville da Costa Andrade, research is concentrated on the field of classical physics. It is Professor Andrade's purpose first to clarify fundamental physical problems by studying simple cases of pure liquids and metals, and then to throw light on certain biological problems by investigating extremely complex liquids and solids such as nucleic acid compounds, the constituents of the living cell and muscle fibers. This involves continued studies of the viscosity of liquids, the plastic and flow properties of metals, the physics of rubber elasticity, and the development of methods for the analysis of complex liquid systems by the method of small angle scattering X-ray analysis.

A Rockefeller Foundation grant in aid in the amount of \$1,400 was made last year for the purchase of a Beckmann spectrophotometer. A current grant of \$11,000 is to be used largely toward the purchase of equipment for making the specialized instruments necessary to carry on the research of the laboratory.

#### PRINCETON UNIVERSITY

##### SOCIAL PHYSICS

Toward research in social physics under the direction of Professor John Q. Stewart, The Rockefeller Foundation has appropriated to Princeton University \$15,000 for the year beginning January 1,

1951. Professor Stewart is a physical scientist and astronomer interested in discovering quantitative uniformities in social phenomena which obey, to some significant degree, certain general laws of the type which have been found important in physics. He has for some time been holding informal group meetings with physical and social scientists, at which ideas along the lines suggested are critically examined. There is an attempt also to subject to critical scrutiny the extent to which it is possible to apply the terminology and mathematical formulas of physics to a description of the interchange of messages and commodities between different social communities.

#### GRANTS IN AID

The Natural Sciences division was allotted \$250,000 to use for grants in aid in 1950. With this fund 39 grants in aid were made to universities and colleges where long-range research projects are directed by natural science faculty members. In many instances additional apparatus and highly trained technical assistants were needed for the progress of the research. There were also 12 general grants for scientific projects, made principally to Latin American universities and government agencies concerned with the improvement of agricultural standards throughout that area. A third group of 28 grants was made by the Natural Sciences division in order that scientists of various nations might travel to centers of research and study outside of their own countries.

## UNIVERSITIES AND COLLEGES

American University of Beirut, Lebanon Research of Dr. Edward S. Kennedy in the study of Islamic mathematics and astronomy	\$ 1,000
Collège de France, Paris Apparatus and chemicals to be used under the direction of Professor Jean Roche, Laboratory of General and Comparative Biochemistry	700
Columbia University, New York Research on selenium by Dr. Sam F. Trelease, Torrey Professor of Botany	8,000
Harvard University, Cambridge, Massa- chusetts To permit Dr. Gino Turrin, professor of mathematics at the Faculty of Human- ities, San Luis Center, University of Cuyo, Mendoza, Argentina, to work for a year with Professor Oscar Zariski, De- partment of Mathematics, Harvard	2,750
Iowa State College, Ames Assistance for a study of the nature of protein denaturation by Professor Jo- seph F. Foster, Department of Chemistry	3,600
Iowa State College, Ames Assistant in biochemistry and the pur- chase of required chemical materials for Associate Professor Robert L. Sin- sheimer, Department of Physics, for his work in the field of molecular biology	5,000
Karolinska Institute, Stockholm, Sweden Purchase of equipment to be used in experimental histology under the direc- tion of Professor Hjalmar Holmgren, Department of Experimental Histology	2,000

Karolinska Institute, Stockholm, Sweden Toward purchase of two Sorvall type centrifuges to be used by Professor J. Erik Jorpes, Institute of Chemistry	\$ 3,500
Michigan State College, East Lansing Assistance and technical help for Associate Professor Charles L. Hamner, Horticulture Department, for his research in plant biochemistry	10,000
Ministry for Foreign Affairs, Israel, Department for Cultural Relations Contribution toward the <i>Journal d'Analyse Mathematique</i> , under the direction of Professor Binyamin Amira	7,500
National University of Chile, Santiago Research in experimental biology under the direction of Professor Gabriel Gasic L., Institute of Biology, Faculty of Medicine	3,900
Northwestern University, Evanston, Illinois Equipment and assistance to aid the research of Professor George H. Mickey, Department of Biology	5,000
Purdue University, Lafayette, Indiana Research by Professor Heinrich Koffler, Department of Biological Sciences, on the biological and chemical nature of microbial flagella	5,000
Royal North Shore Hospital of Sydney, Australia Toward purchase of equipment to be used under the direction of Dr. R. Lemberg, Institute of Medical Research, in the field of porphyrin chemistry	3,000

Rutgers University, New Brunswick, New Jersey Research of Professor Alan A. Boyden, Department of Zoology, for the Sero- logical Museum at Rutgers	\$ 5,000
University College, London, England Equipment for research in mammalian genetics under the direction of Dr. Hans Gruneberg, Department of Biometry	2,500
University of Amsterdam, Netherlands Toward expenses of research in X-ray crystallography under the direction of Professor Caroline H. MacGillavry, Laboratory of General and Inorganic Chemistry	1,000
University of Basel, Switzerland Contribution toward the salary of Dr. Max Brenner of the Institute of Organic Chemistry	2,300
University of Bristol, England Purchase of equipment and supplies to be used in research under the direction of Professor J. M. Yoffey, Department of Anatomy	3,500
University of California, Berkeley Contribution toward the research of Professor Roger Y. Stanier of the De- partment of Bacteriology, who is work- ing with Dr. Osamu Hayaishi of the Enzyme Institute, University of Wis- consin, Madison	4,500
University of Cambridge, England Continued research on protein structure by H. B. Dyer at the Cavendish Labora- tory	1,040

University of Copenhagen, Denmark Contribution toward the purchase of amino acids and spectrophotometer for use of the Chemistry Institute, under the direction of Dr. E. Hoff-Jørgensen	\$ 1,000
University of Copenhagen, Denmark Purchase of equipment for use under the direction of Dr. Poul W. Kruhøffer, Institute of Medical Physiology	2,970
University of Dublin, Trinity College, Eire Purchase of equipment to be used under the direction of G. W. P. Dawson, School of Botany, in the field of genetics	950
University of Edinburgh, Scotland Toward cost of building a planimeter-type machine for computation of X-ray crystallographic data under the direction of Dr. C. A. Beevers of the Dewar Crystallographic Laboratory	1,128
University of Geneva, Switzerland Toward the purchase of equipment to be used under the general direction of Professor E. Briner of the Laboratories of Technical, Theoretical and Electro-Chemistry	5,000
University of Liège, Belgium Research on the physical chemistry of biologically important substances, under the direction of Professor Victor Desreux, Institute of Physical Chemistry	3,000
University of Louvain, Belgium Toward the expenses of research in biochemistry under Professor Christian de Duve, Laboratory of Physiological Chemistry	3,000



University of Michigan, Ann Arbor Research by Professor G. B. B. M. Sutherland, professor of physics, in the field of infrared spectroscopy	\$ 6,375
University of Mysore, India Microspectrometric equipment for the research of Professor B. R. Seshachar, Department of Zoology	2,000
University of Oslo, Norway Purchase of chemicals and equipment to be used by the Institute for Nutrition Research, under the general direction of Professor Ragnar Nicolaysen	700
University of Oxford, England Toward the purchase of a Spinco refrigerated preparative centrifuge, to be used by Professor R. A. Peters, Department of Biochemistry, and his group interested in the problems of protein chemistry	6,260
University of Rochester, New York Support of research of Professor Elmer Stotz, School of Medicine, to continue his work on the purification of the enzyme cytochrome oxidase	6,000
University of Strasbourg, France Toward the purchase of a mirror spectrometer to be used under the direction of Professor André Chevallier, Institute of Biological Physics, Faculty of Medicine	3,000
University of Turin, Italy Specialized equipment for the Institute of Human Anatomy under the direction of Dr. Rodolfo Amprino	1,850

University of Uppsala, Sweden	
Equipment to be used under the direction of Professor Per Eric Lindahl, Institute of Zoophysiology	\$ 2,000
Washington University, St. Louis, Missouri	
Toward the research of Professor Barry Commoner, Department of Botany	5,000
Washington University, St. Louis, Missouri	
Equipment and expenses related to the genetics research of Dr. Harrison D. Stalker and Dr. Hampton L. Carson, Department of Zoology	6,600
Yale University, New Haven, Connecticut	
Toward the enzyme chemistry research of Dr. Julian M. Sturtevant, associate professor of chemistry	6,000

## GENERAL

Mexican Agricultural Program Documentary Film	
Costs of producing a documentary film, in English and Spanish, covering the activities under the Mexican Agricultural Program	8,504
Mexican Agricultural Program Six-Year Summary Report	
Costs of a publication on the work done by the Mexican Agricultural Program from 1943-1949	10,000
Ministry of Agriculture and Animal Industry, Bogotá, Colombia	
Equipment and expenses incurred by a visit of an agricultural technologist from the United States	4,570

Ministry of Supply, Atomic Energy Research Establishment, Harwell, England Purchase and shipment of isotopes for use in biological, chemical and medical research and therapeutics, by scientists in Austria	\$ 1,425
National School of Agriculture, La Molina, Lima, Peru Equipment mainly for the Departments of Plant Pathology and Dairy Husbandry	2,000
National University of Colombia, Bogotá Equipment and supplies needed for the Laboratory of Food Inspection, Faculty of Veterinary Medicine	1,000
Equipment for the Department of Parasitology, Faculty of Veterinary Medicine	6,000
Rice Experimental Station, Ministry of Agriculture, Pôrto Alegre, Brazil Equipment and supplies for cytogenetic work, principally on rice	3,000
School of Agriculture, Piracicaba, Brazil Equipment and supplies for the Departments of Agricultural Chemistry and Genetics	7,375
Secretariat of the Marine, Mexico To provide the services of a technical expert and a special consultant for the cooperative development of a rural fish culture project in Mexico	6,000
University of Colorado, Boulder Toward the preparation of the symposium on "The Study of Embryonic Development and its Conceptual Foundations," planned for 1951 by the University of Colorado Medical School	4,500

University of Rio Grande do Sul, Pôrto Alegre, Brazil  
 Contribution toward the cost of a greenhouse, textbooks in agriculture and veterinary medicine, for the School of Agronomy and Veterinary Medicine \$ 4,000

TRAVEL GRANTS AND LIVING ALLOWANCES

Agricultural Institute, Campinas, Brazil; contribution to the Research Fund of the institute for living and research expenses connected with the work of Dr. G. Steiner, United States Department of Agriculture, while in Brazil 1,500

Agricultural and Mechanical College of Texas, College Station; living allowance for Dr. G. L. Artecona of Paraguay while doing advanced work in animal husbandry 1,800

American Academy of Arts and Sciences, Boston, Massachusetts; contribution to the Institute for the Unity of Science toward the visit to Europe by Dr. Philipp G. Frank, president of the institute, to attend the International Conference of the Society for Significs in September 1950, as well as to lecture in various European countries 1,300

Brooklyn Botanic Garden, New York; travel expenses for Dr. George S. Avery during a visit to the Carlsberg Laboratories in Copenhagen, Denmark 500

Dr. Jean Coursaget, France; travel grant for visits to laboratories in Sweden and Denmark to supplement his knowledge of isotope techniques 450

Professor Pierre Donzelot, director of the Department of Higher Education, French Ministry of Education, Paris; travel expenses for trip through the United States	\$ 600
Gordon Research Conferences of the American Association for the Advancement of Science; toward travel expenses of the European scientists invited to take part in the Gordon Research Conference on Physical Methods in Nucleic Acid and Protein Research, held at New Hampton, New Hampshire, in August and September 1950	4,000
Harvard University, Cambridge, Massachusetts; travel expenses for Professor Ralph H. Wetmore, Department of Biology, to visit research laboratories in Europe	500
Institute for Advanced Study, Princeton, New Jersey; for Dr. M. V. Wilkes, lecturer in mathematics at the University of Cambridge, England, and director of the University Mathematical Laboratory, to visit American computing machine centers, following a visit to the institute	700
Ministry of Agriculture and Animal Husbandry, Bogotá, Colombia; travel and living expenses for C. Ochoa, Huancayo, Peru, to obtain training in potato breeding in Colombia	1,600
Ministry of Agriculture, Santiago, Chile; travel and living expenses for Raul Cortes, Department of Agricultural Investigations, while in the United States	700

National University of Colombia, Bogotá To permit Dean Gonzalo Luque F. and Professor Daniel Pacheco P., Faculty of Veterinary Medicine, to visit the United States, Mexico and Central America	\$ 1,900
National University of Colombia, Medel- lín; travel expenses for Dean Carlos Madrid, Faculty of Agronomy, while studying agricultural methods in various South American countries and in Tri- nidad	1,600
National University of Colombia, Palmira; travel expenses for Dean Guillermo Ramirez Romero, Faculty of Agronomy, to visit South American countries and Trinidad to observe teaching, research and administrative methods of agricul- tural organizations	1,600
Pennsylvania State College, State College; travel and living expenses for six Euro- pean scientists attending the conference on "Computing Methods and the Phase Problem in Crystal Structure Analysis," which was held at State College in April 1950	5,100
Polytechnic Institute of Brooklyn, New York; expenses of trip to Sweden by Professor Frederick R. Eirich, Depart- ment of Chemistry	750
Polytechnic School, University of São Paulo, Brazil; living expenses for Miss Helena Brandao Lopes, assistant in the Department of Electron Microscopy, while training at the Department of Biology, Massachusetts Institute of Technology, Cambridge	2,100

Royal Veterinary and Agricultural College, Copenhagen, Denmark; travel grant for Professor Mathias Thomsen and Dr. Ellen Thomsen while in the United States pursuing their work on insect hormones	\$2,500
San Simon University, Cochabamba, Bo- livia; travel and living expenses for Professor Martin Cardenas, Department of Applied Botany, for two months work in Colombia on potato breeding	1,100
Stanford University, Palo Alto, California; visits to research centers in the United States by Helge Larsen, Norwegian In- stitute of Technology, Trondheim	500
Dr. Laszlo Zoltan Joseph Toth; travel grant for stay in United States and dis- cussions with American scientists, par- ticularly in the field of biochemistry	750
Travel assistance for European scientists who wish to visit various research cen- ters in the United States in conjunction with their attending the VIIth Inter- national Congress of the International Society for Cell Biology, New Haven, Connecticut, September 1950. The scien- tists include: Dr. A. Lwoff, Dr. S. Ranzi, Dr. J. Runnstrom, Dr. C. Waymouth, Dr. B. Ephrussi, Dr. L. H. Bretschneider and Dr. J. Hämmerling (\$600 each); Dr. Heinz Holter and Dr. Erik Zeuthen (\$600 jointly)	4,800
University of Brazil, Rio de Janeiro; to- ward expenses of Dr. Carlos Chagas, director of the Institute of Biophysics, while traveling in Europe	500

University of São Paulo, Brazil; toward the travel expenses of Professor Hampton L. Carson, Washington University, St. Louis, Missouri, while teaching at the Department of General Biology (Genetics) at the University of São Paulo	\$2,500
University of Stockholm, Sweden; toward living and travel expenses for Dr. Carl H. Lindroth, lecturer in entomology, while continuing his work at Harvard University	2,000
Dr. Josef Würsch, Zurich, Switzerland; travel expenses to the United States for six months of work at the Department of Biochemistry, University of Chicago, Illinois	800
Yale University, New Haven, Connecticut; toward travel expenses of Dr. Raymond M. Fuoss, Sterling Professor of Chemistry at Yale, for a trip to Israel for research and a series of lectures	1,050
Yale University School of Medicine, New Haven, Connecticut; toward living and travel expenses of Dr. Alexander Mauro while at the Institute of Neurophysiology, University of Copenhagen, Denmark	1,260



# THE SOCIAL SCIENCES

# THE SOCIAL SCIENCES STAFF

During 1950

## *Director*

JOSEPH H. WILLITS

## *Associate Directors*

NORMAN S. BUCHANAN<sup>1</sup>

LELAND C. DEVINNEY<sup>2</sup>

## *Assistant Directors*

LELAND G. ALLBAUGH<sup>3</sup>

ROGER F. EVANS

PHILIP E. MOSELY

<sup>1</sup> Resignation effective August 31, 1950

<sup>2</sup> Appointed Associate Director effective April 5, 1950

<sup>3</sup> Resignation effective December 31, 1950

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## THE SOCIAL SCIENCES

**T**HE Rockefeller Foundation appropriated a total of \$2,122,085 during 1950 for its program in the social sciences. This program seeks to assist the development of a science of social behavior, to foster a scientific approach to the social problems of our times, to further the discovery and development of social science talent and to help provide an adequate basis for social philosophy. Classification of the specific grants made during the year in accordance with these aims will not be attempted, since many of the supported projects relate to more than one of the basic purposes of the program. For example, the grant of \$400,000 for continued support of the research activities of the National Bureau of Economic Research, designed to aid the development of the science of social behavior through systematic collection and analysis of data pertaining to the interrelationships of economic processes, is equally intended to contribute to the fostering of a scientific approach to the social problems of our times. Likewise, the \$95,000 appropriation to Cornell University, toward the costs of continuing its research on intergroup tensions in relation to community action for dealing with such tensions, while primarily aimed at producing tested knowledge for general use in

American communities, also is expected to contribute basic theoretical knowledge about community patterns of intergroup behavior and the factors which determine and modify such patterns.

The \$420,000 appropriation to Columbia University toward further general support of its Russian Institute is designed to help provide specialized knowledge which is the indispensable basis for dealing effectively with a major problem of modern times — relations with Russia. It is intended no less to assist in discovering and training competent personnel in this applied field. The allocation of \$60,000 to the Committee on Research in Economic History, Inc., for its research and training program is for continued assistance in the discovery and development of talented young scholars in this field. It is also a continuation of the Foundation's effort to stimulate and strengthen scholarly and historical interests among economists in this country and thus help build a more adequate basis for a sturdy social philosophy in America. The \$20,000 grant to the American Law Institute was made to assist fundamental thinking and study about the philosophy underlying the criminal law of this country and its congruence with contemporary social philosophy. The grant is also expected to aid in the attack on the practical problems arising from the ambiguities, inconsistencies, obsolescences and inadequacies in United States criminal law and procedure.

Similarly, with a large share of the other projects which received support in 1950, two or more of the basic aims stated above were served. The Founda-

tion's efforts in the social sciences are necessarily focused on a limited number of areas. As in recent years, grants in 1950 were concentrated on studies designed to contribute to the effective functioning of the American economy and political democracy, to our knowledge and conduct of international relations and to the development of scientific knowledge about interpersonal and intergroup relations; assistance to certain research and training agencies was also part of the program. In the following pages the 1950 grants are described under these headings.

#### THE FUNCTIONING OF THE AMERICAN ECONOMY AND POLITICAL DEMOCRACY

##### NATIONAL BUREAU OF ECONOMIC RESEARCH ECONOMIC STUDIES

The Rockefeller Foundation appropriated \$400,000 toward the activities of the National Bureau of Economic Research of New York for a two-year period beginning January 1956, when the current grant expires. The National Bureau of Economic Research is engaged in long-range objective studies of the processes of economic life. The members believe that the interrelationship of economic processes is such as to call for a program of closely concatenated research studies, each bearing on earlier investigations and laying a firm basis for subsequent ones. There is a direct line of evolution and progress between the work done in 1927 by Wesley C. Mitchell on *Business Cycles: The Problem and Its Setting* and recent studies

done, among others, by Geoffrey H. Moore on *Statistical Indicators of Cyclical Revivals and Recessions* and by Thor Hultgren on *Cyclical Diversities in the Fortunes of Industrial Corporations*. Pioneer studies of capital formation have led to the investigation of capital requirements and the sources of capital funds. Previous inquiries into bank credit led directly to the recently expanded program for investigating urban real estate and farm mortgages. In the 30th annual report of the National Bureau of Economic Research it was reported that the staff has begun studies of the economic relations between the United States and foreign countries.

The bureau has, since 1920, accumulated a growing body of economic knowledge comparable to that acquired in other areas of scientific investigation. Some of its work done on economic measurement has been taken over by the government. The funds appropriated by The Rockefeller Foundation are to be used for the general program of the National Bureau of Economic Research and particularly for its special program of research in finance and fiscal policy.

COMMITTEE ON RESEARCH IN  
ECONOMIC HISTORY, INC.

RESEARCH AND TRAINING PROGRAM

In 1950 The Rockefeller Foundation made a three-year grant of \$60,000 to the Committee on Research in Economic History, Inc., for its research and training program. The committee has had Foundation support for the past ten years while it was a part of the Social



Science Research Council of New York. This year the committee was incorporated and is now an independent group whose members are studying the historical background of our present economic and social institutions.

Since 1940 the committee has been increasingly active. Directly or indirectly it has sponsored an extensive publication program, and has awarded 32 grants in aid and fellowships for economic history studies. A Research Center in Entrepreneurial History has been organized at Harvard University, and several other university groups in the United States and Canada are engaged in related studies. A *Journal of Economic History* has been founded. This committee and the Economic History Association, with its mixed membership of leading economists and historians, now serve as a means of communication and encouragement among scholars in the field. Professor Arthur H. Cole of Harvard University is chairman of the committee, whose trustees are representatives of many colleges and universities in the United States and Canada.

The Committee on Research in Economic History, Inc., is now making studies of two new subjects. These subjects are the influence of time horizons on economic affairs and the factors relating to productivity. The committee feels that too little attention has been paid to changing perspectives over long periods of time, especially in relation to economic and business fields. An important source of social friction might be overcome if social scientists better understood the

economic role of time at the present in comparison to the role of time in the past. With respect to productivity, the committee believes that the records of American manufacturing and transportation companies contain data which should show the relative contributions made by various factors in production. It is felt that the course of wages and its correlation with the movement of other elements in production can profitably be studied in this connection.

#### UNIVERSITY OF CHICAGO

##### COMMITTEE ON THE STUDY OF LATER MATURITY

At the University of Chicago a study on how to plan more effectively for the aging element of the American population is now under way. The Rockefeller Foundation has given the university \$20,500 to be used by its Committee on the Study of Later Maturity for 18 months of research on this problem.

In its preliminary studies of adjustment in old age, the committee has found that work and employment are crucial in the personal adjustment of most men and many women. The committee is now engaged in two short-term studies on the practical working out of plans for retirement. One of these studies undertakes to investigate representative samples of older people in selected occupational and retired groups to determine the meaning and function of work in their lives and the types of adjustment likely to be most satisfactory after they have reached retirement age.

The second project is to be a survey of the patterns of employment and retirement actually in use in

American business and industry. The aim is to discover patterns which provide a more flexible employment-retirement sequence than the typical one of retirement at a given age. In time it is planned to organize a conference of employers, union leaders and government officials to discuss with them the findings of this survey and to consider further action for obtaining effective solutions to problems associated with the longer utilization and more satisfactory adjustment of our aging population.

#### CORNELL UNIVERSITY

##### SOCIAL ADJUSTMENT TO OLD AGE

While research in the problems of old age has generally been concerned with the medical and economic aspects, an equally important aspect of the aging process is the adjustment of human relations when family, friends, community and work are all subject to more or less drastic change. The Rockefeller Foundation has granted \$15,000 to Cornell University, where a pilot study is being launched to explore adjustment problems of this sort.

In Elmira, New York, where the Cornell Field Research Office staff has spent two years accumulating data on problems of intergroup relations, there is already available background material on the social structure and functions of the community and a cross-section panel of the community's population, including a representative sample of the aged. The staff plans to interview 300 more persons, 65 years of age and over, and to secure detailed case studies of

100 of these. This will require interviews with their relatives and those who have systematically observed them over a number of years — their employers, doctors and clergymen, for instance. The studies will concentrate on the status and role of the aged person, his adjustment to decreased efficiency and retirement and his adaptation to a change in social and family relationships. The plan is to supplement the earlier findings in Elmira with observation and analysis of community facilities for the aged and to interview community leaders and professional personnel for their views on problems of the aged in Elmira. The final report should provide a realistic picture of how old people, living in social groups, meet the problems of age and how the community seeks to meet these same problems.

#### CORNELL UNIVERSITY

#### CIVIL RIGHTS IN RELATION TO CONTROL OF SUBVERSIVE ACTIVITIES

A study of civil rights and the control of subversive activities in the United States was undertaken in 1948 at Cornell University under the direction of Professor Robert E. Cushman. The Rockefeller Foundation granted \$110,000 to Cornell University for this work in 1948 and this year made a grant of \$20,000 to bring the study to completion.

Professor Cushman and his associates have made a searching examination of civil liberties in the United States and the relation of these liberties to the current government measures designed to ensure internal

security and to expose disloyal or subversive conduct. Research has been divided into five major parts: Miss Eleanor Bontecou has studied the loyalty program in the executive branch of the government, while Professor Robert K. Carr of Dartmouth College has worked on the House Committee on Un-American Activities. Professor Walter Gellhorn of the Columbia University Law School covered security and loyalty requirements as applied to government scientists, and early in 1950 his book, *Security, Loyalty and Science*, made public the results of his research. State programs for the control of subversive activities have been studied by a number of scholars working under Professor Gellhorn's direction. Professor Cushman's summary volume will be the fifth and final part of the current project.

AMERICAN BAR ASSOCIATION  
COMMISSION ON ORGANIZED CRIME

Organized crime today presents a serious threat to the social and political well-being of this country. With large funds at their disposal, criminal syndicates are gradually buying their way into legitimate businesses throughout the nation. Those in charge of organized crime seek unlimited power and do not hesitate to use intimidation, violence and homicide to attain their ends. Existing law enforcement machinery is not adequate to protect society from such large-scale and well-organized criminal operations. However, the American Bar Association Commission on Organized Crime is now studying improved meth-

ods for dealing more effectively with organized crime. The Rockefeller Foundation has contributed \$25,000 toward this study through the coming year.

The Commission on Organized Crime was created in response to a request made to the American Bar Association by the Senate Special Committee to Investigate Organized Crime in Interstate Commerce. Robert P. Patterson is chairman of the commission, which proposes to make systematic investigations into the following eight topics:

1. How local police organizations can be strengthened to deal with the menace of organized crime.
2. Changes which must be made in the organization and machinery for prosecuting crime, so that suppression of organized crime becomes one of its major functions.
3. Changes that are necessary in the structure and functions of state government, so that it can become a more effective instrument in law enforcement.
4. Steps that should be taken so that federal agencies, such as the F.B.I., the Narcotics Bureau and the Treasury Department, which have voluminous data on organized crime, can effectively cooperate with law enforcement agencies.
5. Determination of how the criminal law should be amended so that criminal gangs can be suppressed.
6. Evaluation of rules of criminal procedure with a view to eliminating technicalities of which habitual and professional criminals take advantage.
7. Analysis of the habitual offender laws and sentencing practices of various states, to determine whether these can be made more effective in dealing with the lawless elements that are the background of organized criminal groups.

8. Determination of the necessary amendments to the federal laws so that the full powers of the federal government can be brought to bear upon the interstate aspects of the operations of organized crime.

The Commission on Organized Crime has appointed Judge Morris Ploscowe, a magistrate of the City of New York, to be executive director of the investigation.

#### AMERICAN LAW INSTITUTE ADMINISTRATION OF CRIMINAL LAW

The American Law Institute of Philadelphia is undertaking a study of criminal law and its administration in the United States. Previous Foundation grants have been made to the American Law Institute for the preparation of a code of criminal law and procedure. This year The Rockefeller Foundation made a one-year grant of \$20,000 to the American Law Institute for a preliminary investigation into the possibility of eliminating present gaps and ambiguities of criminal laws.

The institute plans an inquiry along two lines: technical difficulties which hamper court procedure and the logical inadequacies of existing criminal law. Effective work in courts is impeded because the courts have to work with obsolete features of criminal law. Adding to the confusion are meaningless variations in laws among the states, and inconsistencies within the states themselves. The philosophy underlying the criminal law also needs to be reexamined both for its

internal consistency and for its congruity with contemporary social philosophy. The American Law Institute is also considering the need for relevant research by experts in the fields of medicine, psychiatry, psychology and sociology. Studies by such experts are needed for the development of valid assumptions about human behavior as a basis for suggestions for modifying criminal laws as they now exist.

### INTERNATIONAL RELATIONS

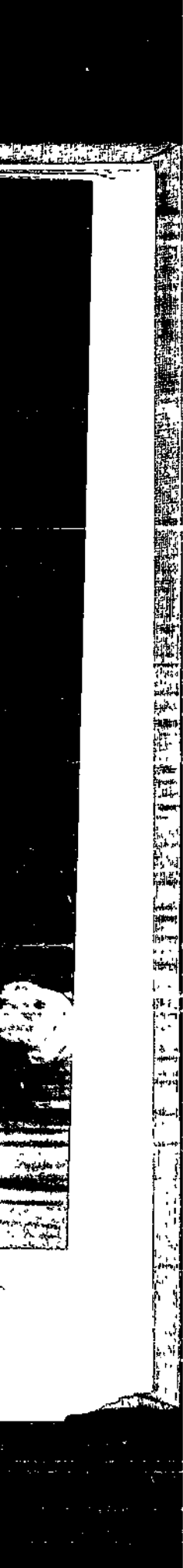
#### COLUMBIA UNIVERSITY

#### SCHOOL OF INTERNATIONAL AFFAIRS

The Rockefeller Foundation appropriated \$420,000 over a five-year period to Columbia University toward the continued development of the Russian Institute in the School of International Affairs. The Foundation made previous grants in 1945 and 1947, when the institute first opened, to advance knowledge in this aspect of the international field through advanced research and to train American specialists to do work of authority and influence.

Because of the immediate and urgent need for Russian specialists in government service, the institute over the past five years has emphasized the training of experts. The government has already profited to a considerable extent, as there are now 111 former institute students in the service of the United States. Of these, 48 officers are on active duty with the Army and Air Force, 16 are Foreign Service Officers with the







Photograph Excised Here

Research in group dynamics at the University of Michigan

A field worker on the Elmira community study, sponsored by Cornell University,  
listens in on discussions of interracial problems



Photograph Excised Here

Department of State and 47 are in other federal positions. The staff of the Russian Institute has written or edited numerous articles and books and currently is preparing many more. Staff members are frequently called upon to lecture at universities and at the National War College and the Air War College. Research done by members of the Russian Institute has contributed directly to the greater knowledge of the power and policy, the "capabilities and intentions," of the Soviet Union. Research has also revealed elements of Soviet strength and weakness and the motives behind Soviet action at home and abroad. It is intended, by adding two faculty members and part-time replacements, to enable the seven full professors on the permanent staff to give even greater time to research.

The institute is continuing to stress training and research. It also plans to increase the library resources of Columbia University in the Russian field, establish a publication fund and maintain a fellowship and scholarship program in keeping with the needs of the existing national emergency.

#### BROOKINGS INSTITUTION

##### INTERNATIONAL RELATIONS

The Brookings Institution in Washington initiated a program at the end of the Second World War to improve methods of research and training in the field of international relations and to complete a series of basic studies of use to scholars and policy makers. The program is centered on the major problems of

international relations that confront the United States government and on governmental methods used to meet these problems. The Brookings Institution has adopted the "problem approach" by approximating circumstances which face responsible government officials, working within the framework allowed to these officials, and surveying alternate courses which might best be followed in any given international situation. The Rockefeller Foundation has appropriated funds for this special "problem approach" program since 1946, and in 1950 granted \$180,000 for three more years of research and publication.

An important part of the research and training program at the Brookings Institution is an annual publication on *Major Problems of United States Foreign Policy*. An account of the international situation and an analysis of the position of the United States in the world is followed by a review of some 50 principal problems confronting the United States. The volume concludes with lengthy analyses of three or four major issues presented as "problem papers" and handled approximately as the Department of State and other government agencies responsible for the formulation of foreign policy would have to handle them. Supplementing the annual volume on *Major Problems* is the periodical review *Current Developments in United States Foreign Policy*. The ten yearly issues contain research on the immediate issues to be faced by foreign policy makers. Additional publications put out under the new program include a series of individual analyses on long-range problems. Recent studies in this

group have been on the International Trade Organization as an instrument of American economic foreign policy, the United States and peace settlements, and a history of the United Nations Charter. In order that the values of this problem approach may be extended to government leaders, educators and businessmen, the Brookings Institution now holds an annual two-week seminar on "Problems of United States Foreign Policy." Seminars have already been held at Dartmouth College, Stanford University, Lake Forest College and the University of Denver, with over a hundred persons attending each one.

#### FOREIGN POLICY ASSOCIATION RESEARCH AND GENERAL PROGRAM

The Foreign Policy Association was created in 1918 for the purpose of carrying on "research and education activities to aid in the understanding and constructive development of American foreign policy." As the role of the United States has expanded in the international sphere, the association has undertaken to explain this role and its implications to an ever-increasing number of Americans. Thirty-two branch organizations have been organized in large cities throughout the country. Through the activities of these branches there have been organized local and national conferences, and a widespread educational program with frequent use made of radio and television. The three publications of the Foreign Policy Association, available to the general public, schools, organizations and government agencies, are a weekly

*Foreign Policy Bulletin* which covers current issues, the *Foreign Policy Reports*, published twice monthly, which discuss at some length pressing international issues and the popular *Headline Books*, with details on problems of importance to Americans and to the world.

The Foreign Policy Association operates as a non-profit research organization. Between 1934 and 1945 The Rockefeller Foundation contributed \$625,000 to the research, publication and educational activities of the Foreign Policy Association. In 1945 the Foundation made a tapering grant of \$200,000. A 1950 grant of \$20,000 terminates Foundation aid to the Foreign Policy Association, now operating largely on a stable and self-supporting basis.

#### INSTITUTE OF PACIFIC RELATIONS

In 1950 The Rockefeller Foundation made a grant of \$60,000 to the American Institute of Pacific Relations and another grant of \$50,000 to the Pacific Council. These are both branches of the Institute of Pacific Relations, an organization founded 25 years ago to increase and disseminate knowledge of problems of the Pacific area. The American Institute of Pacific Relations, with headquarters in New York City, is one of the 12 autonomous national bodies within the Institute of Pacific Relations. The staff of the American Institute is responsible for conducting research and publishing studies on current aspects of Far Eastern problems which are of special interest and importance to the American public. The terminal

appropriation from The Rockefeller Foundation to the American Institute is to be used for general expenses through 1952.

The Pacific Council of the Institute of Pacific Relations is the international governing body composed of one member appointed by each of the national councils. The constitution of the institute provides that the Pacific Council will integrate the programs and research of the national groups, call periodic international conferences and elect officers of the Institute of Pacific Relations. The subject of current research directed by the Pacific Council is the problem of nationalism and politics in the postwar Far East together with the question of modernization in the Pacific area. This research program is closely allied to the topic which was considered at the 11th international conference held in Lucknow, India, in October 1950. The Pacific Council called members together to discuss the general problem of "Nationalism in the Far East and Its International Consequences." The 1950 Rockefeller Foundation grant to the Pacific Council contributes to the support of the general program for the next two years.

#### SOCIAL SCIENCE RESEARCH COUNCIL

##### *Current Digest of the Soviet Press*

A steady flow of current Soviet press material is now available to scholars, businessmen, writers and government policy-makers through the *Current Digest of the Soviet Press*. The digest is a weekly publication which has been coming out since February 1949

under the Joint Committee on Slavic Studies of the American Council of Learned Societies and the Social Science Research Council. It contains translations of significant articles taken from more than 40 Russian periodicals and newspapers, including the two important Moscow newspapers *Pravda* and *Izvestia*. The translations, averaging 70,000 words a week, are presented as documentary materials without comment; articles are labeled as "complete text," "condensed" or "summary." The editor of the digest is Leo Gruliow.

The offices of the *Current Digest of the Soviet Press* were moved this year from Washington, D. C., to the campus of Columbia University, New York, where office space for the staff is contributed by the university. At the same time, administrative responsibility for the project was transferred to the Social Science Research Council. A portion of the \$100,000 which The Rockefeller Foundation appropriated to the American Council of Learned Societies in 1947 to aid in the procurement and reproduction of materials on the Slavic world was used to get the digest started. In 1950 the Humanities and Social Sciences divisions of the Foundation made a joint grant of \$55,000 to the Social Science Research Council toward expenses of the digest for the next two years.

#### OTHER GRANTS

The Foundation in 1950 made three additional modest appropriations for projects in the field of



international relations that had already received the maximum three years of support available under the program for assistance through grants in aid. The Royal Institute of International Affairs, Great Britain, received a two-year grant of \$2,565 toward support of a study in international economic policy by Professor James Meade, who holds the chair of economics at the London School of Economics and Political Science. The sum of \$2,800 was appropriated to the National Foundation of Political Sciences, Paris, for its work in international relations and for reorganization of its library procedures. A grant of \$3,000 was made to Columbia University, New York, for use by the Columbia University Press in completing the *Documentary Guide to the League of Nations*.

## INTERPERSONAL AND INTERGROUP RELATIONS

### CORNELL UNIVERSITY

#### INTERGROUP RELATIONS

In 1948 a study of intergroup relations and hostility in Elmira, New York, was started by the staff of the Social Research Center at Cornell University. When this research program is completed the staff hopes to emerge with a set of tools useful for guiding communities in the direction of orderly social change. The main purpose is to find ways to reduce intergroup tensions and to promote constructive participation by minority groups in community life. The Rockefeller Foundation made a grant for this study when it was started in 1948 and in 1950 appropriated

\$95,000 for five more years of the Cornell research program on intergroup relations.

Elmira serves as the center of intensive study, but as no one city or geographical location can represent all phases of American culture and all conditions which create intergroup tensions, supplementary pilot studies have been made in Auburn, New Rochelle and Poughkeepsie, New York, in Norwalk, Connecticut, in Steubenville, Ohio, and in Weirton, West Virginia. These have revealed variables suggesting that the potentials for restructuring intergroup patterns depend heavily on the stage of development in a given city. Different cities appear to fall at different points on a line representing the movement of our national culture toward increased integration of ethnic minorities into community life.

Further proposed research involves a comparative community study. Detailed inventories of current patterns of minority group participation are to be established in 25 cities. On the basis of inventory data, five of the 25 cities will be selected for further cross-sectional surveys, with emphasis on social changes resulting from specific action programs currently under way. The second major part of the research program is to be a series of detailed action experiments in Elmira. The main concern again is to find different methods of reducing intergroup tensions.

#### HARVARD UNIVERSITY

#### LABORATORY OF HUMAN DEVELOPMENT

The Child Welfare Research Station at the State University of Iowa, aided by a grant from the Foundation, in 1947 began a study of the social and

cultural development of the child during the crucial preschool and elementary school years. This pilot study investigated the relations of parental methods of child-rearing to the development of certain personality characteristics in young children, with emphasis on aggression and dependency. The Iowa study was directed by Professor Robert R. Sears until 1949, when he and most of his staff moved to Harvard University. At Harvard there has now been established a Laboratory of Human Development in which it is planned to carry on the original project.

At the Harvard Laboratory of Human Development it is proposed to study what factors during the first three years of a child's life produce the strongest degree of identification with his parents; what methods are available for measuring identification both in preschool children and children to the age of adolescence; and how to test relationships between early childhood identification with parents and the development of sex typing, reactions to authority, guilt and shame reactions, as well as the absorptions of parental values. Various approaches to these problems have been designed. One involves continuous work over a two-year period with a group of young children and their parents. A second study is to secure data on the degree of identification with parents as shown by children of two Indian tribes in New Mexico that have sharply differing methods of discipline and nurturing in their child-rearing practices. A third investigation is to be carried out with public school children in the attempt to develop new methods of measuring both identification and personality characteristics such as aggression and dependency.

Support for this study of the influence of social and cultural factors on child development is continued through August 1952 by a grant of \$41,000 to Harvard University.

#### UNIVERSITY OF MICHIGAN

##### RESEARCH CENTER FOR GROUP DYNAMICS

Social psychologists at the Research Center for Group Dynamics at the University of Michigan are continuing their program of basic research in the field of human relations. The program of the Research Center, a division of the Institute for Social Research, was initiated by the late Dr. Kurt Lewin and developed by him first at the University of Iowa and later at the Massachusetts Institute of Technology. In 1948 the University of Michigan assumed responsibility for the program, which in its wide range of projects includes investigation of group productivity, group morale, methods of reaching group decisions, patterns of leadership and resistance to change. These studies, toward which The Rockefeller Foundation gave \$52,500 in 1950, are conducted in part in the laboratory but mainly in communities, industrial plants, conference rooms and workshops of the private companies and government agencies interested in getting facts on group behavior. It is now proposed that one member of the staff be freed from other research responsibilities for a long enough period to concentrate on methodological and theoretical problems which seem ready for attack. Dr. Leon Festinger is the first of the group to take on this assignment.

Much of the work of this group and their students is reported in the quarterly journal *Human Relations*, founded and published by the Research Center in cooperation with the Tavistock Institute in England.

UNIVERSITY OF MICHIGAN  
SURVEY RESEARCH CENTER

One of the many studies made by the Survey Research Center, a division of the Institute for Social Research at the University of Michigan, is the annual survey of consumer finances. The study was initiated by the Federal Reserve Board as a part of its effort to anticipate consumer economic behavior. The Federal Reserve Board is able to make extensive use of the survey findings in predicting future developments and in reaching policy decisions. Since 1946 the center has been interviewing a large sample of the nation's spending units, asking for information on economic status, behavior, expectations and intentions. Approximately 700 of the spending units interviewed in 1948 were interviewed again in 1949 in a preliminary attempt to make a direct check on the reliability and validity of economic survey data and to explore the degree of stability in the economic behavior and expectations of consumer units.

As a result of the second interview in 1949 the Survey Research Center has already gathered significant information on the differential effects of population movements, on the degree of consistency in the two successive interviews, on stability of economic attitudes, on the repetitive or nonrepetitive nature of

various forms of economic behavior, and finally on the realization of expectations and intentions. Further study is under way to provide another set of independent observations to check against these findings, and to discover what factors determine changed attitudes in those interviewed. The costs of the field work are met by the Federal Reserve Board, while The Rockefeller Foundation contributes to the costs of tabulating, analyzing and reporting the data. The 1950 one-year grant of \$19,320 is for the refinement of survey methods and for continued tabulation and analysis of data on consumer economic behavior.

#### RESEARCH AND TRAINING AGENCIES

##### STANFORD UNIVERSITY

##### FOOD RESEARCH INSTITUTE

The Food Research Institute was established at Stanford University in 1921 as a direct outcome of World War I. The war of 1914-1918 forced upon nations the necessity of intensive studies in food production and distribution, mass nutrition and international trade in agricultural commodities. The founders of the institute were convinced that coordinated studies of food problems in their economic as well as scientific aspects were no less important in peace than in war. It was also felt that the institute would serve a national interest by developing investigators in this field.

When World War II broke out the Food Research Institute had spent over two decades in collecting

and publishing studies on food production, distribution and consumption. In 1946, with a grant of \$300,000 from The Rockefeller Foundation, the institute started an *International History of Food and Agriculture in World War II*. The research staff is now at work on this history, which is to comprise 21 volumes dealing with 1) international commodities, 2) international organization and control and 3) national and regional food management.

At the present time there is widespread concern that so few persons are trained to take leadership in the critical field of agricultural economics. Dr. Merrill K. Bennett, executive director, and the staff of the Food Research Institute plan to train a group of selected men who could undertake careers in such institutions as the Food and Agricultural Organization of the United Nations, the various branches of the United States Department of Agriculture and leading research organizations in this field. In the past the institute's role with respect to the training of graduate students has been confined to the teaching of certain courses for students majoring in other departments, and to the supervising of the master's or doctor's theses of students enrolled in other divisions of the university. The institute now plans to offer a complete course in agricultural economics to outstanding graduate students. The 1950 Rockefeller Foundation grant of \$36,000 to Stanford University for the Food Research Institute is to provide scholarships for the group selected for this specialized training. The grant makes available research assist-

antships for six students over a four-year period; two students are to be admitted each year for three successive years, beginning in September 1951.

The Food Research Institute was also voted \$5,000 for a current study under the direction of Dr. Naum Jasny on Soviet Russian economic development. Dr. Jasny has been working on this study since 1948, analyzing the role of agriculture in Russia as a source of manpower and capital for expanding industry. Trends in labor productivity in industry and transportation are being analyzed. This requires examination of Russian documents, primarily newspapers available in the government libraries in Washington. This analysis is to determine the factors which permitted the great increase in Soviet industrialization during the years 1928-1940, and may throw light on the future economic power of the Soviet Union. The grant is for the year 1951-1952, and is to be used for Dr. Jasny's research and work on his book, *Essays on Soviet Economy*, as well as for a translator-assistant.

#### CANADIAN SOCIAL SCIENCE RESEARCH COUNCIL FELLOWSHIPS AND PROFESSORIAL LEAVES

The Rockefeller Foundation has supported the general program of the Canadian Social Science Research Council since 1942 and in 1950 appropriated \$15,000 for postgraduate fellowships and \$5,000 for the support of professorial research. The Canadian council performs the same function of encouraging social science research in Canada as the Social Science Research Council does in the United States. It is sponsored by the Canadian Historical Association,



the Canadian Committee of the International Geographic Union, the Canadian Political Science Association and the Canadian Psychological Association. The council is administered by four committees whose coordinating activities work out problems of publications, research grants, predoctoral fellowships and graduate work in the smaller institutions. Rockefeller Foundation funds are being used for postgraduate students who are at an advanced stage in their studies or at work on the doctoral thesis, and for the research efforts of Canadian professors on leave from teaching duties.

#### UNITED NATIONS ECONOMIC COMMISSION FOR EUROPE

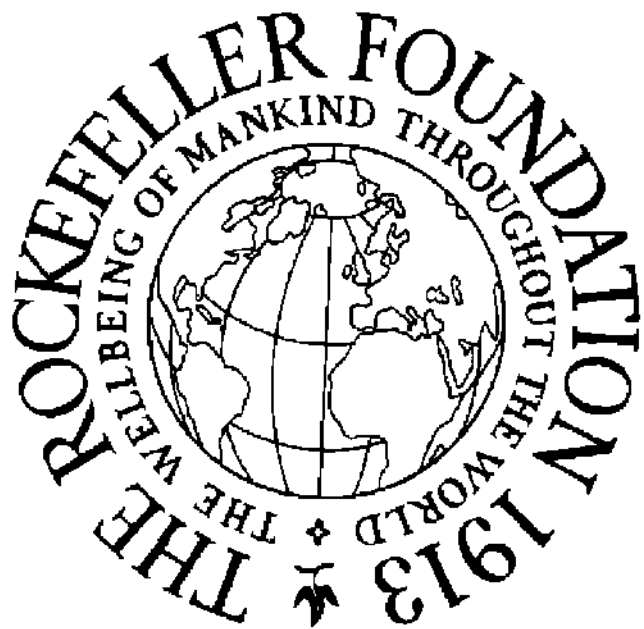
##### IN-SERVICE TRAINING SCHOLARSHIPS

The United Nations Economic Commission for Europe sponsors a research-training program at its headquarters in Geneva, where selected European students spend one-half of their time studying and the other half doing basic research for the commission. The in-service training program is aided by The Rockefeller Foundation, which this year made a grant of \$12,000 for scholarships. At the present time there are trainees from Yugoslavia, Poland, Finland and Czechoslovakia working on international economic problems with members of the staff of the commission. The special committee which administers the program and selects the students eligible for scholarships was appointed by Dr. Gunnar Myrdal of Sweden, Executive Secretary of the United Nations Economic Commission for Europe.

NATIONAL INSTITUTE OF ECONOMIC AND  
SOCIAL RESEARCH, GREAT BRITAIN

Since its establishment in 1937 the National Institute of Economic and Social Research in Great Britain has successfully pursued an independent research program. In so doing it has provided a nucleus for the coordination and promotion of research both in British universities and in private research organizations. In recent years the institute has concentrated on two groups of studies pertaining to the British economy. Representative of the first is the research relating to the national income under Professor Richard Stone and his associates. The second includes studies by L. Rostas on productivity and distribution; I. Bowen on the building industry; P. Sargant Florence on the location of industry and size of plant; and Brinley Thomas on migration.

The institute is now centering its research on the broad topic of capital accumulation in relation to economic progress. While this topic has an obvious relation to the international economic position of the United Kingdom, the institute has formulated a wide-range program of studies relevant beyond the United Kingdom. The new research program will investigate the following: 1) structure of national capital at different dates; 2) growth and pattern of capital accumulations; 3) process of corporate saving; 4) obsolescence and depreciation policy in relation to capital accumulation; 5) effects upon industrial modernization of methods of wage payment, collective



Photograph Excised Here

Publications of the Foreign Policy Association, New York

The library at the National Institute of Economic and Social Research, London



Photograph Excised Here



Photograph Excised Here

The Brookings Institution, Washington, D. C.

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agreements and statutory conditions; 6) effects upon enterprise and capital formation of high levels and different forms of taxation. This broad study of capital accumulation involves the cooperation of many research workers in universities, the government and private industry.

The new chairman of the institute is Professor Austin Robinson of Cambridge University, who succeeds Sir Henry Clay, for nine years chairman and now president of the organization. The Rockefeller Foundation and various British foundations and trusts have supported the National Institute of Economic and Social Research since 1937. A 1950 Foundation grant of \$51,300 was made for general budget expenses during the next three years.

A grant of \$21,000 was also made to the National Institute of Economic and Social Research toward expenses of the International Association for Research in Income and Wealth, a private association established to measure the amount and distribution of national incomes. Professor Richard Stone of Cambridge University is chairman of the governing council, whose membership includes 110 individuals from 36 countries. The association was founded in Washington in 1947 under the sponsorship of the National Bureau of Economic Research, but as it seemed desirable to have the center in Europe, the National Institute offered the association the use of offices in London. The Rockefeller Foundation grant is to help meet part of the expenses of the current program of preparing an international bibli-

ography of literature published on income and wealth from 1937-1947, and a quarterly bibliography of the current articles written on the subject. The program also includes arranging for international conferences to bring together experts in the field and thus increase the number of scholars competent to measure the "economic blood stream of individual countries."

#### ROYAL STATISTICAL SOCIETY, GREAT BRITAIN

The Royal Statistical Society, oldest organization of its kind in the world, was founded in London in 1834. Since then the society has been the forum in the United Kingdom for discussions on the development of statistical methods and their application in all fields of inquiry in which statistics are employed. The journal published by the Royal Statistical Society contains papers which have had an influence on the development of statistics in countries all over the world. Aided in part by the war-time development in mathematical statistics, membership in the society has been doubled in ten years. The number of fellows of the Royal Statistical Society grew from 1,000 in 1938 to more than 2,000 in 1949.

Because of the sharp rise in membership, the society has had to use scattered facilities for its meetings. As a result of a recent anonymous gift of £30,000 the society plans to create a Statistical Center to house the society and to provide a central gathering place for members and guests of the society from all parts of the world. An important part of the center will be the library, already the most comprehensive

of its kind in the country. However, the library is in need of much new material and must bring up to date its catalogue and index. The society also plans to increase its effectiveness by strengthening its highly trained statistical staff. A 1950 Rockefeller Foundation grant of \$20,000 is to be used for the improvement of the library facilities and for the additional secretarial and editorial assistance.

### GRANTS IN AID

A total of \$270,000 was available for grants in aid in the social sciences in 1950. Out of these funds the division made 80 appropriations, ranging in size from \$150 to \$10,000, for a wide variety of purposes. In several instances the awards directly reinforced an interest expressed in the division's regular program of grants, as for example the five allocations for diverse phases of agricultural economics. In other cases grants in aid were made for projects which, although not so strictly related to the regular grants in the Social Sciences program, nevertheless fell within the scope of that program.

Listed below are the 37 grants in aid in the field of social sciences made to research organizations, universities and libraries in the United States and abroad, for support of economic and historical studies, social science seminars and international conferences, field and laboratory studies and the development of library collections. Also listed are 19 grants made largely to universities as backing for individual proj-

ects, and finally the 24 travel grants to individuals for the support of surveys and studies requiring visits to foreign countries.

RESEARCH ORGANIZATIONS AND UNIVERSITIES

American Bar Association, New York

Toward expenses of the annual "Conference of Chief Justices of the 48 States," Washington, D. C., September 1950

\$ 5,000

American Council of Learned Societies, Washington, D. C.

For use of the Joint Committee on Slavic Studies of the American Council of Learned Societies and the Social Science Research Council in purchasing current Soviet publications for American libraries

2,850

American Economic Association, Northwestern University, Evanston, Illinois

To provide part of the expenses of the four American delegates to the first conference of the International Economic Association held in Monaco, September 1950

2,000

American Historical Association, Washington, D. C.

Toward the expenses of a committee to study and make recommendations concerning the better utilization of government records for the writing of history

1,000

American Public Welfare Association, Chicago, Illinois

For a study of the appropriate and feasible functions of the association, its natural clientele, and the nonfoundation sources from which it can be expected to finance such functions

5,000



Association of the Bar of the City of New York Fund, Inc., New York For use by the Special Committee on Atomic Energy of the Bar of the City of New York and its program of seminars to discuss atomic energy problems	\$ 2,500
Canadian Political Science Association, Toronto For part of the costs involved in sending delegates to the conference of the International Economic Association in Monaco and the conferences of the International Political Science Association and the International Sociological Association in Zurich in September 1950	2,000
Committee of Vice-Chancellors and Principals of the Universities, Great Britain Toward the costs of developing an exchange program in social sciences between British and West German universities	4,500
Cornell University, Ithaca, New York Comparative survey of adjustment to technological change, including a field study in Nova Scotia and analysis of studies made in other parts of the world	4,700
Council on Foreign Relations, New York Study of problems of aid to Europe; for completion of study, including honoraria for the sections on French and Italian economy, and preparation, printing and circulation of report	5,000
Ecole polytechnique, Paris, France Salaries of two assistants in the econometric and statistical laboratories of the Ecole polytechnique and the École des Arts et Metiers	3,600

Harvard University, Cambridge, Massachusetts	
Support of the preliminary work being done by the Laboratory of Social Relations on the study of small groups and on efficient ways to build up observer reliability in this type of research	\$ 7,500
Harvard University, Cambridge, Massachusetts	
Toward further preliminary research by the Laboratory of Social Relations in its study of social mobility and factors in social structure	9,000
Institut de Science économique appliquée, Paris, France	
In-training fellowships for student economists at the institute	5,080
Institut für Politische Wissenschaft, Freie Universität, Berlin, Germany	
Aid in building up its research facilities by the purchase of library materials from abroad	3,000
Institute of International Relations, Brussels, Belgium	
Costs of two studies, <i>The Industrialization of Central Africa</i> and <i>Economic Aspects of the European Rearmament Program</i>	7,250
Istituto per Gli Studi di Economia, Milan, Italy	
For the general program of social science research undertaken by this institute, which was started in 1946	2,500
Library of Congress, Washington, D. C.	
Survey of Soviet materials which are to be microfilmed and made available to research libraries throughout the United States	4,500

Library of Congress, Washington, D. C. Toward the cost of distributing surplus Russian newspapers and periodicals to the principal nongovernmental libraries con- cerned with Russian research	\$ 4,000
National Foundation of Political Sciences, Paris, France To provide visits to other countries for espe- cially qualified advanced students	4,000
National Opinion Research Center, University of Chicago, Illinois For use by a special committee of the Amer- ican Association for Public Opinion Re- search; to cover the expenses of participating in a series of seminars at several United States universities for a group of 10 or 12 foreign specialists who attend the annual meeting of the association	6,000
National Opinion Research Center, University of Chicago, Illinois To make available for research use the war- time files of the Surveys Division of the Office of War Information	1,200
Netherlands Economic Institute, Rotterdam Conference on the use of input-output tech- niques in economic analysis	1,200
Office national des Universités, Paris, France Toward expenses of a social-psychological study by the Ecole pratique des Hautes Etudes, Sixth Section, Paris.	1,000
Pacific Coast Board of Intergovernmental Relations, San Francisco, California For general expenses of this voluntary asso- ciation of governors and leaders of Wash- ington, Oregon and California, who meet to discuss means of improving and coordinat- ing governmental problems	7,500

School of Social Sciences, Helsinki, Finland To continue the study of social adjustment of displaced persons in Finland and the preparation of an English edition of this study	\$ 2,680
Smithsonian Institute, Washington, D. C. For use by the Institute of Social Anthro- pology in supporting the program of the Escola Livre de Sociologia e Politica de São Paulo in its social science research, training, publications and translations	6,000
Social Science Research Council, New York For the preparation and publication of a fellowship directory, which is to contain data on more than 1,000 persons who have had fellowship grants since 1924	9,500
Social Science Research Council, New York Support for the work of the Committee on Research in Economic History, including meetings of economic historians, fellow- ships, and the growing list of publications	10,000
Stanford University, Palo Alto, California Toward the expenses of seminars in Amer- ican studies in Japan	5,000
University of Copenhagen, Denmark Expenses of bringing lecturers to the Statis- tical Seminar organized by Professor Anders Hald	2,000
University of London, England Purchase of books and periodicals for the new Institute of Commonwealth Studies	1,500
University of Montreal, Canada Purchase of books and other printed mate- rials in the social sciences needed in the development of the new Department of Slavonic Studies	2,000

University of Oxford, England	
For use by the Agricultural Economics Research Institute in completing the Agriculture and Industry Enquiry initiated with Foundation funds in 1947	\$ 1,995
University of Uppsala, Sweden	
For the Sociological Institute in its study of marital adjustment in Sweden, based on the study of 100 happily married and 100 unhappily married couples	2,800
University of Vienna, Austria	
For the Institute of Economics and its study of subsistence problems on Alpine farms, an important aspect of the Austrian agrarian policy	1,500
University of Vienna, Austria	
Purchase of books and periodicals and for research assistance in the Statistical Institute, the Psychological Institute, the Institute of Criminology and the Institute of Economic Sciences	8,500

## INDIVIDUAL PROJECTS

Clark University, Worcester, Massachusetts; for the completion of a study of normative factors in criminal law by Professor Frederick W. Killian, at Yale University	1,500
Dr. Innocenzo Gasparini, Bocconi University, Milan, Italy; for a book on the role of capital in agriculture	2,500
George Peabody College for Teachers, Nashville, Tennessee; study of the sociopolitical background of recent changes in Czechoslovak education, by Professor Stanislav Velinsky, formerly of Charles University, Prague	2,500

Harvard University, Cambridge, Massachusetts; for completion of a history of economic thought which was started by the late Professor Joseph A. Schumpeter	\$ 4,000
Institute for Advanced Study, Princeton, New Jersey; toward special expenses incident to the study by George F. Kennan on the formulation of foreign policy during the first half of this century	5,000
Institute of Pacific Relations, Pacific Council, New York; completion of a study of Japanese Communism by A. R. Swearingen and Paul F. Langer	500
Northwestern University, Evanston, Illinois; toward the costs of a study by Professor Yale Brozen of the Department of Economics on the economic implications of technological change	9,720
Royal Institute of International Affairs, London, England; for the costs of publication of Frank P. Walter's <i>History of the League of Nations</i> , by the Oxford University Press (900 pages, two volumes)	1,425
Royal Institute of International Affairs, London, England; expenses of a study by Albert Hourani on Islamic society and the West	2,800
Schweizerische Sozialarchiv, Zurich, Switzerland; for the editing and compilation, by Dr. Benedikt Kautsky, of the correspondence between Karl Kautsky and Friedrich Engels and between Engels and August Bebel	6,000
Stanford University, Food Research Institute, Palo Alto, California; studies of food and agriculture in World War II by Professor Vladimir P. Timoshenko	10,000

Stanford University, Food Research Institute, Palo Alto, California; support of a study of Yugoslav agriculture during the inter-war period carried out by Dr. Jozo Tomasevich	\$ 1,000
Stanford University, Palo Alto, California; for use of the Hoover Institute and Library toward expenses of Dr. Sergius Yakobson, chief of the Foreign Affairs Section of the Legislative Reference Service of the Library of Congress, who is bringing up to date his analysis of May Day slogans in Soviet Russia	1,375
Swarthmore College, Pennsylvania; comprehensive analysis of the good neighbor policy of the United States by Professor Bryce Wood	3,000
University of Cambridge, England, Department of Anthropology; toward expenses of a field study in India by Dr. George M. Carstairs, under the supervision of Dr. M. Fortes	2,850
University of Southern California, Los Angeles; to supplement the book on Japanese Communism with annotated sources by A. R. Swearingen and Paul F. Langer	500
Yale University, New Haven, Connecticut; to enable James T. C. Liu, a specialist in Far Eastern diplomatic history, to complete his monograph study, <i>Sino-Japanese Diplomacy: 1933-1937</i>	3,700
Yale University, New Haven, Connecticut; to allow Professor Lloyd G. Reynolds to spend six months in Great Britain, France and Sweden in order to broaden the base of his study on wage determination and wage behavior	3,405

Yale University, New Haven, Connecticut; to permit R. S. Soerjotjondro, aide in the Indonesian Ministry of Foreign Affairs, to spend five months at Yale University studying international relations \$ 1,600

## TRAVEL GRANTS

Professor Conrad M. Arensberg, Bureau of Applied Social Research, Columbia University, New York City; industrial sociology; Dortmund Center for Social Research, Germany 1,300

Professor O. Bakker, Netherlands School of Economics, Rotterdam; the budget cycle; United States 1,800

Professor Jan Barents, University of Amsterdam, Netherlands; research for his study, *The Citizen in a Planned Society*; United States 3,700

Dr. Karl Brunner, Handelshochschule, St. Gallen, Switzerland; theory of money, credits and assets; United States 3,600

Professor Arthur F. Burns, director of research of the National Bureau of Economic Research, New York; international economics; England, Switzerland, Sweden, Belgium, Germany, Italy and France 2,500

Professor Ronald S. Edwards, London School of Economics and Political Science, England; industrial research; United States 1,750

Professor Jean-Charles Falardeau, Laval University, Quebec, Canada; sociology; University of Bordeaux, France 500

Professor Raymond Firth, London School of Economics and Political Science, England; Far Eastern studies; United States 150



Sir Ronald Fraser and Mrs. Marcus Fleming, Royal Institute of International Affairs, London, England; survey of Latin America to bring up to date the 1937 report, <i>The Republics of South America</i> ; United States and Latin America	\$ 3,626
Professor Ragnar Frisch, Institute of Economics, University of Oslo, Norway; economics; France, Italy, Germany and Holland, to attend conferences and give lectures	1,400
Dr. J. Goormaghtigh, Institute of International Relations, Brussels, Belgium; developments in teaching and research in international relations; United States	1,700
Mrs. Margaret Hall, Somerville College, University of Oxford, England; economics of distribution; United States	1,500
Dr. E. S. Kirby, University of Hongkong; Chinese economic history; Japan	1,200
Professor Tjalling C. Koopmans, director of the Cowles Commission for Research in Economics, University of Chicago, Illinois; econometrics; several European countries	2,500
Miss Barbara Kyle, The Royal Institute of International Affairs, London, England; library studies; United States and Canada	1,500
Hugh Donald Munro, London School of Economics and Political Science, England; field study of cultural change in St. Bernard Parish on the Ile-aux-Coudres in the St. Lawrence River; Canada	2,350
Professor Ralph Piddington, University of Edinburgh, Scotland; social anthropology; United States en route to a new post at Auckland University College, New Zealand	1,050

Dr. Victor Purcell, lecturer on Far Eastern history, University of Cambridge, England; political and economic survey of Southeast Asia; countries of Southeast Asia	\$ 2,081
Hanna Rizk, The American University, Cairo, Egypt; population research; United States	1,000
Dr. Lionel Robbins, London School of Economics and Political Science, England; economics; United States	1,800
Professor Bruno K. Suviranta, Bank of Finland and the University of Helsinki, Finland; the problem of reparations; United States and England	315
Professor and Mrs. Arnold Toynbee, Royal Institute of International Affairs, London, England; work on <i>A Study of History</i> ; Institute for Advanced Studies, Princeton, New Jersey	4,000
Professor W. Lloyd Warner, University of Chicago; sociology and anthropology; British Isles	500
Professor Tadao Yanaihara, director of the Social Studies Institute, Tokyo University, Japan; social science teaching and research; United States	300

# THE HUMANITIES

# THE HUMANITIES STAFF

During 1950

*Director*

CHARLES B. FAHS

*Associate Directors*

EDWARD F. D'ARMS<sup>1</sup>

JOHN MARSHALL

*Assistant Director*

CHADBOURNE GILPATRIC

<sup>1</sup> Appointed Associate Director effective January 20, 1950

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## THE HUMANITIES

**A**S will be noticed, the grants reported this year under the Humanities program appear under headings different from those of previous years. This reflects the fact that during 1950 the officers and Trustees of the Foundation undertook a thorough review of the opportunities for Foundation assistance in the humanities, as a result of which the interests of the Foundation have been consolidated, and in some measure redirected.

The first new heading, "Language, Logic and Symbolism," represents a general interest in the theory and analysis of the processes of communication, which developed out of the Foundation's long-standing concern with the general study of language. In its present consolidated, more sharply defined expression, this interest is directed toward problems such as those centering in the interplay of thought and language, with emphasis on the problem of meaning.

The second heading, "Intercultural Understanding," also represents the consolidation of a well-established Foundation goal: to promote research and interpretative work aimed at making one culture, or group of cultures, more understandable to mem-

bers of another. With humanistic programs dealing with Far Eastern, Slavic and Latin American cultures now firmly established in major institutions of higher learning in the United States, the Foundation is beginning to turn its attention to the development of similar studies in other countries and to the development of wide means of achieving understanding. Intercultural understanding poses problems that exceed the range of the questions ordinarily considered by the various disciplines of the humanities, and by the interdisciplinary area studies, as well. At this juncture in world affairs, the critical problem of how the people of one culture can arrive at some workable grasp of the tradition, thought and outlook of the people of other cultures deserves, at the very least, serious exploration.

The third heading, "General," was designed to allow leeway for some further definition of interests in later years. Under this heading are gathered together Foundation efforts to assist work in the fields usually considered the main content of the humanities, that is to say, work in philosophy, history, literature and the other arts. Responsible philanthropy in these fields entails questions of ways and means that have not perhaps ever been entirely resolved. First and foremost is the question of what particular undertaking in any one of them most merits and can most benefit from such aid as the Foundation is able to grant, since it is clearly beyond the Foundation's resources to attempt to meet the



demands on an over-all scale. In order to choose fairly among the many requests in the field of the humanities presented to the Foundation, impartial and timely criteria of need and potential effect must be established. In this way the program in the humanities can be kept flexible and adapted to changing conditions.

Grants in the humanities for 1950 totaled \$1,491,250, with \$119,600 appropriated for two projects in language, logic and symbolism; \$366,400 for five projects in intercultural understanding; and \$480,250 for five projects in the general category. In addition, the grant-in-aid fund for 1950 was supplemented by an allocation of \$100,000, and funds of \$125,000 and \$300,000 respectively were set aside for fellowships to be administered by the Foundation (see pages 298-301) and for grants in aid during 1951.

### LANGUAGE, LOGIC AND SYMBOLISM

UNIVERSITY OF MICHIGAN

LANGUAGE AND SYMBOLISM

Ordinarily problems in language have been dealt with by psychologists, sociologists, anthropologists, linguists, literary critics and philosophers in a rather isolated manner, each group having too little knowledge of what the others were doing. Fortunately, studies concerning the broad problems of language and symbolism have not yet diverged far enough to make mutual understanding impossible, and an at-

tempt to integrate them can still have hope of success. In the opinion of many to whom these problems are of deep concern, the time has come to try to correlate the various points of view and to develop a coherent theory of the human use of symbols around which there can be shaped sound strategies for future research.

The Rockefeller Foundation has appropriated \$69,600 to the University of Michigan, Ann Arbor, for a program of cross-disciplinary studies in the theory of language and symbolism during the period ending September 30, 1952. Attention is to be directed to such topics as: 1) the growth of concepts; 2) the powers and limitations of languages; 3) the relationship between cognitive and noncognitive aspects of communication; and 4) the role of communication in the arts, and its relation to personality.

In the case of each of the above topics, the aim will be to provide a summary of all recent work, regardless of the science or discipline in which that work was done. An effort will also be made to provide a common vocabulary for stating these results, to project a unified program of research and to clarify the standard problems in such a way as to be able to formulate new questions. Professor Charles Stevenson and Professor Paul Henle, in collaboration with scholars in sociology and psychology at the University of Michigan, will take the first steps in getting the project under way. Visiting scholars are to be brought in for collaborative studies, and research associates are to be appointed. The funds provided

by the Foundation will go chiefly to cover expenses for salaries, conferences, travel and consultations.

## HARVARD UNIVERSITY

### DESCRIPTION OF THE RUSSIAN LANGUAGE

A detailed analysis and description of the contemporary Russian language, currently in progress at Harvard University under the direction of Professor Roman Jakobson, covers the five fields of phonetics, morphology, syntax, lexicology and pragmatics. The Rockefeller Foundation is contributing \$50,000 toward this project over a five-year period. In the preparation of the analysis Professor Jakobson is enlisting the cooperation of scholars in fields other than linguistics, such as acoustics, psychology, logic and criticism.

This kind of full description of one of the great contemporary languages is generally recognized as a prerequisite to the further development of linguistic research and theory. Russian is one of the most interesting languages for this purpose because of the large, varied and literate population which uses it, the rapid changes it has undergone during the last century, and the contrasts between its structure and that of the other great contemporary languages. In the realm of immediate practicality the study will help in the teaching of Russian, which has been handicapped by the lack of authoritative analysis and description of many important aspects of the language. Finally, this work will undoubtedly contribute to solving the problem of the mutual trans-

latability of Russian and the other world languages in ways that should be of considerable importance in international negotiation and communication.

## INTERCULTURAL UNDERSTANDING

CORNELL UNIVERSITY

SOUTHEAST ASIAN STUDIES

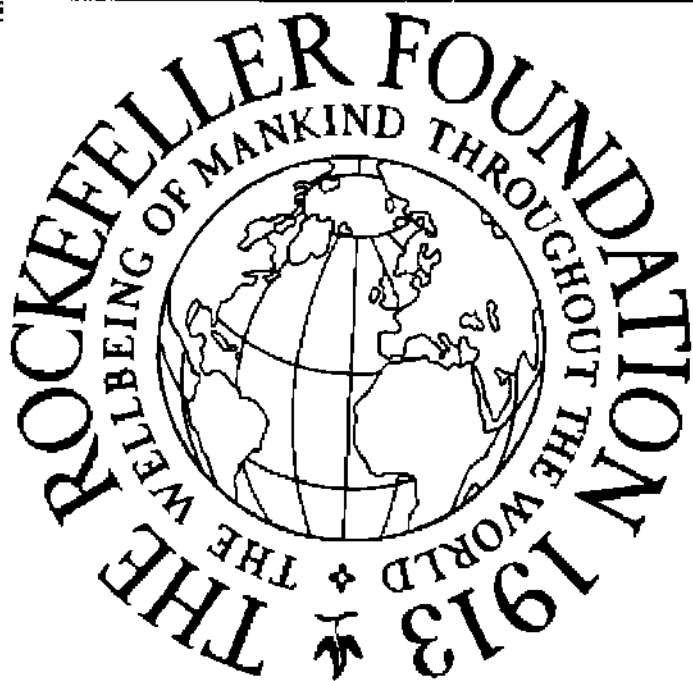
With the increased importance of Southeast Asia in current world affairs, additional facilities are urgently needed for research in regard to this area and for the training of men and women who are well versed in the problems of the region. Southeast Asia includes Burma, Thailand, Indochina, Malaya, Indonesia and the Philippines. The Foundation has made available the sum of \$325,000 to Cornell University, Ithaca, New York, for a program of Southeast Asian studies during the five-year period ending June 30, 1956. The aim of the grant is to create a major American center for studies of Southeast Asia by enabling Cornell to develop its existing resources and teaching capacities into a well-rounded program.

Research is to be concentrated on three important Southeast Asian topics: 1) technological and economic changes in this area; 2) political structures and ideologies of the area as modified by the impact of United States and United Nations programs; and 3) studies of Chinese and Indian minority groups in Southeast Asia. The funds provided by the Foundation grant will make it possible to add two professors to existing staff; to encourage, by means of research fellowships, a group of graduate students to include

Henry E. Huntington  
Library and Art Gallery,  
San Marino, California



Photograph Excised Here



The Curator of Gothenburg's  
Ethnographical Museum  
peruses a rare historical  
item recently acquired by  
the university's Committee  
for Latin American Studies

Photograph Excised Here

Austrian newspapermen visiting the University of Missouri compare notes on  
American and Continental journalism



Photograph Excised Here

the study of Southeast Asia in their training; and to undertake a program of field research. Professor Lauriston Sharp will direct the program.

**ST. VLADIMIR'S ORTHODOX THEOLOGICAL  
SEMINARY AND ACADEMY  
SLAVIC STUDIES**

St. Vladimir's Orthodox Theological Seminary and Academy, New York, is a training school for candidates for the ministry of the Orthodox Catholic Church in the United States and for other Eastern Orthodox churches. Included in its faculty are a number of scholars of the religious thought of Russia and the several Eastern Orthodox churches. Of the scholars in question, one is working on a six-volume history of the Eastern church, of which two volumes have already been published, another is writing on religious motives in Russian literature, and a third on the history of religious thought in Russia.

In recognition of the importance of this work for a better understanding of Russian thought and tradition, The Rockefeller Foundation in 1949 made a grant of \$5,000 to the seminary, which was followed in 1950 by a grant of \$13,500, to free part of the time of these scholars for research and writing over a three-year period, and to enable them to secure needed materials and clerical assistance.

**UNITED BOARD FOR CHRISTIAN COLLEGES IN CHINA  
INTERPRETATION OF CHINESE PHILOSOPHY**

A grant of \$3,900 was made in 1950 by The Rockefeller Foundation to the United Board for Christian

Colleges in China in continuance of support of the work being done by Dr. Y. P. Mei, formerly professor of philosophy and dean of the College of Arts and Letters at Yenching University in Peiping, China.

Dr. Mei, at present in America, is preparing two volumes: a *Source Book in Chinese Philosophy*, containing selections in English translation of important passages of all major Chinese philosophers from antiquity to the present time, and a *Story of Chinese Philosophy*, an interpretation of major Chinese thinkers.

#### STANFORD UNIVERSITY — TOKYO UNIVERSITY SEMINARS IN AMERICAN STUDIES

During the summer of 1950, a seminar in American studies was held in Japan under the joint sponsorship of Stanford University and Tokyo University. Five Stanford professors participated in a four-week program at Tokyo University, attended by about 130 graduate students, professors and deans from all parts of Japan. During these four weeks studies were concentrated on American history, diplomacy, philosophy, government and economics. In addition, a fifth week was given over to round-table conferences and lectures on selected phases of American area studies and their development, and a sixth and final week was devoted to similar conferences at Hokkaido University in Sapporo.

The 1950 seminar was financed in part by two Rockefeller Foundation grants in aid of \$5,000 each made by the Humanities and the Social Sciences



divisions to Stanford University for salaries and expenses of the five American professors. An additional appropriation of \$1,000 was made to Tokyo University to aid in defraying expenses incurred during the summer. For a 1951 seminar, grants of \$20,000 and \$3,000 to Stanford and Tokyo Universities respectively have been made jointly by these same divisions. These funds will be used in part for the purchase of American books and supplies which are critically lacking in Japan at the present time.

#### GENERAL

##### HENRY E. HUNTINGTON LIBRARY AND ART GALLERY STUDIES OF THE AMERICAN SOUTHWEST

In 1943 The Rockefeller Foundation made a grant of \$50,000 to the Henry E. Huntington Library and Art Gallery, San Marino, California, for studies in the history and culture of the American Southwest, defined as southern California, Arizona, Nevada, Utah and New Mexico. The major part of this money was used to provide grants in aid to individual research workers. Among the volumes published or scheduled for early publication as a result of projects thus aided are: *The Federal Government's Indian Policy in the Southwest*, by Edward E. Dale of the University of Oklahoma; *Culture of the Southwest*, by J. Frank Dobie of Austin, Texas; *Community Development in the Southwest*, by Glenn S. Dumke of Occidental College; *Virgin Land: The Impact of the West on Nineteenth Century American Thought*, by Henry Nash Smith of the University of Minnesota;

and *Literary Development of Southern California*, by Franklin Walker of Mills College. In addition, between 25 and 30 articles have appeared in well-known historical or literary magazines, and the library has been able to augment greatly its collections of source material on the Southwest.

In continuing this work some of the topics under consideration are the effect of motion pictures, radio and television upon American letters and creative writing; drama, art and music outside the metropolitan centers; manufacturing versus agriculture in California; and the influence of Mexican culture on the Southwest, western Colorado, southern Montana and Idaho. The trustees of the Huntington Library have appropriated \$25,000 over a five-year period toward expenses of this project; aid from The Rockefeller Foundation was renewed in 1950 with a five-year grant of \$25,000.

## COLEGIO DE MÉXICO

### RECENT HISTORY OF MEXICO

Since 1942 The Rockefeller Foundation has assisted the Colegio de México in various projects in the fields of history, literature and linguistics. In 1948 the Colegio received a Foundation grant of \$10,000 to be applied to the preparation of a history of modern Mexico by Dr. Daniel Cosío Villegas.

Dr. Cosío Villegas is making a study of the political, economic and social aspects of the history of Mexico from 1867 to 1950. A knowledge of this era of Mexican history is essential for an understanding

of contemporary Mexican internal and international problems. The period, which includes among other events the long rule of Porfirio Diaz and the Mexican Revolution, is one on which little significant research has been done by either Mexican or American historians. The Rockefeller Foundation's 1950 grant of \$14,500 to the Colegio de México is to be used over a two-year period primarily for a research seminar on contemporary Mexican history conducted by Dr. Cosío Villegas. The grant will serve the double purpose of training young scholars and contributing to a sounder knowledge of this important period of Mexican history.

INSTITUTE OF INTERNATIONAL EDUCATION  
STUDENT ARTIST EXCHANGE PROGRAM

The Institute of International Education in New York has for a number of years been active in promoting fellowship and interchange activities between the United States and other countries. With the cooperation and support of interested governments and numerous organizations in this country, the institute brought a selected group of leading young foreign artists to the United States for a period of carefully planned visits and observations. The Rockefeller Foundation appropriated \$23,000 to the Institute of International Education for this work during the year 1950.

The program was a continuation of the successful project carried out in the summer of 1949, when the Institute of International Education assumed direc-

tion and administrative responsibility for the Student Artist Exchange Program inaugurated by the Collegiate Council of the United Nations. For that project, as well as for the 1950 program, transportation to and from the United States was provided from other sources, and assistance in the way of facilities was offered by such art groups as the Art Students League, the Authors League, the American National Theatre and Academy and the Berkshire Music Center. Artists between the ages of 25 and 35 were selected on the basis of their promise in various fields of the arts. Preliminary selections were made in each country by the ministries of education, and final selections by advisory committees of the Institute of International Education representing each field of the arts. The artists came to this country specifically for the purpose of participating in a program which suited their needs — with the understanding that after the program was concluded they would return to their home countries.

The program of visits and observation included an orientation period in New York, visits to appropriate art centers in the United States, a period of either creative work or study at a school, an evaluation period in New York with a final conference in which American artists participated, and an exhibition of selected works by the group. Some 20 artists from 13 countries were chosen to participate in the program. The fields represented were: architecture, art, dance, film, literature, music and the theater. The countries from which artists were selected included the United

Kingdom, the Netherlands, Nicaragua, India, Mexico, Colombia, Austria, France, Japan, Israel, Italy, Switzerland and Finland.

UNIVERSITY OF MISSOURI  
PROGRAM FOR AUSTRIAN JOURNALISTS

The American Press Institute's 1948 project for German press personnel and its 1950 project for Japanese journalists, both of which were carried out under grants from The Rockefeller Foundation, amply demonstrated the importance of work in the field of journalism in developing objective news reporting and in encouraging responsible citizenship in democracies. A Foundation grant to the University of Missouri, Columbia, in 1950 brought a group of ten Austrian journalists to the United States for a similar program. The university received the sum of \$24,000 to meet the travel and other expenses of the visitors.

The Austrian journalists were chosen by a selection committee consisting of three Austrian editors and three American correspondents in Austria, with assistance from representatives of the Press Ministry of the Austrian government and from the United States Allied Commission for Austria. The United States Legation, the United States Minister to Austria and the United States High Commissioner to Austria concurred in the selections, which were also approved by the University of Missouri. Those chosen came from Vienna and from other cities in the British, French and American zones of Austria.

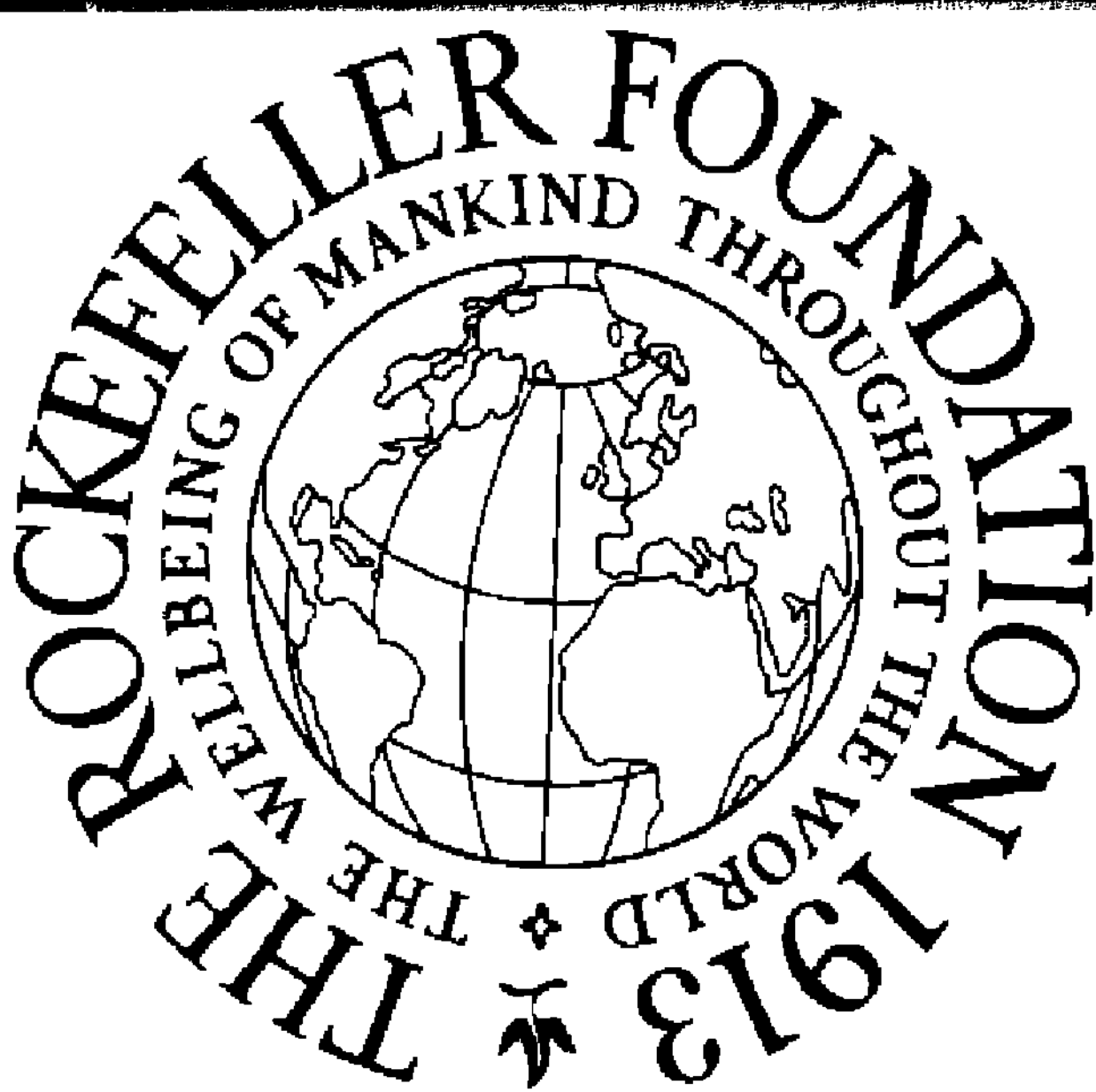
Transportation to and from this country was furnished by the United States Army, and the group arrived in New York on May 31. The Army also provided a preliminary ten-day orientation tour of the eastern part of the United States, following which the Austrians departed for the University of Missouri School of Journalism.

At the School of Journalism, the Austrians were given a one-week introduction to the problems of the American press. They then spent one or two weeks each in an on-the-spot study of the newspapers of Des Moines, Kansas City, St. Louis, Memphis, Cleveland and Washington. At the conclusion of their tour, the group returned to the School of Journalism, where they had an opportunity to discuss their impressions and to consider which of the principles and practices they had observed might be applicable to Austrian newspapers. At the close of their work at the University of Missouri, the Austrians had two weeks in which to travel to places of special interest, as determined by their own professional needs and wishes. Despite the fact that many Austrian papers are political party organs, it is hoped that the insight into the functions of the American press gained by this group will serve as a stimulus for the further development of a vigorous, democratic Austrian press.

#### AMERICAN COUNCIL OF LEARNED SOCIETIES

##### GENERAL SUPPORT

The American Council of Learned Societies was organized in 1919 specifically to represent the United



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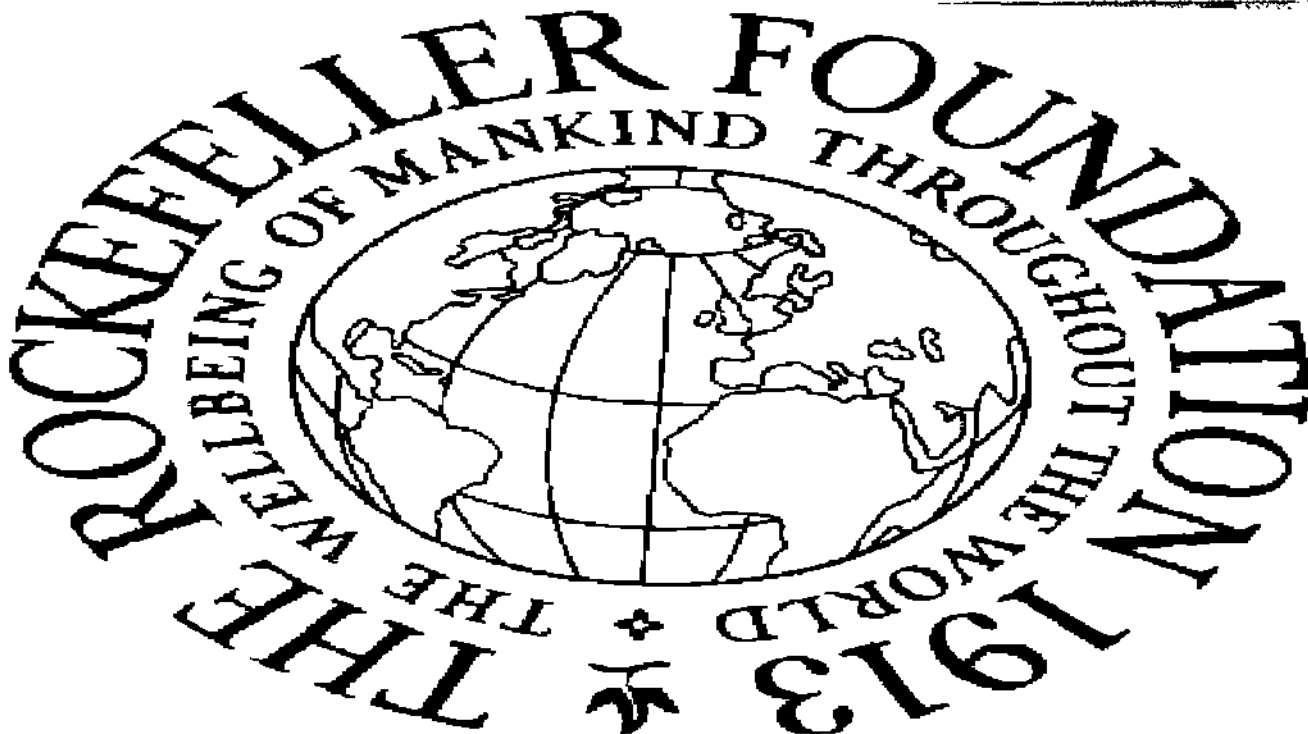
Professor Y. P. Mei, formerly of Yenching University, now visiting Wabash College, Crawfordsville, Indiana, while he prepares materials on Chinese philosophy for Western scholars



Photograph Excised Here

A session of the 1950 summer seminar in American studies in Tokyo, sponsored jointly by Tokyo University and Stanford University

Informal panel discussion, Commission on the Occupied Areas, American Council on Education



Photograph Excised Here



States in the International Union of Academies. Since that time the council's functions have expanded into the planning and development of humanistic studies in this country. The members of the American Council of Learned Societies make up three working panels — on knowledge of Eastern cultures, on international cultural relations and on publications in the humanities. Particular stress has been placed upon studies of little-known areas: typical in this respect is the work of the Committee on Near Eastern Studies, which in 1947 assumed responsibility for surveying and evaluating United States facilities for research and education on the Near East and United States personnel with a knowledge of the Near East, as well as for indicating possible ways of overcoming major deficiencies with regard to these. The awarding of fellowships, an important activity of the council, at present falls under two headings — fellowships at the predoctoral level, with particular emphasis on interdisciplinary studies, and awards to candidates of unusual promise for first-year graduate work.

Since 1926 the American Council of Learned Societies has received for its work about \$5,700,000, exclusive of funds received under government contracts for services during World War II. Of this total, The Rockefeller Foundation, together at an earlier period with the General Education Board and The Laura Spelman Rockefeller Memorial, contributed nearly \$4,000,000, or 68 per cent. The 1950 grant of \$393,750 for general support of the council's work (including fellowship awards) for three years

beginning July 1, 1951, involves a progressive reduction in the rate of Foundation support in the two years after July 1, 1952. This reduction does not stem from any dissatisfaction with the work of the council, but rather from the belief that, as the representative of humanistic scholarship in the United States, the council should not be dependent on any single agency for so large a proportion of its support.

This view has been fully discussed with the director and officers of the council, who are already seeking to broaden the council's base of support, in the expectation of making it more representative of the interest in the humanities which exists in the United States. At the same time, it has been made clear to the council that The Rockefeller Foundation remains ready, quite apart from the question of general support, to consider its requests for assistance in specific projects or activities, when such assistance comes within the scope of the Foundation's program in the humanities.

#### GRANTS IN AID

The Humanities division awarded more than 100 grants in aid during 1950 out of the \$350,000 allotted to this phase of its program. As the very nature of the work in the field of humanities is characteristically individual, many of the grants in aid were made for single projects or studies in which small groups were participating. In the following list of grants in aid it

will be noted that special emphasis was placed on the encouragement of area studies, particularly on Latin America and the Far East. Numerous general grants were made for work in linguistics, philosophy, literature and literary criticism, for the study and writing of history and, in several instances, for the purchase of books and printed materials for developing libraries in the humanities.

Among the grants in aid awarded for the support of individual projects and the grant-in-aid appropriations to universities, libraries and research organizations were the following:

#### INDIVIDUAL PROJECTS

American National Theatre and Academy; for a survey by Allen Mandelbaum of audience understanding and reaction to T. S. Eliot's poetic drama, <i>The Cocktail Party</i>	\$ 3,419
Professor Charles Aubrun, University of Bordeaux, France; to enable Professor Aubrun, secretary of the committee which edits the <i>Bulletin Hispanique</i> , to visit centers of Hispanic studies in the United States following his trip to the West Indies, Venezuela and Mexico	1,500
Jean Benoit-Levy, director of the Institut des Hautes Etudes cinematographiques, France; educational films; University of California, Los Angeles	650
Vittorio de Caprariis; travel through Europe for further study in connection with his work in historical research, for three months in 1950 and three months in 1951	1,200

Dr. John W. Caughey, managing editor of the <i>Pacific Historical Review</i> ; to undertake a study of the role of criticism in the writing and study of history	\$ 6,600
Columbia University, New York; to enable Mrs. Susanne K. Langer to complete her book on the philosophy of art with its comprehensive treatment of the problems which unite and distinguish the major arts	500
Columbia University, New York; to enable Professor John Lotz to spend one year investigating linguistic and related problems in the general theory of communications	4,500
Columbia University, New York; to assist Sir George Sansom, director of the East Asian Institute of Columbia University, with travel and living expenses while on a tour of the Far East	1,700
Commission on History of the Pan American Institute of Geography and History; completion of a manuscript on the history of Cuban historiography by Carlos Funtanellas	1,150
Commission on History of the Pan American Institute of Geography and History; support of the historical studies on Peru by Dr. Jorge Basadre	1,920
Cornell University, Ithaca, New York; to enable Professor Max Black, professor of philosophy, to prepare a book on the philosophy of language which will interest the intelligent lay reader	1,200
Cornell University, Ithaca, New York; study of the problem of bilingualism by Professor R. A. Hall, Jr., of the Cornell faculty	1,000

Dallas Civic Theatre, Texas; to enable Miss Sari Scott to be resident playwright there during the 1950-1951 season	\$ 2,500
Dartmouth College, Hanover, New Hampshire; to allow Dr. Francis W. Gramlich, chairman of the Department of Philosophy, to complete his course of study and training at the Boston Psychoanalytic Institute, Massachusetts	2,350
Allan George Davis, director of the Old Vic Theatre, Bristol, England; visits to centers of drama in California	500
Michel Déon; extension of his stay in the United States and visits to French communities in Louisiana and French writers in Canada	550
Delegates of the Press, University of Oxford, England; to allow Mrs. Isaac Deutscher to assist her husband in consulting materials available in the United States and Canada for his study of the history of the Soviet Union	800
Isaac Deutscher, Oxford University Press, England; purchase of dictating apparatus to be used in the United States and Canada in connection with his research on the history of the Soviet Union	375
Dr. J. H. Dubbink, The Hague, Netherlands; to spend three months in Paris continuing his studies in Russian philosophy and religion during the summer of 1950	1,000
Professor Fritz Ernst, University of Heidelberg, Germany; travel expenses to the United States for an historical study and observation of higher education in America	2,800

C. P. Fitzgerald, Australian National University, Canberra; living expenses for a seven-week visit to the United States, to obtain a direct acquaintance with centers of Far Eastern studies, following a trip to Europe for the same purpose	\$ 1,000
Mrs. Else Frenkel-Brunswik, lecturer in psychology, University of California, and member of the staff of the Child Welfare Institute, Berkeley; to make a survey in Europe of philosophical and psychological studies of fundamental attitudes and value patterns	1,000
Dr. Frederick Friedman, University of Arkansas, Fayetteville; to continue research in Italy on the philosophy of Italian civilization, particularly the structure of values among the peasants of that country	7,000
Philip Hamburger, television critic for <i>The New Yorker</i> ; preparation of a report on the artistic and educational possibilities of television	250
Harvard University, Cambridge, Massachusetts; for the preparation of a book, <i>China's Response to the West</i> , by Professor John K. Fairbank	2,780
Harvard-Yenching Institute, Harvard University, Cambridge, Massachusetts; to allow Dr. James R. Hightower to complete a bibliographical survey of all available materials on Chinese literature	1,200
H. S. Hurn, director of school and community drama, Department of Education, British Columbia, Canada; for a direct survey of school and community drama in the United States	1,400

Professor F. C. Jones, University of Bristol, England; to carry on his studies of recent Far Eastern history in research centers in the United States	\$ 4,000
Dr. Akdes Nimet Kurat, professor of history, University of Ankara, Turkey; trip to the United States to study relations between the United States and the Near East during the second half of the nineteenth century and the first years of the twentieth century	5,700
Laboratory of Anthropology, Santa Fe, New Mexico; assistant for Kenneth Chapman and aid for his work on Indian art	3,000
Library of Congress, Washington, D. C.; to enable H. J. Horch, graduate student in Brazilian literature at the University of Hamburg, to extend his stay in the United States for a greater contact with Latin American studies in this country	700
Professor Paul Menzerath, director of the Phonetics Institute, Bonn, Germany; to confer with American linguists	500
Dr. Hussein Mones, assistant professor of history, Fouad I University, Cairo, Egypt; visit to the United States and Canada to gain a direct acquaintance with work being done in the field of history	3,800
National Museums of Korea; emergency needs in connection with work being done by Dr. Kim Chewon, director general of the National Museums of Korea, and his staff	2,000
The National Theatre Conference, Cleveland, Ohio; to enable Mordecai Gorelik to continue his survey of European drama by travels through Poland, England and possibly Scandinavia	2,500

New School for Social Research, New York; support for Dr. Hellmut Lehmann-Haupt in his study, <i>Art Under and After the Nazi Dictatorship</i>	\$ 10,000
Office national des Universités, Paris, France; toward expenses of a study on the history of communications by F. Hepner, under the auspices of the Ecole pratique des Hautes Etudes, Sixth Section, Paris	2,000
Pomona College, California; further support of the work of Dr. Chen Shou-yi on the history of Chinese literature	4,000
Princeton University, New Jersey; transportation to and from the United States for J. O. Urmson, University of Oxford, in connection with his appointment as an exchange professor in the Department of Philosophy at Princeton	500
Dr. S. R. Ranganathan, Delhi, India; to visit the United States and various centers in Europe and continue his work on the classification of knowledge	5,500
Roosevelt College, Chicago, Illinois; to enable Wayne A. R. Leys to make an ethical analysis of policy questions	10,000
A. L. Rowse, All Souls College, University of Oxford, England; to visit centers of historical study in the United States and to discuss with American scholars the problems of historical study and writing	2,000
Silliman University, Negros Oriental, Philippines; preparation of a college textbook in freshman English for use of students in the Philippine Islands by Mrs. Edilberto K. Tiempo	750



Stanford University, Palo Alto, California; to enable Professor Hubert Heffner, director of the theater at Stanford, to continue his studies abroad of types of characters presented in the dramas of England and France, as expressive of national characteristics and aspirations	\$ 3,000
Stanford University, Palo Alto, California; series of seminars directed by Professor and Mrs. Wallace Stegner in the course of their trip to the Orient; discussion of the problems of writing with groups of young writers in India, Japan, the Philippines and Indonesia	10,000
Stanford University, Palo Alto, California; cost of assembling and shipping books in modern literature to Far Eastern universities for the seminars of Professor Wallace Stegner with young writers in the Orient	400
Professor Gunnar Tidestrom, professor of literature, University of Uppsala, Sweden; to make possible a direct contact with writers and scholars in the field of literary criticism in the United States	4,200
Union Theological Seminary, New York; series of discussions by Dr. Daisetz T. Suzuki, Japanese philosopher, on Zen Buddhism, at universities and theological schools in the eastern United States	2,500
University of California, Los Angeles; to permit the appointment of H. M. Forgy and Franz Martin as playwrights in residence at the university's Department of Theater Arts	2,000
University of California, Berkeley; for the study by James F. King on the abolition of slavery in the Americas	3,000

University of Chicago, Illinois; to enable Professor Charles Morris of the Department of Philosophy to complete his study of empirical values	\$ 1,000
University of Gothenburg (Goteborgs Hogskola), Sweden; to allow S. Henry Wassen, curator and librarian of the Gothenburg Ethnographical Museum, to visit European centers of Latin American studies, on behalf of the university's committee for Latin American studies	500
University of Michigan, Ann Arbor; continuation of a critical study by Dr. Joseph K. Yamagiwa on the comparison of Japanese and English literature, and for related travels in Japan and the United States	8,000
University of Michigan, Ann Arbor; transportation for Professor Shiro Hattori of Tokyo University, Japan, to and from Ann Arbor, where he will teach and study linguistics	1,200
University of North Carolina, Chapel Hill; trip of Mr. and Mrs. Paul Green to the Far East and Southeast Asia to become familiar with work in drama native to those areas, largely through contact with the leading persons in the field of drama	10,000
University of Toronto, Canada; to enable Henryk Mehlberg, visiting lecturer at the university, to complete a book on the theories of truth	1,500
Vanderbilt University, Nashville, Tennessee; for a study by Samuel E. Stumpf, associate professor of religion, on the role of values in legal decisions	5,800

Washington and Lee University, Lexington, Virginia; a study by Dr. Marshall W. Fishwick, assistant professor of American studies, on culture heroes and their relation to society	\$ 750
William Penn Charter School, Philadelphia, Pennsylvania; to enable Dr. Waldo E. Sweet, classics master at the school, to spend the summer of 1950 at the University of Michigan for further linguistic study and work on his methods of teaching Latin	650
Yale University, New Haven, Connecticut; to enable Professor Hajo Holborn to complete his book, <i>The Western Conception of History</i>	6,000
Dr. Silvio Zavala, president, Commission on History of the Pan American Institute of Geography and History; to visit centers of Latin American studies in Europe	1,300

## UNIVERSITIES, LIBRARIES AND RESEARCH ORGANIZATIONS

American Council of Learned Societies, Washington, D. C. Expenses of a conference on the "Problems of Uniformities in History" at Princeton University, New Jersey, in November 1950	3,000
American Council of Learned Societies, Washington, D. C. Study aids for American students of the humanities to study the Near East at American universities during the summer of 1950	7,500
American Council of Learned Societies, Washington, D. C. Toward expenses involved in the purchase of current Soviet publications for American libraries	2,850

## American Music Center, New York, N. Y.

Compilation of a *Manual of Information on American Music*, which will include a bibliography of existing books on American music, a list of publishers and the type of music in which they specialize, a listing of review files of American music to be found in scholarly magazines, trade magazines and some of the daily press, a list of music depositories set up in Latin America and in the Occupied Countries on the recommendation of the National Federation of Music Clubs, a description of the most significant public, college and private collections and how to use them, as well as other materials from the files of the American Music Center

\$ 7,000

## Amerika Gakkai, Tokyo, Japan

Support of research for the preparation of a documentary history of the American people by the Amerika Gakkai, or American Studies Association, which was organized in Tokyo shortly after the American occupation

2,500

## Austrian College Society, Vienna

To enable two members of the college to visit educational centers in Western Europe and the United States in the interest of the new program of research in contemporary European culture

6,000

## Committee of Vice-Chancellors and Principals of the Universities, Great Britain

Toward the costs of developing an exchange program between British and West German universities

4,500

Conferences and studies in semantics; the Humanities division wishes to support a few conferences and studies bringing together specialists in the field of semantics	\$ 7,500
Cornell University, Ithaca, New York	
To support the cooperative studies on problems of language, meaning and communication theory by "The Philosophy of Language Study Group"	2,000
Dartington Hall Trust, Totnes, South Devon, England	
Toward increased travel costs in the United States for Americans taking part in the theater summer school at Dartington Hall	300
Institute for Research in Language Teaching, Tokyo, Japan	
Purchase of books and other printed materials needed in the library	400
Istituto per l'Oriente, Rome, Italy	
To develop the work of the institute in the field of Near Eastern studies	5,000
Library of Congress, Washington, D. C.	
Survey of Russian newspapers and periodicals which are to be microfilmed in the United States	4,500
Linguistic Society of Paris, France	
Travel and conference expenses in connection with the collaborative development of language theory in Europe, which Emile Benveniste, professor of linguistics at the College of France, is fostering	4,300
Montana State University, Bozeman	
Toward the cost of a summer humanities institute on the life and traditions of Montana, directed by Joseph Kinsey Howard	8,000

National Institute of Anthropology and History, Mexico, D. F. Purchase of equipment for the center of archival microfilms at the Museum of History	\$ 3,000
Society of Biblical Literature and Exegesis, Philadelphia, Pennsylvania Provision of research assistants and materials needed to establish a critical apparatus of the Greek New Testament, a joint enterprise of British and American scholars	10,000
Stanford University, Palo Alto, California Toward expenses of seminars in American studies in Japan during the summer of 1950	5,000
Studies and conferences on the subject of literary reviewing; for four persons asked to make reports on the subject; for their travel and a conference with officers of the Humanities division	1,500
Texas State Historical Association, Austin Toward completion of a <i>Handbook of Texas</i> , which is to be a complete encyclopedia of Texas history, biography and culture	3,750
United States Book Exchange, Washington, D. C. Purchase and distribution to foreign libraries of 200 copies of The Reverend Anson Phelps Stokes's book, <i>The Church and State in the United States</i>	5,000
University of Aarhus, Denmark Purchase of books needed for a basic collection in American literature and civilization	800
University of Amsterdam, Netherlands Purchase of books and periodicals in the field of literary criticism for use in the English Seminar at the university	2,000

University of California, Berkeley	
To enable the university to purchase a collection of Korean books located in Japan	\$ 7,500
University of Gothenburg (Goteborgs Hogskola), Sweden	
To enable the university's Committee for Latin American studies to obtain books and other materials needed for the further development of Latin American studies	4,000
University of Hawaii, Honolulu	
Toward expenses of publishing a <i>Journal of Comparative Philosophy</i> , which grew out of the 1949 meeting at the University of Hawaii of representatives of Eastern and Western philosophy	5,000
University of Illinois, Urbana	
Toward the cost of a seminar held during the summer of 1950 on the planning and production of radio programs in the humanities, particularly for use by the noncommercial radio stations of the United States	7,700
University of Montreal, Canada	
Purchase of books and other printed materials in the humanities for the Department of Slavonic Studies	2,000
University of Oslo, Norway	
To acquire books and periodicals useful in the expanding program of research in American literature and history	2,500
University of Rome, Italy	
Books and materials to be purchased for the university's program of American studies	5,000
University of Tehran, Iran	
Purchase and shipment to the university library of selected Western books in philosophy and literary criticism	200

University of Vienna, Austria

To allow the new Institute of Translation  
there to purchase needed books and equip-  
ment

\$ 2,000

Yale University, New Haven, Connecticut

To complete the project for the selection,  
purchase and shipment of Western literature  
to centers of study in the Far East

2,500



## **OTHER APPROPRIATIONS**



## OTHER APPROPRIATIONS

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## OTHER APPROPRIATIONS

**D**URING 1950 nine appropriations were made by The Rockefeller Foundation for projects that cannot be classified under any single divisional program of the Foundation. They are discussed separately, not because they are different or less important than the divisional appropriations, but because the money provided came from general funds.

The total sum appropriated for these nine grants was \$372,500. Six of the grants are in the field of international education. One deals with a special project combining scientific and historical research at Yale University, another will strengthen a national organization serving both public and private education and a third provides for the publication of a directory of Rockefeller Foundation fellowships.

### AMERICAN COUNCIL ON EDUCATION

The American Council on Education had its origin in 1918 when the pressures of the First World War brought 11 national organizations together to create a council that would coordinate all of their activities and that would be able to speak for both public and private education. The American Council on Education has three classes of membership: 1) the constituent national educational organizations and other

bodies of similar character; 2) institutional members, such as accredited universities, colleges and technical schools, state departments of education, and a limited number of local school systems and private secondary schools; and 3) associate organizations dealing with related interests.

While commonly grouped as one of the four national councils concerned with education and research, the role of the American Council on Education differs from those of the National Research Council, the Social Science Research Council and the American Council of Learned Societies. It is not concerned chiefly with the advancement of scholarship and research, but seeks rather to further common interests, formulate policies, promote cooperative action and serve as a liaison organization between education and the various federal agencies. The chairman of the council in 1949-1950 was Dr. James B. Conant, president of Harvard University, and its newly elected president is Dr. Arthur S. Adams, formerly president of the University of New Hampshire. In 1950 The Rockefeller Foundation made an appropriation of \$150,000 for the general purposes of the council. The grant is intended to provide some assurance of financial stability for the council during the period ending June 1952.

#### AMERICAN COUNCIL ON EDUCATION COMMISSION ON THE OCCUPIED AREAS

The American Council on Education's Commission on the Occupied Areas has been concerned during the

past three years with *a*) coordinating the efforts of voluntary agencies in the field of cultural relations with the occupied countries and *b*) providing liaison between these agencies and the government departments currently undertaking international exchange programs. While the commission was set up to work only with Germany and Austria, the need for expanding its operations to include Japan and the Ryukyus soon became evident; during the past year considerable aid has been rendered the Army exchange programs in those areas. At the request of the Department of State the commission planned and supervised a series of one-week orientation courses which have been attended by the more than 1,500 German visitors brought to this country under government auspices. In December 1950 the commission called a national conference of representatives of voluntary agencies concerned with cultural exchange programs with foreign countries, which was attended by more than 600 persons representing approximately 150 organizations. The success of this conference, and a similar one held in 1949, demonstrated the increasing interest on the part of United States voluntary organizations in the international responsibilities that their programs have assumed.

The commission has had a small secretariat in Washington, which has acted as a clearinghouse for private and government agencies and which publishes a biweekly bulletin, *Occupied News Notes*, as well as reports and handbooks concerning cultural relations. Much of the commission's function has

been carried out by small subcommittees of experts which supervised specific exchange programs and served as advisory groups in the fields of their competence. The Rockefeller Foundation appropriated \$16,000 in 1950 toward the general budget of the Commission on the Occupied Areas.

#### FREE UNIVERSITY OF BERLIN

The Foundation has granted \$20,000 to the Free University of Berlin for the support of work in the social sciences and the humanities. The Free University was established as the result of protests by students and professors against the indoctrination and lack of freedom in the Soviet-controlled University of Berlin. The students requested the City Council to set up a new university where there would be no restrictions on teaching, study and speech.

With the aid of General Lucius B. Clay and with support from the United States and the City of West Berlin, the Free University of Berlin opened its gates to students in the fall of 1948. It now has 5,000 students, about 2,000 of them from the Soviet zone.

#### UNIVERSITY OF CHICAGO

##### FRANKFURT EXCHANGE PROJECT

The University of Chicago received a grant of \$3,000 from The Rockefeller Foundation in 1950 toward the costs of working out in cooperation with the University of Frankfurt, Germany, detailed plans for continuation of a program of faculty exchange between the two universities. The program, begun in



1948 with the aid of a \$120,000 grant from the Foundation, provided for a group of six to ten Chicago professors to be constantly in residence at the University of Frankfurt, each professor serving at least one semester. Subsequently, a similar group of professors from Frankfurt was to visit the University of Chicago. The exchanges already effected have been very useful in reestablishing intellectual contact between scholars in this country and scholars in Germany. The further period of exchange now contemplated is aimed at helping to build up work in the social sciences and in the humanities relevant to contemporary problems and to democratic procedures.

#### COLUMBIA UNIVERSITY

##### PROJECT FOR FOREIGN NEWSPAPER EDITORS

In 1950, through a \$25,000 grant to Columbia University, The Rockefeller Foundation helped bring a group of newspaper editors from Europe, Asia and Latin America to the United States under the sponsorship of the American Press Institute and the American Society of Newspaper Editors. The purpose of the visits was to make possible a better understanding of the nature of the press in different countries, to share experiences and common problems and, finally, to consider the desirability and feasibility of establishing an international press institute.

The foreign editors visited newspapers in many parts of the United States, observed the operations of the American press and held regional meetings with American editors in Washington, Atlanta, Houston,

San Francisco and Chicago. At the end of this four-week survey tour, the 15 foreign editors met with 19 American editors for four days at Columbia University to discuss the project of an international press institute.

As a result of this conference, it was agreed by the participating editors that the establishment of an international press institute was desirable in order to promote understanding among different peoples and to encourage the free exchange of accurate and balanced news among nations. A temporary organizing committee to work out a detailed program for an international press institute was set up at the conclusion of the meetings.

#### INSTITUTE OF INTERNATIONAL EDUCATION

##### GENERAL SUPPORT

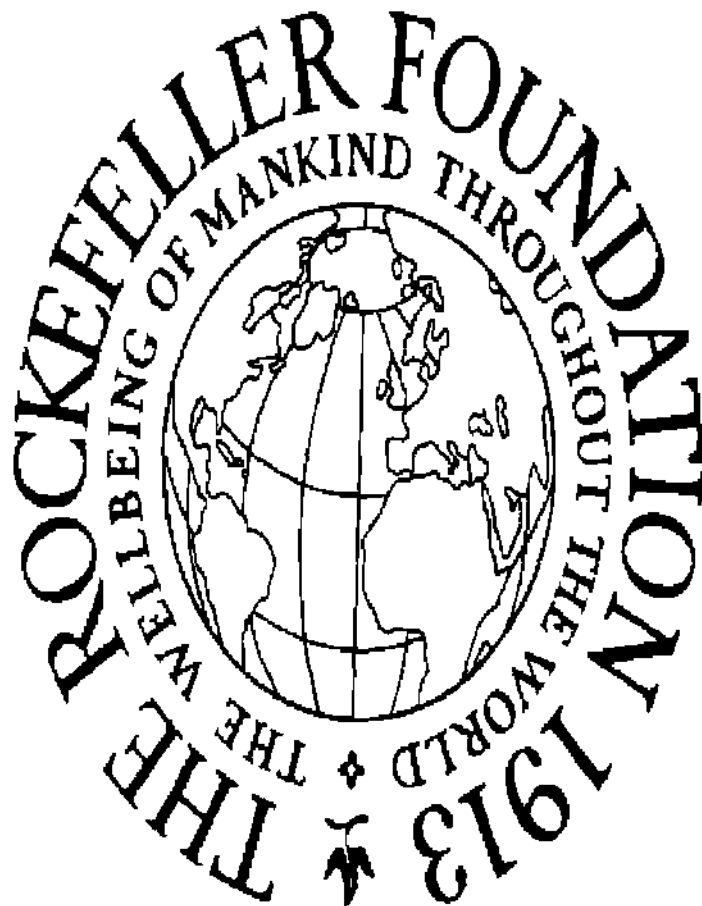
The Institute of International Education, New York, for a number of years has been arranging for numerous Americans and non-Americans to study in the United States and abroad. Its primary purpose is to contribute to world understanding through the administration of this educational exchange program. The institute has grown in proportion to the volume of exchanges. Five years ago it had a personnel of 45 and an annual budget of \$135,000. Plans for the coming academic year involve a staff of nearly 200 persons and a budget of \$677,350.

The institute is now effecting more than 3,000 placements annually, involving scholarships with a



Photograph Excised Here

A lecture at the Salzburg Seminar in American Studies, 1950



Studying the  
bulletin board at the  
Free University  
of Berlin

Photograph Excised Here



Photograph Excised Here

UNESCO fellows sponsored by the Institute of International Education receive instruction in the audio-visual equipment laboratory at Teachers College, Columbia University

total value of some \$6,000,000. The program covers 73 countries. In its official capacity as the channel for participation in the Fulbright program, the institute handles over 7,000 fellowship applications each year. Services offered include, first of all, information by way of answers to many thousands of inquiries; second, cooperation with some 200 governmental and private agencies in making scholarships and fellowships available; and third, action as a clearinghouse in connection with a network of committees on the selection and guidance of exchange students. Toward support of its program of international student exchange and the services related thereto during the period ending June 1951, The Rockefeller Foundation made a grant of \$50,000 to the Institute of International Education.

#### WORLD STUDENT SERVICE FUND

##### SALZBURG SEMINAR

The Salzburg Seminar was organized in 1947 as an experiment in international education by members of the Harvard student body and faculty in cooperation with the World Student Service Fund and the International Student Service. A program of American studies was conducted by American professors at the Castle Leopoldskron, Salzburg, Austria, in the fields of the social sciences, the humanities and the arts. It was intended primarily for graduate students and young teachers in European universities and high schools. The seminar lasted six weeks and provided

a place where young teachers and advanced students from all parts of Europe met with outstanding American scholars for a period of study and research, and where close acquaintance among American and European participants created a community of scholarship that extended far beyond the seminar period itself. The success of this experiment in 1947 led to its repetition in 1948 and 1949. In the winter of 1949-50 the program developed further to provide a series of month-long intensive training courses in selected American studies or social science studies. The following summer the usual program of combined American studies was given with an American staff of senior professors and graduate assistants. Present plans call for a continuation of eight or nine winter courses and the summer seminar.

The importance of this program of American studies has not diminished since the first seminar of the early postwar days. In a time of widely conflicting ideologies, there is greater need than ever for a widespread understanding of the American way of life. The seminars are helping answer this need, not only through the high level of scholarship and cultural leadership attained at Salzburg, but in a more informal way also, through the spirit of cooperative international living which has been fostered there. In addition, the program itself symbolizes the continuing interest of American citizens in the intellectual future of Europe. The Rockefeller Foundation, which contributed toward support of the seminar in 1948

and 1949, made an additional grant of \$50,000 to the World Student Service Fund in 1950 for the Salzburg Seminar during the year ending May 31, 1951.

#### YALE UNIVERSITY

##### CARBON 14 DATING LABORATORY

The Rockefeller Foundation in 1950 granted to Yale University the sum of \$42,500 toward the establishment and support of a carbon 14 dating laboratory under the immediate direction of Dr. Edward S. Deevey, Jr., assistant professor of biology, and under the general supervision of a distinguished group of Yale scholars in various fields. A portion of the money is being made available immediately for the initial expense of equipping the laboratory, with the balance allocated in decreasing amounts over a period of four years.

The research to be done by the laboratory is an application and extension of the recently developed method for dating specimens of organic origin containing carbon. This method depends upon the fact that cosmic radiation in our atmosphere produces carbon with mass number 14. This carbon 14 is radioactive and gradually disintegrates at a definite and characteristic rate, one-half of any specific number of carbon 14 atoms changing back to nitrogen in a period of about 5,568 years. In the atmosphere a balance is maintained whereby the number of carbon atoms which radioactively disintegrate into nitrogen is exactly replenished by the new carbon 14 atoms

which are continuously being produced by cosmic rays. However, it may happen that some of the radioactive carbon of the atmosphere is, by virtue of being built into the wood of a tree for example, protected from the replenishment process, which operates only in the free atmosphere. Such radioactive carbon proceeds to disintegrate nevertheless, and since the rate of decay is known, it is possible to determine the time interval since the carbon began to be transformed to the chemically inert state (in other words, the age of the sample) by measuring the amount of carbon 14 remaining.

Use of this radiocarbon dating technique, which is effective with samples up to about 15,000 years old, has already revolutionized ideas about the age of certain European prehistoric sites. In addition, it now appears that the last great outflow of glacial ice across the northern Great Lakes region reached its climax, not 25,000 years ago as earlier believed, but only about 11,000 years ago. The accurate dating of such geologic and historic events has an obvious and wide-spread effect on studies of the rise of human culture through the ages. Using samples even older than 15,000 years, the new Yale laboratory will investigate problems of post-pleistocene climatology, ecology and biogeography, and dynamic oceanography.

#### ROCKEFELLER FOUNDATION FELLOWSHIP DIRECTORY

The Rockefeller Foundation has in preparation a Fellowship Directory which will include individual



listings for approximately 5,000 Rockefeller Foundation fellows. The fellowship program represents a very important phase of Foundation activity, which has extended over 35 years. The directory will not only serve as a useful reference work for professional people and government personnel all over the world, but at the same time will provide a summary report on this facet of the Foundation's program.



**FELLOWSHIPS**



## FELLOWSHIPS

**I**N the belief that the advancement of knowledge depends basically on individuals, the Rockefeller Foundation fellowship program seeks on an international basis to encourage promising young talent, chiefly on the postdoctorate level, to develop their own particular capabilities. Fellowships are annually available to men and women who show special promise in the scientific and the scholarly fields allied to the broad programs of the several Foundation divisions. In 1950 these fellows were selected from 49 countries in which the Foundation has active programs. Of the 341 fellowships awarded directly by the Foundation during the year, 174 were new grants and 167 were continued from other years; 16 of the 341 fellows held second appointments. A total of 296 fellowships was given to persons abroad. Ten or more fellowships were granted to young scholars from Brazil, Chile, Denmark, Finland, France, Great Britain, India, Italy, Japan, the Netherlands, Norway, Sweden, Switzerland and the United States.

In 1950, as in previous years, the majority of fellows chose to study and do research at leading centers in the United States. From many parts of the world

medical men came here to observe and work in the principal hospitals and institutions. Students of the natural sciences journeyed to this country to study biochemistry, plant breeding, embryology and genetics. Social scientists of many nations pursued advanced work in such fields as economics, history and sociology. Fellows who had shown creative promise in the humanities in their native countries were brought to the United States to study literature, drama and philosophy. Many of the fellows interested in public health, sanitary engineering and nursing chose to use their fellowships from the International Health Division in this country.

However, a considerable number of Foundation fellows spent their periods of study and research in universities and hospitals in countries other than the United States. Several Medical Sciences fellows chose Canada and England. A number of Natural Sciences fellows, particularly those interested in problems of soils and plants, studied in Mexico. Several Social Sciences scholars went to England and the Scandinavian countries. Humanities fellows carried out area studies in Mexico, France, Thailand, Colombia, Ecuador and Peru, as well as in the United States. Eighteen of the International Health Division fellows took leave from their work in Ceylon, Chile, Denmark, Finland, Germany, Japan, Norway, Portugal, Sweden, Switzerland and the United States for further study in public health nursing and nursing education at the University of Toronto in Canada.

The several divisions of The Rockefeller Foundation had a total of \$785,000 available for fellowships in 1950. The International Health Division had at its disposal \$200,000; the Medical Sciences \$160,000; the Natural Sciences \$175,000; the Social Sciences \$125,000; and the Humanities also \$125,000. (The International Health Division also had a special fund for travel grants for public health personnel who wished to visit centers where they could observe the latest methods used in public health work.) The classification of awards made directly by The Rockefeller Foundation was as follows:

International Health Division.....	97
Medical Sciences.....	88
Natural Sciences.....	74
Social Sciences.....	34
Humanities.....	48
	—
	341

In addition to awarding a sizeable number of fellowships directly, The Rockefeller Foundation regularly makes funds available to various national research councils which have their own fellowship programs. Through this plan for supplementing Foundation sponsorship of advanced study, these councils, using funds appropriated in previous years, appointed 247 fellows in 1950. Thus the total number of fellowships supported during the year 1950 through Foundation appropriations was 588. The

fellowships awarded by intermediate agencies with Foundation funds were as follows:

National Research Council.....	50
Medical Sciences.....	26
Welch Fellows in internal medicine.....	4
Natural Sciences.....	20
Social Science Research Council.....	76
Canadian Social Science Research Council.....	16
American Council of Learned Societies.....	82
National Theatre Conference.....	12
British Medical Research Council.....	11
	—
	247

The Rockefeller Foundation in 1950 voted the sum of \$925,000 for fellowships to be administered by the Foundation itself during 1951. Out of this amount, \$300,000 was allocated to the International Health Division and \$200,000 to the Medical Sciences (the two divisions subsequently merged to form the Division of Medicine and Public Health). The Natural Sciences received \$175,000 and the Social Sciences and Humanities each \$125,000.

Grants were also made in 1950 for fellowships to be awarded by independent agencies. The National Research Council received one-year grants of \$60,000 for fellowships in the natural sciences and \$50,000 for fellowships in the medical sciences, the Canadian Social Science Research Council was granted \$20,000, available until the end of September 1951, and the British Medical Research Council received \$50,000 for use over the next two years. In addition, a portion



of the Foundation's three-year grant of \$393,750 to the American Council of Learned Societies is intended for fellowships.

A directory of Foundation-administered fellowships from the start of the fellowship program up to the present is now being prepared by the Foundation staff. The directory, which is to be published in 1951, will contain listings of former and present fellows, except where present unsettled conditions have made this impracticable. Pertinent reference data will be given on the more than 5,000 persons who have held direct appointments from the Foundation for study during the 35 years since the fellowship program was initiated.



## **REPORT OF THE TREASURER**



## TREASURER'S REPORT

**I**N the following pages is submitted a report of the financial transactions of The Rockefeller Foundation for the year ended December 31, 1950.

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## THE ROCKEFELLER FOUNDATION

## BALANCE SHEET — DECEMBER 31, 1950

## ASSETS

SECURITIES (Ledger value)..... \$152,241,857.35  
 (Quoted market value \$270,711,218.38)

## CURRENT ASSETS

## Cash on deposit:

In New York.....	\$5,094,522.92	
In Canada — Can. \$16,073.56 @ .9063.	14,567.47	5,109,090.39

Advances and deferred charges.....	\$412,087.69	
Sundry accounts receivable.....	268,999.92	681,087.61

## EQUIPMENT:

In New York.....		71,296.78
------------------	--	-----------

\$158,103,332.13

TREASURER'S REPORT

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BALANCE SHEET — DECEMBER 31, 1950

FUNDS AND OBLIGATIONS

PRINCIPAL FUND.....		\$118,735,747.26
COMMITMENTS		
Unpaid appropriations.....	\$26,385,556.48	
Unappropriated authorizations.....	1,726,099.00	28,111,655.48
	<hr/>	
FUNDS AVAILABLE FOR COMMITMENT		
Appropriations Account No. 1.....	\$4,801,980.58	
Appropriations Account No. 2.....	5,841,633.84	10,643,614.42
	<hr/>	
CURRENT LIABILITIES		
Accounts payable.....		541,018.19
EQUIPMENT FUND.....		71,296.78
		<hr/>
		\$158,103,332.13
		<hr/> <hr/>

PRINCIPAL FUND

Balance, December 31, 1949.....		\$114,884,394.18
Add		
Amount by which the proceeds of securities sold during the year exceeded the ledger value. . . .	\$3,950,884.33	
Less		
Premiums paid on purchase of securities.....	99,531.25	3,851,353.08
Balance, December 31, 1950.....		\$118,735,747.26

APPROPRIATIONS AND PAYMENTS

Unpaid appropriations, December 31, 1949.....		\$28,855,778.58
Appropriations during the year 1950 (For detail see pages 312 to 367)		
Public Health.....	\$2,326,840.00	
Medical Sciences.....	1,240,900.00	
Natural Sciences.....	2,092,515.00	
Social Sciences.....	2,122,085.00	
Humanities.....	1,491,250.00	
Miscellaneous.....	477,500.00	
Administration		
Scientific Services.....	1,003,747.00	
General.....	493,127.00	
	\$11,247,964.00	
Unused balances of appropriations allowed to lapse.....	1,165,114.95	10,082,849.05
		\$38,938,627.63



Payments on 1950 and prior years' appropriations (For detail see pages 312 to 367)		
General Education Board.....	\$1,500,000.00	
Public Health.....	2,089,601.18	
Medical Sciences.....	1,387,300.14	
Natural Sciences.....	1,963,733.26	
Social Sciences.....	2,207,053.10	
Humanities.....	1,257,521.13	
Miscellaneous.....	795,110.78	
Administration		
Scientific Services.....	1,000,921.28	
General.....	351,830.28	12,553,071.15
		<hr/>
Unpaid appropriations, December 31, 1950.....		\$26,385,556.48
		<hr/> <hr/>

UNAPPROPRIATED AUTHORIZATIONS

Unappropriated authorizations, December 31, 1949.....		\$1,487,732.00
Add		
Authorizations during 1950 for later appropriation by the Executive Committee.....		238,367.00
		<hr/>
Unappropriated authorizations, December 31, 1950.....		\$1,726,099.00
		<hr/> <hr/>

FUNDS AVAILABLE FOR COMMITMENT

APPROPRIATIONS ACCOUNT No. 1

Funds available for commitment, December 31, 1949.....		\$2,263,936.23
Add		
Income and refunds received during 1950		
Income.....	\$12,822,195.02	
Refunds.....	31,591.81	
Anonymous gift received for general purposes.....	6,000.00	
Unused balances of appropriations allowed to lapse.....	1,164,588.52	14,024,375.35
		<hr/>
		\$16,288,311.58
Deduct		
Appropriations from this account during 1950.....	\$11,247,964.00	
Authorizations during 1950.....	238,367.00	11,486,331.00
		<hr/>
Funds available for commitment, December 31, 1950.....		\$4,801,980.58

APPROPRIATIONS ACCOUNT No. 2

Funds available for commitment, December 31, 1949.....		\$5,841,107.41
Add		
Unused balances of appropriations allowed to lapse.....		526.43
		<hr/>
Funds available for commitment, December 31, 1950.....		\$5,841,633.84

**APPROPRIATIONS AND UNAPPROPRIATED AUTHORIZATIONS**

Commitments, December 31, 1949		
Unpaid appropriations.....	\$28,855,778.58	
Unappropriated authorizations.....	<u>1,487,732.00</u>	\$30,343,510.58
<b>Add</b>		
Amount appropriated and authorized during 1950		
Appropriated.....	\$11,247,964.00	
Less		
Appropriations lapsed during 1950.....	<u>1,165,114.95</u>	
	\$10,082,849.05	
Authorized.....	<u>238,367.00</u>	<u>10,321,216.05</u>
		\$40,664,726.63
<b>Deduct</b>		
Payments on 1950 and prior years' appropriations.....		<u>12,553,071.15</u>
Commitments, December 31, 1950		
Unpaid appropriations.....	\$26,385,556.48	
Unappropriated authorizations.....	<u>1,726,099.00</u>	<u>\$28,111,655.48*</u>
<b>*PROBABLE PAYMENTS IN THE FOLLOWING YEARS</b>		
1951.....	\$14,720,711.48	
1952.....	5,656,095.00	
1953.....	3,628,729.00	
1954.....	1,017,804.00	
1955.....	2,442,716.00	
1956.....	265,600.00	
1957.....	275,000.00	
1958.....	105,000.00	
	<u>\$28,111,655.48</u>	

TREASURER'S REPORT

**EQUIPMENT FUND**

	BALANCE	CHANGES DURING 1950		BALANCE
	Dec. 31, 1949	ADDITIONS	DEPRECIATION	Dec. 31, 1950
Library.....	\$13,949.00	\$1,005.10	\$5,995.10	\$8,959.00
Equipment.....	<u>58,719.67</u>	<u>8,418.12</u>	<u>4,800.01</u>	<u>62,337.78</u>
	<u>\$72,668.67</u>	<u>\$9,423.22</u>	<u>\$10,795.11</u>	<u>\$71,296.78</u>

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APPROPRIATIONS DURING 1950, UNPAID BALANCES OF PRIOR YEAR APPROPRIATIONS,  
AND PAYMENTS THEREON IN 1950

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THE ROCKEFELLER FOUNDATION

	APPROPRIATIONS		1950
	PRIOR YEARS	1950	PAYMENTS
<b>PUBLIC HEALTH</b>			
International Health Division			
Control and Investigation of Specific Diseases and Deficiencies			
Malaria			
Caribbean Area			
Tobago. 1948-1951 (IH 47031, 49023, 50108) . . . . .	\$9,956.59	\$5,400.00	\$6,188.86
Europe			
Corsica. 1948-1949 (IH 48037) . . . . .	600.79	.....	53.67
Italy			
Field laboratory for study of insecticides in Latina. 1950-1951 (IH 49007, 50108) . . . . .	4,000.00	6,680.00	4,000.00
University of Pavia. Research on cytogenetics of anopheline mos- quitoes. 1949-1951 (IH 49003, 50108) . . . . .	5,000.00	7,000.00	4,350.64
Italy-Sardinia. Anopheles eradication program. 1949-1952 (IH 48038, 50002, 50126) . . . . .	119,196.37	35,000.00	94,931.48
Far East			
China. 1949 (IH 48024) . . . . .	1,481.57	.....	1,220.46
Mysore. Studies and control demonstration. 1949-1951 (IH 49027, 50130) . . . . .	10,000.00	17,000.00	7,989.49
Pakistan. Malaria Institute and Laboratory. 1949-1950 (IH 49004) . . .	3,257.72	.....	3,138.23
Mexico			
Investigations in Veracruz. 1949-1950 (IH 48022, 49018) . . . . .	3,236.15	.....	2,523.63
Instituto de Salubridad y Enfermedades Tropicales. Insectary. 1948-49 (IH 48006) . . . . .	159.47	.....	159.47

Studies on control of insect vectors with DDT. 1948-1950 (IH 44006, 48023, 49019, 50055, 50169).....	\$13,921.91	\$12,840.00	\$11,330.74
<b>South America</b>			
Brazil. Equipment for research work. 1950-51 (IH 50108).....	.....	2,000.00	.....
Colombia. 1948 (IH 47035).....	6,387.73	.....	2,695.47
Peru. 1948-1950 (IH 47036).....	6,722.29	.....	1,475.32
Venezuela. 1948-1950 (IH 44006, 47060, 50108).....	6,609.07	2,550.00	6,191.39
<b>Mental Hygiene</b>			
<b>United States</b>			
Johns Hopkins University, Baltimore, Maryland			
School of Hygiene and Public Health. 1945-1950 (IH 45006, 45047, 46029).....	20,907.43	.....	6,473.18
<b>Nutrition</b>			
<b>Canada</b>			
University of Toronto, Ontario. 1947-50 (IH 46042).....	1,444.28	.....	Cr. 127.97
<b>Far East</b>			
Mysore. Anemia studies. 1949-1951 (IH 49009, 50108).....	10,000.00	6,000.00	5,462.19
<b>United States</b>			
Vanderbilt University, Nashville, Tennessee. School of Medicine. 1947-1952 (IH 46041, 49016).....	18,908.83	.....	12,500.00
<b>Syphilis</b>			
<b>United States</b>			
North Carolina. 1949-50 (IH 48010).....	3,570.00	.....	3,570.00
<b>Tuberculosis</b>			
<b>United States</b>			
Tennessee. 1948-1951 (IH 47012, 49014, 50168).....	20,020.06	15,000.00	18,150.54
<b>Typhus Fever</b>			
<b>United States</b>			
Florida. 1949-1950 (IH 48025, 49012).....	23,068.62	.....	17,807.55

TREASURER'S REPORT

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	APPROPRIATIONS		1950
	PRIOR YEARS	1950	PAYMENTS
<b>PUBLIC HEALTH — Continued</b>			
<b>International Health Division — Continued</b>			
<b>Control and Investigation of Specific Diseases and Deficiencies — Continued</b>			
<b>Yellow Fever</b>			
<b>Africa</b>			
Central and East Africa. 1948-1949 (IH 47041, 48016).....	\$29,218.16	\$.....	\$27,506.86
West Africa. 1947-1949 (IH 46048, 47042, 48017).....	32,656.67	.....	7,804.75
<b>South America</b>			
Brazil. 1949 (IH 48026).....	19,118.48	.....	17,547.72
<b>Colombia</b>			
Control and investigation. 1947-1948 (IH 46044, 47039).....	3,517.35	.....	1,068.34
Laboratory construction and equipment. 1945-1948 (IH 44058)....	1,244.43	.....	781.48
<b>United States</b>			
Book, <i>Yellow Fever</i> . 1950-51 (IH 50055).....	.....	10,000.00	222.00
<b>Other Studies</b>			
<b>Investigation of disease closely resembling poliomyelitis</b>			
Iceland. 1949-1950 (IH 49040, 49041).....	4,000.00	.....	24.00
<b>Rodent Ecology and Control</b>			
Johns Hopkins University, Baltimore, Maryland			
School of Hygiene and Public Health. 1949-1951 (IH 48009, 49013)	28,000.00	.....	18,958.05
<b>Taxonomic Center and Insectary</b>			
Johns Hopkins University, Baltimore, Maryland			
Department of Parasitology. 1948-1951 (IH 47044).....	3,712.30	.....	3,249.86
<b>Laboratories of the International Health Division</b>			
Maintenance. 1949-1951 (IH 48027, 49028, 50124).....	166,004.08	150,000.00	148,974.93
<b>State and Local Health Services</b>			
State Health Services			

<b>Canada</b>			
<b>New Brunswick</b>			
Division of Sanitary Engineering. 1947-48 to 1950-51 (IH 46033)...	\$3,273.95	\$.....	\$1,690.50
<b>Prince Edward Island</b>			
Provincial Laboratory. 1946-47 to 1950-51 (IH 38035).....	7,151.55	.....	4,532.70
<b>Caribbean Area</b>			
<b>Dominican Republic</b>			
General health survey. 1947-49 (IH 46020).....	2,642.28	.....	Cr. 12.01
Endemic Disease Control Service. 1949-52 (IH 48019, 49022, 50108)	18,000.00	6,000.00	11,665.20
<b>Europe</b>			
<b>Denmark</b>			
National Health Department. 1950-1952 (IH 49031).....	22,500.00	.....	10,912.50
<b>France</b>			
Survey of Soissons area. 1951 (IH 50108).....	.....	7,200.00	.....
<b>Netherlands</b>			
National Health Department. 1950-1952 (IH 49032).....	16,000.00	.....	8,000.00
<b>Norway</b>			
Statistical Division. 1947-1949 (IH 46027).....	2,142.43	.....	.....
<b>Switzerland</b>			
Institute of Water and Sewage Research. 1950 (IH 50055).....	.....	4,500.00	2,756.40
<b>Mexico</b>			
Office of Special Sanitary Service (Cooperative Central Office). 1948-1951 (IH 48028, 49017, 50108).....	6,317.32	5,250.00	4,753.96
Training Center and Demonstration Health Unit. 1948-1950 (IH 48011, 49020).....	1,661.25	.....	1,139.31
<b>South America</b>			
<b>Bolivia</b>			
Division of Rural Endemic Diseases. 1948-1951 (IH 47049).....	33,362.91	.....	13,542.37
National Institute of Bacteriology. 1950 (IH 49029).....	10,080.00	.....	.....

TREASURER'S REPORT

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	APPROPRIATIONS		1950
	PRIOR YEARS	1950	PAYMENTS
<b>PUBLIC HEALTH — Continued</b>			
<b>International Health Division — Continued</b>			
<b>State and Local Health Services — Continued</b>			
<b>State Health Services — Continued</b>			
<b>South America — Continued</b>			
<b>Chile</b>			
National Department of Sanitary Engineering, 1950-1951 (IH 49030, 50128).....	\$16,000.00	\$22,500.00	\$11,229.90
Tuberculosis survey, 1945-1950 (IH 45009).....	28,577.36	.....	2 452.83
<b>Peru</b>			
Division of Development of Program in Ministry of Health, 1945-1951 (IH 44015, 45056, 47024, 47025, 47026, 47027, 48036, 50170)	193,127.25	10,000.00	48,927.08
<b>United States</b>			
<b>New York City</b>			
Department of Health — Statistical Service, 1945-1950 (IH 44014)	5,356.43	.....	4,004.24
<b>North Carolina</b>			
Public Health Education and School Health Service, 1944-45 to 1948-49 (IH 43014).....	3,875.19	.....	Cr. 346.58
<b>Local Health Departments</b>			
<b>Africa and Asia Minor</b>			
Egypt, 1949-1951 (IH 48029, 49033, 50055, 50129).....	22,997.65	22,440.00	20,544.33
Iran, 1950-51 (IH 49034).....	20,000.00	.....	4,951.92
<b>Canada</b>			
British Columbia, 1936-52 (IH 36021, 38024).....	14,943.80	.....	.....
<b>Europe</b>			
Finland, 1950-51 through 1953 (IH 49025).....	36,000.00	.....	6,630.00
Mexico, 1944-1950 (IH 43052).....	16,990.18	.....	6,292.91
<b>South America</b>			
Chile, 1948-1951 (IH 47050, 48015, 49024).....	28,722.86	.....	7,634.04



<b>Medical Care</b>			
American Public Health Association, Washington, D. C. 1950-1953 (IH 49010).....	\$50,000.00	\$.....	\$20,000.00
Educational Trust of the American Hospital Association, Chicago, Illinois National study of the financing of hospital care. 1950-1951 (IH 49011)...	50,000.00	.....	.....
University of Manchester, England Development of an experimental health center. Period ending December 31, 1954 (IH 50101).....	.....	87,500.00	.....
<b>Public Health Education</b>			
<b>Schools and Institutes of Hygiene and Public Health</b>			
<b>Asia Minor</b>			
<b>Turkey</b>			
School of Hygiene, Ankara. 1940 (IH 39059).....	1,480.61	.....	.....
<b>Canada</b>			
<b>University of Toronto, Ontario</b>			
Additional teaching personnel. 1946-47 to 1949-50 (IH 46005).....	5,299.79	.....	2,813.72
Field training facilities. 1948-49 to 1950-51 (IH 47052).....	5,934.59	.....	4,528.64
Instruction and studies in medical care. 1949-50 to 1951-52 (IH 48021, 50108).....	13,147.20	8,500.00	7,703.56
<b>Europe</b>			
<b>Denmark</b>			
Danish Technical University, Copenhagen. 1950 (IH 49042).....	4,500.00	.....	3,492.52
<b>England</b>			
<b>London School of Hygiene and Tropical Medicine</b>			
Public health engineering. 1949-1952 (IH 49001).....	37,817.77	.....	14,229.76
Public health practice experiments. 1951-1952 (IH 50108).....	.....	10,000.00	.....
<b>Finland</b>			
Helsinki Institute of Industrial Hygiene. 1949-1950 (IH 49026)...	50,000.00	.....	41,107.50

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	APPROPRIATIONS		1950 PAYMENTS
	PRIOR YEARS	1950	
<b>PUBLIC HEALTH — Continued</b>			
<b>International Health Division — Continued</b>			
<b>Public Health Education — Continued</b>			
<b>Schools and Institutes of Hygiene and Public Health — Continued</b>			
<b>Europe — Continued</b>			
<b>Netherlands</b>			
Institute of Preventive Medicine, Leiden. 1948-1952 (IH 47064, 49035).....	\$51,971.97	\$.....	\$146.69
<b>Sweden</b>			
State Institute of Public Health, Stockholm. 1951 (IH 50108).....	.....	4,300.00	.....
<b>Miscellaneous</b>			
Medical journals and microfilms for schools and institutes of hygiene in Europe. 1951 (IH 50108).....	.....	5,000.00	.....
<b>Far East</b>			
<b>China</b>			
National Institute of Health. 1949 (IH 48031).....	1.62	.....	.....
<b>Japan</b>			
Tokyo Institute of Public Health. Teaching materials. 1950-1951 (IH 49036, 50108).....	3,500.00	3,000.00	2,687.73
<b>South America</b>			
<b>Chile</b>			
School of Public Health, Santiago. 1949-1951 (IH 48014).....	3,000.00	.....	3,000.00
<b>Colombia</b>			
National School of Hygiene, Bogotá. 1948-1951 (IH 48007).....	30,000.00	.....	.....
<b>United States</b>			
<b>Harvard University, Cambridge, Massachusetts</b>			
General budget. 1946-56 (RF 45109).....	600,000.00	.....	100,000.00

Johns Hopkins University, Baltimore, Maryland			
School of Hygiene and Public Health. For developmental purposes.			
1948-58 (RF 48037) . . . . .	\$605,000.00	\$ . . . . .	\$75,000.00
University of California, Berkeley			
Department of Public Health and Medical Administration. 1949-52			
(IH 48030, 49015, 50108) . . . . .	24,200.00	10,000.00	19,200.00
Schools of Nursing			
Canada			
University of Toronto			
Construction of new building. Period ending December 31, 1951 (RF			
45037) . . . . .	300,000.00	. . . . .	. . . . .
Europe			
Finland			
Helsinki College of Nursing. 1948-1951 (IH 47062) . . . . .			
	20,759.00	. . . . .	6,094.00
Switzerland			
Le Bon Secours School of Nursing, Geneva. 1948-1952 (IH 47033) . . .			
	28,041.29	. . . . .	17,549.36
Far East			
Ceylon			
National School of Nursing, Colombo. 1948-49 to 1952-53 (IH 48005)			
	18,766.31	. . . . .	8,110.79
South America			
Colombia			
National Superior School of Nursing, Bogotá			
General. 1943-1951 (IH 42061) . . . . .			
	4,526.19	. . . . .	4,526.19
Teaching unit for psychiatric nursing. 1950-1951 (IH 48013) . . . . .			
	9,000.00	. . . . .	. . . . .
Ecuador			
School of Nursing, Quito. 1943-1951 (IH 47023) . . . . .			
	7,739.46	. . . . .	729.49
Uruguay			
University Nursing School, Montevideo. 1948-1951 (IH 47054) . . . . .			
	22,787.65	. . . . .	13.00
Venezuela			
National School of Nursing, Caracas. 1947-1950 (IH 46022) . . . . .			
	18,097.55	. . . . .	4,119.31

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	APPROPRIATIONS		1950
	PRIOR YEARS	1950	PAYMENTS
<b>PUBLIC HEALTH — Continued</b>			
<b>International Health Division — Continued</b>			
<b>Public Health Education — Continued</b>			
Fellowships, Travel of Government Health Officials and Teachers of Public Health, and Training of Health Workers. 1947-1951 (IH 46055, 47055, 48032, 49037, 50152).....	\$382,523.22	\$300,000.00	\$210,716.45
Study to determine type of worker required for basic health and social welfare needs within the family. 1950-1951 (IH 50001).....	16,700.00	.....	.....
<b>Other Training</b>			
<b>Caribbean Area</b>			
British West Indies Training Station, Jamaica. 1945-46 to 1950-51 (IH 48012, 49021).....	17,839.06	.....	7,745.57
<b>Europe</b>			
<b>Italy</b>			
University of Naples. School of Public Health Engineering. 1950 (IH 49008).....	3,500.00	.....	3,500.00
University of Rome Engineering School. 1948-1951 (IH 48008).....	8,000.00	.....	3,541.49
<b>Yugoslavia</b>			
Development of School of Public Health Engineering at Institute of Hygiene and School of Engineering. 1951-1953 (IH 50127).....	.....	25,000.00	.....
<b>Mexico</b>			
Training of health personnel in the United States. 1950-51 (IH 50108) ..	.....	1,200.00	.....
<b>South America</b>			
<b>Brazil</b>			
Araraquara Health Training Center. 1948-1951 (IH 47061, 50108) ..	8,844.35	6,000.00	5,511.20

Field Service

Field Staff

Salaries, Travel and Other Expenses

1948 (IH 47056).....	\$1,938.52	\$.....	\$1,578.56
1949 (IH 48033, 49002).....	112,199.68	.....	58,659.72
1950 (IH 49038).....	849,750.00	.....	703,109.15
1951 (IH 50122).....	.....	781,000.00	.....

Field Offices

Africa and Asia Minor

Egypt (Cairo)

1949 (IH 48034).....	3,927.87	.....	2,673.23
1950 (IH 49039).....	10,000.00	.....	7,108.89
1951 (IH 50123).....	.....	10,000.00	.....

Iran (Tehran)

1949 (IH 48034).....	1,789.21	.....	780.42
1950 (IH 49039).....	7,920.00	.....	4,497.04
1951 (IH 50123).....	.....	8,000.00	.....

Canada (Toronto)

1949 (IH 48034).....	1,881.76	.....	619.56
1950 (IH 49039).....	3,220.00	.....	819.45
1951 (IH 50123).....	.....	3,500.00	.....

Caribbean Area

Central Office (Miami)

1949 (IH 48034).....	1,798.32	.....	964.88
1950 (IH 49039).....	6,400.00	.....	4,170.40
1951 (IH 50123).....	.....	5,400.00	.....

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	APPROPRIATIONS		1950 PAYMENTS
	PRIOR YEARS	1950	
<b>PUBLIC HEALTH — Continued</b>			
<b>International Health Division — Continued</b>			
<b>Field Service — Continued</b>			
<b>Field Offices — Continued</b>			
<b>Caribbean Area — Continued</b>			
<b>Dominican Republic (Ciudad Trujillo)</b>			
1949 (IH 48034).....	\$1,546.17	\$.....	\$1,546.17
1950 (IH 49039).....	3,220.00	.....	2,436.06
1951 (IH 50123).....	.....	3,690.00	.....
<b>Europe</b>			
<b>England (London)</b>			
1950 (IH 49039).....	2,500.00	.....	754.99
1951 (IH 50123).....	.....	2,500.00	.....
<b>Italy (Rome)</b>			
1951 (IH 50123).....	.....	6,000.00	.....
<b>Far East</b>			
<b>Central Office (Bangalore)</b>			
1949 (IH 48034).....	7,695.93	.....	5,107.83
1950 (IH 49039).....	10,000.00	.....	6,773.00
1951 (IH 50123).....	.....	8,000.00	.....
<b>Japan (Tokyo)</b>			
1949 (IH 48034).....	407.52	.....	47.64
1950 (IH 49039).....	1,000.00	.....	80.44
1951 (IH 50123).....	.....	2,000.00	.....
<b>South America</b>			
<b>Río de La Plata and Andean Region</b>			
<b>Argentina (Buenos Aires)</b>			
1949 (IH 48034).....	1,887.25	.....	50.00

Bolivia (Cochabamba, La Paz)			
1949 (IH 48034)	\$2,176.44	\$	\$1,083.43
1950 (IH 49039)	4,500.00		3,198.75
1951 (IH 50123)		4,000.00	
Chile (Santiago)			
1949 (IH 48034)	1,184.96		632.76
1950 (IH 49039)	5,625.00		3,190.24
1951 (IH 50123)		5,500.00	
Peru (Lima)			
1949 (IH 48034)	1,860.52		351.98
1950 (IH 49039)	3,500.00		1,932.34
1951 (IH 50123)		3,360.00	
Brazil (Rio de Janeiro)			
1949 (IH 48034)	13,509.52		13,509.52
1950 (IH 49039)	9,595.00		7,152.96
1951 (IH 50123)		9,000.00	
Colombia (Bogotá)			
1948 (IH 47057)	2,749.63		638.51
1949 (IH 48034)	4,500.00		1,559.46
1950 (IH 49039)	3,890.00		320.85
1951 (IH 50123)		4,050.00	
Miscellaneous			
1951 (IH 50123)		2,000.00	
Miscellaneous			
Director's Fund for Miscellaneous Expenses (IH 48004)	4,881.94		1,461.57
Director's Fund for Supplementing Approved Projects (IH 44006)	2,004.43		
Exchange Fund (IH 33077)	21,365.22		
Grants in Aid, 1950-1951 (IH 50005, 50108, 50157)		153,060.00	

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	APPROPRIATIONS		1950 PAYMENTS
	PRIOR YEARS	1950	
<b>PUBLIC HEALTH — Continued</b>			
<i>International Health Division — Continued</i>			
<i>Miscellaneous — Continued</i>			
Pan American Sanitary Bureau, Washington, D. C.			
Toward headquarters' purchase fund. 1951 (IH 50131).....	\$.....	\$400,000.00	\$.....
Population Studies. 1949-1950 (IH 48039).....	2,932.58	.....	125.45
Revolving Fund to provide working capital. (RF 29093).....	200,000.00	.....	.....
Rockefeller Institute for Medical Research, New York			
General expenses of administration and operation. 1951 (RF 50023, 50125).....	.....	100,000.00	50,000.00
Undesignated portion of appropriation to the International Health Division for work during 1950 (RF 49135).....	295,550.00	.....	.....
University of Ceylon			
Department of Physiology and Pharmacology of the Medical College.			
Field studies in social medicine. 1950-1951 (IH 50055, 50108).....	.....	3,960.00	.....
Department of Sociology. Sociological studies. 1950-1951 (IH 50055, 50108).....	.....	3,960.00	.....
Total — International Health Division.....	<u>\$5,097,527.86</u>	<u>\$2,326,840.00</u>	<u>\$2,060,526.15</u>
<b>The Rockefeller Foundation Health Commission</b>			
<i>State and Local Health Services</i>			
<i>State Health Services</i>			
<i>Europe</i>			
Ministry of Social Welfare, Norway			
Salary increases in Health Department. 1946-51 (HC 46014).....	10,000.00	.....	2,500.00



Public Health Education

Schools and Institutes of Hygiene and Public Health

Europe

Institute of Hygiene, Zagreb, Yugoslavia

Equipment and maintenance. 1946-51 (HC 46016) .....	\$8,834.32	\$.....	\$8,587.55
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Institute and School of Hygiene, Warsaw, Poland

Equipment and supplies. 1946-1948 (HC 46025) .....	5,162.50	.....	15.53
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London School of Hygiene and Tropical Medicine, England

Purchase of laboratory centrifuges. 1947-48 (HC 47017) .....	2,000.00	.....	.....
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Rehabilitation of teaching and public health personnel. 1945-51 (HC 45002) .....	38,212.15	.....	10,590.61
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Microfilm readers for institutes of hygiene in Europe. 1946-49 (HC 46024) .....

124.69	.....	.....
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Far East

Institute of Public Health, Tokyo, Japan

Books, periodicals and teaching aids. 1948-1949 (C-11) .....	409.89	.....	186.81
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University of the Philippines, Manila

Equipment and supplies. 1947-1948 (HC 47006) .....	6,974.56	.....	.....
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Schools of Nursing

Europe

Ministry of Health, Norway

Postgraduate course of study in public health and development of practice fields. 1946-51 (HC 46015) .....	9,000.00	.....	4,500.00
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Fellowships, Travel and Training Grants. 1945-1948 (HC 47030) .....

4,000.00	.....	709.81
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	APPROPRIATIONS		1950
	PRIOR YEARS	1950	PAYMENTS
<b>PUBLIC HEALTH — Continued</b>			
<i>The Rockefeller Foundation Health Commission — Continued</i>			
<i>Public Health Education — Continued</i>			
<i>Miscellaneous</i>			
Journals, periodicals and books for public health institutions and schools in need of assistance as a result of the war, 1945-1950 (HC 45012, C-11) . . . . .	\$2,942.43	\$ . . . . .	\$1,984.72
Fund for Commitment by Director and Comptroller (C-11) . . . . .	2,298.46	. . . . .	. . . . .
<b>Total — The Rockefeller Foundation Health Commission . . . . .</b>	<b>\$89,959.00</b>	<b>\$ . . . . .</b>	<b>\$29,075.03</b>
<b>TOTAL — PUBLIC HEALTH . . . . .</b>	<b>\$5,187,486.86</b>	<b>\$2,326,840.00</b>	<b>\$2,089,601.18</b>
<b>MEDICAL SCIENCES</b>			
<i>Psychiatry, Neurology and Allied Subjects</i>			
<i>American Psychiatric Association, New York</i>			
Work of Committee on Psychiatric Nursing (RF 47107) . . . . .	\$5,000.00	\$ . . . . .	\$3,750.00
<i>Burden Neurological Institute, Bristol, England</i>			
Research in neurophysiology and neurosurgery (RF 47088) . . . . .	26,960.14	. . . . .	7,004.68
<i>Cardiff City Mental Hospital, Wales</i>			
Research in normal and pathological biochemistry of brain tissue (RF 48014) . . . . .	22,010.73	. . . . .	5,031.06
<i>Child Research Council of Denver, Colorado</i>			
Studies in child growth and development (RF 48057, 49116, 50068) . . . .	112,500.00	25,000.00	25,000.00
<i>Columbia University, New York</i>			
Research in brain chemistry (RF 47008, 50010) . . . . .	3,250.00	16,000.00	11,250.00

Dalhousie University, Halifax, Nova Scotia			
Development of teaching in psychiatry (RF 47069) . . . . .	\$4,768.78	\$ . . . . .	\$213.97
Duke University, Durham, North Carolina			
Work in parapsychology (RF 50052) . . . . .		30,000.00	5,000.00
Harvard University, Cambridge, Massachusetts			
Investigation of the dynamics of personality development (RF 48016) . . .	45,000.00	. . . . .	18,000.00
Research in epilepsy at Harvard Medical School and Boston City Hos- pital (RF 42109, 49035) . . . . .	30,901.90	. . . . .	7,500.00
Teaching and research in psychiatry at the Harvard Medical School (RF 48055) . . . . .	56,160.00	. . . . .	18,413.38
Study of adult development by Department of Hygiene (RF 50097) . . . . .		15,000.00	3,750.00
Institute of Andean Biology, University of San Marcos, Lima, Peru			
Equipment for a high altitude laboratory at Morococha (RF 49061) . . . . .	20,845.73	. . . . .	18,046.01
Institute of the Pennsylvania Hospital, Philadelphia			
Research in neurophysiology (RF 48044) . . . . .	2,354.97	. . . . .	1,000.00
Karolinska Institute, Stockholm, Sweden			
Research in neurophysiology (RF 49120) . . . . .	16,000.00	. . . . .	7,600.00
Massachusetts Institute of Technology, Cambridge			
Expenses of a project in mathematical biology to be conducted jointly with the National Institute of Cardiology, Mexico, D.F. (RF 47009) . . .	5,502.43	. . . . .	1,375.00
McGill University, Montreal, Canada			
Maintenance of Department of Psychiatry (RF 43046, 49033) . . . . .	114,341.27	. . . . .	26,666.00
Research in brain chemistry (RF 46069) . . . . .	18,271.58	. . . . .	9,063.00
Menninger Foundation, Topeka, Kansas			
Establishment of a school for psychiatric aides in conjunction with the Topeka State Hospital (RF 49093) . . . . .	57,625.00	. . . . .	22,450.44
National Institute of Cardiology, Mexico, D.F.			
Research in neurophysiology and pharmacology (RF 49036) . . . . .	30,067.66	. . . . .	7,025.98

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	APPROPRIATIONS		1950
	PRIOR YEARS	1950	PAYMENTS
<b>MEDICAL SCIENCES — Continued</b>			
<i>Psychiatry, Neurology and Allied Subjects — Continued</i>			
<i>New York University, New York</i>			
Interdepartmental project on the rehabilitation of neurological patients (RF 49075) .....	\$27,900.00	\$.....	\$9,300.00
<i>Princeton University, New Jersey</i>			
Research on the psychology of perception (RF 48040).....	22,500.00	.....	22,500.00
Work of the Department of Psychology (RF 50007).....	.....	25,000.00	25,000.00
<i>Roscoe B. Jackson Memorial Laboratory, Bar Harbor, Maine</i>			
Studies of genetic factors of intelligence and emotional variation in mammals (RF 50005).....	.....	150,000.00	50,000.00
<i>Stanford University, Palo Alto, California</i>			
Follow-up study on a group of gifted individuals (RF 50025).....	.....	11,000.00	5,500.00
<i>Tavistock Institute of Human Relations, London, England</i>			
Research and teaching in the field of psychiatry (RF 49003).....	60,717.18	.....	28,018.76
<i>Tufts College Medical School, Boston, Massachusetts</i>			
Research in brain chemistry (RF 44098).....	7,485.03	.....	7,000.00
<i>University College, University of London, England</i>			
Research in physiology (RF 45085).....	23,848.90	.....	10,314.04
<i>University of Aarhus, Denmark</i>			
Development of research and teaching in psychiatry (RF 49004).....	18,937.60	.....	3,061.59
<i>University of Brussels, Belgium</i>			
Research in neurophysiology (RF 46015, 50088).....	5,619.38	25,000.00	3,148.62
<i>University of California, Berkeley</i>			
Toward the establishment of an Institute for Personality Assessment and Research (RF 49048).....	83,385.00	.....	36,892.36

<b>University of Cambridge, England</b>			
Research in neurophysiology (RF 46014, 50024) . . . . .	\$15,865 87	\$14,250 00	\$10,170.81
Psychological Laboratory. Training and research (RF 46084) . . . . .	18,339 68	.....	6,164.12
<b>University of Chicago, Illinois</b>			
Teaching and research in psychiatry (RF 47050) . . . . .	62,500.00	.. .....	42,500.00
Investigation of nondirective psychotherapy (RF 49090) . . . . .	32,500 00	.. .....	32,499.87
<b>University of Cincinnati, Ohio</b>			
Teaching and research in psychiatry (RF 47121) . . . . .	122,500.00	. .....	.. .
<b>University of Copenhagen, Denmark</b>			
Toward establishment of a Child Guidance Clinic (RF 50009) . . . . .	. .	63,000.00	18,411.28
<b>University of Edinburgh, Scotland</b>			
Research in psychiatry, neurology and neurosurgery (RF 47007) . . . . .	7,758 69	... .	2,801.88
<b>University of Heidelberg, Germany</b>			
Toward establishment of an Institute of Psychosomatic Medicine (RF 50001) . . . . .	. . . . .	56,000.00	16,554.06
<b>University of Illinois, Urbana</b>			
Research in the biochemical aspects of schizophrenia (RF 45001) . . . . .	27,243.96	.....	20,686 81
Research in epilepsy (RF 47106) . . . . .	9,954.84	... .....	9,954.84
<b>University of Liège, Belgium</b>			
Toward development of the Laboratory of Neuroanatomy (RF 50143) . . . . .	.....	20,800.00	.....
<b>University of Oregon, Eugene</b>			
Work in neurophysiology (RF 48071) . . . . .	6,000.00	.....	.....
<b>University of Oregon Medical School, Portland</b>			
Clinical and physiological investigation of pain (RF 49051) . . . . .	11,400.00	.....	6,082.48
<b>University of Oxford, England</b>			
Neurohistological research in the Department of Human Anatomy (RF 48058) . . . . .	62,183.05	.....	15,811.17

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	APPROPRIATIONS		1950 PAYMENTS
	PRIOR YEARS	1950	
<b>MEDICAL SCIENCES — Continued</b>			
<b>Psychiatry, Neurology and Allied Subjects — Continued</b>			
<b>University of Toronto, Canada</b>			
Development of a laboratory of experimental clinical neurology (RF 49049).....	\$28,373.84	\$.....	\$ 7,250.40
<b>University of Zurich, Switzerland</b>			
Psychiatric research (RF 50144).....	.....	16,800.00	.....
<b>Washington University, St. Louis, Missouri. School of Medicine</b>			
Support of Department of Neuropsychiatry (RF 47041).....	65,112.00	.....	44,862.09
<b>Western Reserve University, Cleveland, Ohio</b>			
Research in psychiatry, especially in biochemistry related to mental disease (RF 48056).....	49,000.00	.....	14,000.00
<b>Wilhelmina Hospital, Amsterdam, Netherlands</b>			
Research in psychosomatic medicine (RF 47105).....	6,631.08	.....	2,827.08
<b>Yerkes Laboratories of Primate Biology, Orange Park, Florida</b>			
Building and general budget (RF 47019, 50073).....	102,500.00	90,000.00	35,000.00
<b>Endocrinology</b>			
<b>Collège de France, Paris</b>			
Equipment for an experimental monkey station in Algeria (RF 49001)...	16,751.69	.....	3,051.86
<b>Institute of Biology and Experimental Medicine, Buenos Aires, Argentina</b>			
Support of research (RF 47067).....	4,495.76	.....	410.59
<b>Massachusetts General Hospital, Boston</b>			
Research in endocrinology and metabolism (RF 49107).....	12,000.00	.....	4,000.00
<b>McGill University, Montreal, Canada</b>			
Research in endocrinology (RF 46070).....	6,430.40	.....	2,718.90

National Research Council, Washington, D. C. Committee for Research in Problems of Sex (RF 44002, 46051, 46134, 49074).....	\$212,902.94	\$.....	\$78,710.74
New England Medical Center, Boston, Massachusetts Research in endocrinology (RF 50076).....	.....	30,000.00	.....
University of Lund, Sweden Research in endocrinology (RF 50165).....	.....	11,200.00	.....
<b>Medical Education</b>			
Association of American Medical Colleges, New York Medical Film Institute. Production of a critical catalogue of medical motion picture films (RF 50067).....	.....	21,350.00	10,675.00
Bingham Associates Fund of Maine, Boston, Massachusetts Developing a program of postgraduate medical education in certain rural areas and towns in Massachusetts (RF 45073).....	50,797.51	.....	25,000.00
Harvard University, Cambridge, Massachusetts Development of legal medicine (RF 44001).....	37,461.28	.....	6,216.96
Development of the Department of Dermatology of Harvard Medical School (RF 48039).....	90,023.14	.....	7,474.00
Japan — Purchase of medical books and periodicals to be distributed to various medical schools in Japan upon recommendation of the Japanese Council on Medical Education (RF 49076).....	726.86	.....	726.86
Johns Hopkins University, Baltimore, Maryland Institute of the History of Medicine (RF 49050, 50035) .....	75,000.00	30,000.00	30,000.00
New England Center Hospital, Boston, Massachusetts Program of postgraduate medical education in certain rural areas and towns in Massachusetts (RF 50100).....	.....	100,000.00	.....
Postwar appointments for medical graduates from armed services (RF 44135).....	93,298.80	.....	4,897.06

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	APPROPRIATIONS		1950
	PRIOR YEARS	1950	PAYMENTS
<b>MEDICAL SCIENCES — <i>Continued</i></b>			
<b>Medical Education — <i>Continued</i></b>			
Royal Society of Medicine, London, England			
Expenses of a Central Medical Library Bureau (RF 45115) . . . . .	\$40,977.79	\$ . . . . .	\$34.89
University College, University of London, England			
Support of a study of medical student selection (RF 48008) . . . . .	13,404.64	. . . . .	1,400.94
University of Brussels, Belgium			
Teaching and research in preventive medicine (RF 47122) . . . . .	17,109.85	. . . . .	3,993.75
University of San Marcos, Lima, Peru. Faculty of Medicine			
Equipment and supplies for Department of Pathology (RF 46087) . . . . .	365.50	. . . . .	. . . . .
Washington University, St. Louis, Missouri. School of Medicine			
Teaching of preventive medicine (RF 47042) . . . . .	9,368.75	. . . . .	6,946.90
<b>Human Heredity</b>			
Columbia University, New York			
Investigation of genetic factors in the incidence of nervous and mental diseases peculiar to old age (RF 45002, 47068) . . . . .	16,189.97	. . . . .	15,000.00
Georgia State College for Women, Milledgeville			
Research in medical genetics (RF 47055) . . . . .	5,500.00	. . . . .	3,500.00
University of Copenhagen, Denmark			
Work in the genetics of mental defectiveness (RF 48112) . . . . .	17,102.40	. . . . .	4,187.49
University of Geneva, Switzerland			
Support of an Institute of Human Genetics (RF 50164) . . . . .	. . . . .	12,000.00	. . . . .
University of London, England. Galton Laboratory			
Research in problems of human heredity (RF 46085, 50085) . . . . .	6,748.73	28,500.00	3,094.06



General

Columbia University, New York			
Study of the effects of fetal and neonatal injury on growth and functional development (RF 47051) . . . . .	\$39,363.29	\$ . . . . .	\$22,499.14
Medical Research Council, London, England			
Purchase of scientific equipment (RF 47066) . . . . .	4,187.70	. . . . .	3,609.06
National Health Council, Inc., New York			
Program in the coordination of voluntary health agencies (RF 48009) . . . .	118,750.00	. . . . .	65,980.59
Fellowships and Grants in Aid			
Fellowships			
Administered by The Rockefeller Foundation (RF 46135, 47134, 48101, 48138, 49144, 50153) . . . . .			
	317,677.83	200,000.00	153,157.26
Medical Research Council, London, England (RF 45042, 46029, 48013, 50016) . . . . .			
	22,239.90	50,000.00	23,751.66
National Research Council, Washington, D. C.			
Medical sciences (RF 46133, 49121, 50084) . . . . .			
	85,923.59	50,000.00	80,243.26
Welch fellowships in internal medicine (RF 41028) . . . . .			
	70,133.86	. . . . .	18,675.85
Grants in Aid			
Administered by The Rockefeller Foundation (RF 45123, 46120, 47089, 47138, 48142, 49148, 50090, 50158) . . . . .			
	281,949.42	150,000.00	120,921.44
Special Emergency Grant-in-Aid Fund			
Scientific equipment for medical science laboratories of universities and technical schools in the Netherlands (RF 45089) . . . . .			
	4,143.43	. . . . .	1,970.10
<b>TOTAL — MEDICAL SCIENCES . . . . .</b>			
	<u>\$3,120,841.32</u>	<u>\$1,240,900.00</u>	<u>\$1,387,300.14</u>

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	APPROPRIATIONS		1950
	PRIOR YEARS	1950	PAYMENTS
<b>NATURAL SCIENCES</b>			
<b>Experimental Biology</b>			
Amherst College, Massachusetts			
Research in biology (RF 46095).....	\$10,500.00	\$.....	\$7,000.00
Auckland University College, University of New Zealand			
Equipment for investigations on the plant products of New Zealand (RF 49124).....	12,797.94	.....	10,300.88
California Institute of Technology, Pasadena			
Support of combined research programs in biology and chemistry (RF 48030).....	550,000.00	.....	144,146.36
Carlsberg Foundation, Copenhagen, Denmark			
Research in biochemistry (RF 46107).....	9,108.33	.....	5,565.54
Centre national de la Recherche scientifique, Paris, France			
Scientific equipment for the Institute of Genetics at Gif (RF 50034).....	.....	54,000.00	.....
Columbia University, New York			
Research on enzymes in the Department of Medicine, College of Physicians and Surgeons (RF 48043, 50043).....	3,250.00	12,000.00	7,760.51
Research on vitamins and related substances in relation to plant growth (RF 45086).....	4,000.00	.....	4,000.00
Research in immunochemistry (RF 48066).....	20,000.00	.....	10,000.00
Research in genetics and experimental zoology (RF 48076).....	44,000.00	.....	14,392.39
Research in the Department of Biochemistry, College of Physicians and Surgeons (RF 50078).....	.....	14,400.00	7,200.00
Connecticut Agricultural Experiment Station, New Haven			
Research in genetics (RF 49018).....	10,816.46	.....	3,600.00

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Cornell University, Ithaca, New York			
Research in enzyme chemistry (RF 49082).....	\$26,750.00	\$.....	\$5,694.17
To assist in establishing an electron microscope laboratory (RF 49069)...	26,250.00	.....	7,500.00
Duke University, Durham, North Carolina			
Research on physical biochemistry of proteins (RF 46096, 49070).....	107,500.00	.....	2,500.00
Eidgenössische Technische Hochschule, Zurich, Switzerland			
Laboratory of Organic Chemistry. Research on constitution and synthesis of physiologically active compounds (RF 46099).....	60,234.23	.....	19,737.60
Genetics Society of America, Upton, New York			
Toward expenses of its Golden Jubilee Meeting (RF 50042).....	.....	15,000.00	12,619.35
Harvard University, Cambridge, Massachusetts			
Basic studies in chemotherapy (RF 48020).....	28,815.70	.....	11,714.94
Research in the Medical School on problems of tissue structure (RF 46019)	17,000.00	.....	9,945.24
Research in enzyme chemistry (RF 50020).....	.....	18,000.00	4,500.00
Haskins Laboratories, New York			
Research in protozoological chemistry (RF 50110).....	.....	12,000.00	4,000.00
Indiana University, Bloomington			
Research in cytogenetics (RF 45036).....	13,500.00	.....	13,500.00
Iowa State College, Ames			
Research in physiological genetics (RF 46032, 49028).....	18,824.92	.....	5,393.09
Johns Hopkins University, Baltimore, Maryland			
Biochemical research (RF 50105).....	.....	20,000.00	.....
Karolinska Institute, Stockholm, Sweden			
Anatomical Institute. Research equipment (RF 50113).....	.....	5,000.00	3,600.00
Institute of Chemistry. Research in biochemistry (RF 47100).....	26,700.06	.....	1,985.42
Institute for Cell Research. Research (RF 49030).....	15,000.00	.....	5,000.00
Research in the Department of Biochemistry of the Medical Nobel Institute (RF 50017).....	.....	45,000.00	10,007.14

	APPROPRIATIONS		1950 PAYMENTS
	PRIOR YEARS	1950	
<b>NATURAL SCIENCES — Continued</b>			
<b>Experimental Biology — Continued</b>			
Long Island Biological Association, Cold Spring Harbor, New York			
Modernizing physical plant of biological laboratory (RF 50064).....	\$.....	\$45,000.00	\$23,000.00
Marine Biological Laboratory, Woods Hole, Massachusetts			
Modernization of laboratory building and general support (RF 48131)...	75,000.00	.....	20,000.00
Massachusetts General Hospital, Boston			
Research in enzyme chemistry (RF 48135, 50039).....	8,500.00	55,000.00	29,200.00
Massachusetts Institute of Technology, Cambridge			
Joint project in mathematical biology with the National Institute of Cardiology, Mexico, D.F. (RF 47009).....	5,502.44	.....	1,375.00
Research in biology (RF 47039).....	125,000.00	.....	25,000.00
Research in the physical chemistry of protein solutions (RF 45107).....	42,511.10	.....	5,786.90
Montreal General Hospital, Quebec, Canada			
Biochemical research (RF 50046).....	.....	30,000.00	5,534.68
National Research Council, Washington, D. C.			
United States National Committee of the International Union of Crystal- lography. Publication program (RF 50166).....	.....	10,000.00	.....
Northwestern University, Evanston, Illinois			
Research in the physical chemistry of proteins (RF 49058).....	22,500.00	.....	9,000.00
Polytechnic Institute of Brooklyn, New York			
Research on protein structure (RF 50069).....	.....	136,115.00	33,470.00
Princeton University, New Jersey			
Research in genetics (RF 47076).....	181.25	.....	.....
Research in organic chemistry (RF 40058).....	12,866.72	.....	8,000.00

<b>Purdue University, Lafayette, Indiana</b>			
Research in genetics (RF 49104).....	\$12,500.00	\$.....	\$5,000.00
<b>Roscoe B. Jackson Memorial Laboratory, Bar Harbor, Maine</b>			
Research in genetics (RF 48108).....	3,000.00	.....	3,000.00
<b>Smith College, Northampton, Massachusetts</b>			
Work in genetics (RF 49105, 50044).....	4,000.00	8,000.00	8,000.00
<b>Stanford University, Palo Alto, California</b>			
Research in biochemistry of nucleic acids (RF 48109).....	12,000.00	.....	7,004.95
Research in biochemical genetics (RF 49057).....	22,025.00	.....	6,725.00
Research on protein chemistry (RF 48064).....	7,210.32	.....	5,115.42
Research in microbiology (RF 48065).....	13,200.00	.....	10,976.16
<b>University of Amsterdam, Netherlands</b>			
Research on tissues in the Laboratory of Histology (RF 50095).....	.....	4,500.00	.....
<b>University of Bern, Switzerland</b>			
Theodor Kocher Institute. Equipment and assistance to foreign guests (RF 50074).....	.....	25,000.00	5,000.00
Institute of Botany. Equipment (RF 50080).....	.....	10,000.00	5,000.00
<b>University of Brazil, Rio de Janeiro</b>			
Research at the Institute of Biophysics (RF 49020).....	10,498.70	.....	3,140.04
<b>University of Brussels, Belgium</b>			
Equipment for research in biochemical embryology (RF 50096).....	.....	15,000.00	.....
<b>University of California, Berkeley</b>			
Construction and installation of cyclotron (RF 42001).....	37,237.04	.....	.....
Basic equipment for research in biochemistry with special emphasis on virus studies (RF 48132).....	35,000.00	.....	.....
Research in biochemistry (RF 49059).....	12,500.00	.....	12,486.27
Research in the comparative biochemistry of marine organisms (RF 49009).....	24,500.00	.....	10,456.01

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	APPROPRIATIONS		1950
	PRIOR YEARS	1950	PAYMENTS
<i>NATURAL SCIENCES — Continued</i>			
<i>Experimental Biology — Continued</i>			
University of Cambridge, England			
Cavendish Laboratory. X-ray crystallography research equipment (RF 50114).....	\$.....	\$5,000.00	\$.....
Moltano Institute of Biology and Parasitology. Research in cell physiology (RF 47101).....	22,862.28	.....	7,989.42
University Chemical Laboratory			
Purchase of equipment in the United States (RF 49041).....	14,374.81	.....	12,392.89
Research equipment and supplies (RF 50112).....	.....	7,000.00	463.60
University of Chicago, Illinois			
Research in molecular spectra (RF 41101).....	1,274.51	.....	1,274.51
Research in application of spectroscopic methods to biological problems (RF 40021).....	13,441.26	.....	3,085.63
Research in animal ecology (RF 50026).....	.....	9,000.00	3,000.00
Research in experimental ecology (RF 50094).....	.....	8,500.00	1,565.00
University of Copenhagen, Denmark			
Research on the biological uses of isotopes (RF 49094).....	12,750.00	.....	8,424.25
Research in biochemistry, physiology, embryology and genetics (RF 49029).....	25,396.20	.....	11,694.30
Expenses of two small working conferences of European scientists interested in problems of microbial genetics (RF 50115).....	.....	5,000.00	.....
University of Edinburgh, Scotland			
Department of Animal Genetics. Establishment of several studentships for young scientists (RF 50116).....	.....	5,700.00	.....

Department of Chemistry. Equipment (RF 50106) . . . . .	\$ . . . . .	\$17,000.00	\$ . . . . .
University of Geneva, Switzerland			
Research in organic chemistry (RF 50081) . . . . .	. . . . .	15,000.00	2,295.00
University of Glasgow, Scotland			
Equipment for research in the natural sciences (RF 49125) . . . . .	7,000.00	. . . . .	. . . . .
University of Graz, Austria			
Research in zoology (RF 49095) . . . . .	12,500.00	. . . . .	2,500.00
University of Illinois, Urbana			
Research in insect biochemistry (RF 50093) . . . . .	. . . . .	12,000.00	3,000.00
University of Leeds, England			
Research on the analysis of biological tissues by physical techniques (RF 47081) . . . . .	8,046.74	. . . . .	8,046.74
University of London, England			
Birkbeck College. Equipment for X-ray analysis (RF 48078) . . . . .	12,501.90	. . . . .	. . . . .
King's College			
Research in molecular biology (RF 47082) . . . . .	5,368.95	. . . . .	4,780.76
Research in biophysics (RF 50065) . . . . .	. . . . .	37,000.00	3,500.00
Imperial College of Science and Technology. Research on vitamins, sterols and related compounds (RF 38070) . . . . .	11,445.31	. . . . .	Cr. 533.17
University of Manchester, England			
Equipment for Department of Organic Chemistry (RF 50058) . . . . .	. . . . .	15,000.00	. . . . .
University of Missouri, Columbia			
Research in genetics (RF 47054) . . . . .	2,622.24	. . . . .	2,622.24
University of North Carolina, Chapel Hill			
Research in mathematical and experimental genetics (RF 49079) . . . . .	22,500.00	. . . . .	15,000.00
University of Nottingham, England			
Equipment for research in biochemistry (RF 49129) . . . . .	16,250.00	. . . . .	15,764.57

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	APPROPRIATIONS		1950	340	
	PRIOR YEARS	1950	PAYMENTS		
<b>NATURAL SCIENCES — Continued</b>					
<b>Experimental Biology — Continued</b>					
<b>University of Oxford, England</b>					
<b>Dyson Perrins Laboratory of Organic Chemistry</b>					
Research in organic chemistry (RF 47084).....	\$8,079.37	\$ .....	\$3,362.25	THE ROCKEFELLER FOUNDATION	
Equipment for research (RF 49122).....	14,000.00	.....	12,522.60		
Sir William Dunn School of Pathology. Research on antibiotics (RF 46021, 47003).....	1,553.08	.....	.....		
Research in crystallography (RF 49123).....	5,359.37	.....	1,400.94		
<b>University of Pennsylvania, Philadelphia</b>					
Research on permeability of the red blood cell (RF 44056).....	442.47	.....	Cr.33.93		
<b>University of Pittsburgh, Pennsylvania</b>					
Research on the chemistry of proteins (RF 49019).....	11,000.00	.....	3,000.00		
<b>University of Rochester, New York</b>					
Microphotometric studies of biological tissues (RF 49114).....	53,595.00	.....	34,832.79		
<b>University of São Paulo, Brazil</b>					
<b>Faculty of Medicine</b>					
University Radiochemistry Laboratory. Work with radioactive isotopes in experimental biology and medicine (RF 50146).....	.....	13,600.00	.....		
<b>Faculty of Philosophy, Sciences and Letters</b>					
Equipment for research in the Department of Physics (RF 45061)....	22,393.93	.....	16,626.24		
<b>University of Stockholm, Sweden</b>					
Research in biochemistry (RF 50011).....	.....	12,000.00	4,995.34		
Research in radiobiology (RF 50027).....	.....	4,200.00	1,355.90		
<b>University of Tennessee, Knoxville</b>					
Research in biochemistry (RF 50012).....	.....	7,000.00	3,500.00		



University of Texas, Austin			
Research in biochemical genetics (RF 49042) .....	\$9,000.00	\$ .....	\$6,000.00
Research in genetics of drosophila (RF 49027) .....	24,500.00	.....	10,000.00
University of Uppsala, Sweden			
Research in Institute of Physiology (RF 49126) .....	4,900.00	.....	.....
Equipment for research on proteins and polysaccharides (RF 49142) .....	100,000.00	.....	19,748.07
University of Utrecht, Netherlands			
Research in biophysics and biochemistry (RF 49113) .....	22,000.00	.....	6,000.00
University of Virginia, Charlottesville			
Research in thermodynamics of enzyme action in the Department of Medicine (RF 50008) .....	.....	30,000.00	10,000.00
University of Washington, Seattle			
Purchase and installation of electron microscope for use in research in microanatomy (RF 50004) .....	.....	17,500.00	17,244.98
University of Wisconsin, Madison			
Research in biochemistry of symbiotic nitrogen fixation (RF 46118) .....	10,444.36	.....	4,726.04
Research in physical chemistry of the proteins (RF 50059) .....	.....	15,000.00	2,500.00
Research in cytogenetics (RF 48019, 50048) .....	5,000.00	30,000.00	9,952.71
Scientific equipment for the Enzyme Institute (RF 48031) .....	75,000.00	.....	50,000.00
Research program on enzyme chemistry (RF 50047) .....	.....	20,000.00	2,500.00
Uruguay, Ministry of Public Health, Montevideo			
Equipment and expenses for the Research Institute of Biological Sciences (RF 47078, 49008) .....	18,368.62	.....	8,074.96
Washington University, St. Louis, Missouri			
Research in experimental embryology (RF 50037) .....	.....	31,200.00	10,400.00
Biochemical research (RF 49117) .....	42,125.00	.....	7,996.62
Worcester Foundation for Experimental Biology, Massachusetts			
Research on the physiology of mammalian eggs and sperm (RF 50082) ..	.....	22,500.00	.....

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	APPROPRIATIONS		1950
	PRIOR YEARS	1950	PAYMENTS
<b>NATURAL SCIENCES — Continued</b>			
<b>Experimental Biology — Continued</b>			
Yale University, New Haven, Connecticut			
Research on proteolytic enzymes (RF 48133).....	\$15,600.00	\$.....	\$7,781.85
Research in the Department of Botany (RF 48032).....	35,000.00	.....	10,000.00
<b>Agriculture</b>			
Collaborative Operating Program in Agriculture in Colombia (RF 49127, 50138).....	40,000.00	50,000.00	26,296.87
College of Agriculture "Antonio Narro," Saltillo, Mexico			
Equipment and supplies (RF 49102).....	3,505.00	.....	3,505.00
Institute of Agronomy, Campinas, State of São Paulo, Brazil			
Research in plant viruses (RF 49156).....	15,000.00	.....	.....
Inter-American Institute of Agricultural Sciences, Turrialba, Costa Rica			
Strengthening the library resources and making possible the development of a scientific communication program (RF 49077).....	47,500.00	.....	11,510.21
Development of a tropical dairy cattle project (RF 50057).....	.....	11,100.00	5,500.00
Inter-American Symposium on Plant Breeding, Mexico, D. F.			
Expenses of an Inter-American Symposium on Plant Breeding to be held under the auspices of the staff of the Office of Special Studies, Secretariat of Agriculture and Animal Industry, Mexico (RF 49100).....	5,150.73	.....	381.32
Inter-American Symposium on Plant Pests and Diseases, Mexico, D. F.			
Expenses (RF 50028).....	.....	12,500.00	9,064.13
Latin American Scholarships to the Mexican Agricultural Program (RF 50151).....	.....	50,000.00	.....
<b>Mexican Agricultural Program</b>			
General expenses (RF 46126, 47115, 48028, 48123, 49109, 49136, 50137)	464,249.06	309,700.00	266,525.74
Nutrition research (RF 48104).....	2,327.70	.....	.....
Support of a special program of improvement of the Mexican substations for agricultural research and demonstration (RF 45106).....	368.29	.....	.....

Cost of providing greenhouse facilities (RF 46127) . . . . .	\$1,694.62	\$ . . . . .	\$ . . . . .	
Ministry of Agriculture, Santiago, Chile				
Cooperative project to establish on full-time salaries Chilean agricultural scientists engaged in food production programs (RF 49155) . . . . .	12,000.00	. . . . .	. . . . .	
National University of Colombia				
Faculty of Agronomy, Palmira				
Equipment (RF 47118) . . . . .	3,869.71	. . . . .	3,531.94	
To send outstanding graduating class students for specialized training with The Rockefeller Foundation's agricultural staff in Mexico (RF 50079) . . . . .	. . . . .	9,000	. . . . .	
Faculty of Agronomy, Medellín				
Equipment (RF 47117) . . . . .	29,737.85	. . . . .	11,837.03	
To send outstanding graduating class students for specialized training with The Rockefeller Foundation's agricultural staff in Mexico (RF 48072) . . . . .	10,188.32	. . . . .	3,579.39	
Teaching and research facilities, study trips of staff members, and to assist in bringing foreign visiting professors to the faculty (RF 49031)	24,514.94	. . . . .	7,700.70	
Faculties of Agronomy at Medellín and Palmira				
Toward cost of student dormitory at each of these agricultural colleges (RF 50102) . . . . .	. . . . .	50,000.00	. . . . .	
Pan American Agricultural School, Tegucigalpa, Honduras				
Scholarships for practical experience with the Foundation's agricultural program in Mexico, or study in the United States (RF 49157) . . . . .	15,000.00	. . . . .	6,000.00	
Secretariat of Agriculture, Mexico				
National College of Agriculture, Chapingo. Teaching and research facilities, materials for the college library, and travel of visiting professors (RF 49018) . . . . .	12,631.55	. . . . .	10,317.48	
Technological Institute, Monterrey, Mexico				
Equipment and supplies for the Department of Agronomy (RF 49101) . . .	5,768.00	. . . . .	5,595.06	

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	APPROPRIATIONS		1950	344	
	PRIOR YEARS	1950	PAYMENTS		
<b>NATURAL SCIENCES — Continued</b>					
<i>Agriculture — Continued</i>					
University of San Marcos, Lima, Peru					
Faculty of Veterinary Medicine. Equipment and supplies (RF 49103, 50150).....	\$3,514.21	\$66,000.00	\$2,236.89	THE ROCKEFELLER FOUNDATION	
University of São Paulo, Brazil					
Instituto Agronômico, Campinas (RF 50148).....	.....	20,000.00	.....		
Instituto Biológico, São Paulo (RF 50149).....	.....	20,000.00	.....		
School of Agriculture, Piracicaba (RF 50147).....	.....	20,000.00	.....		
<b>Fellowships and Grants in Aid</b>					
<b>Fellowships</b>					
Administered by The Rockefeller Foundation (RF 45080, 46136, 47135, 48139, 49145, 50154).....					
362,014.73	175,000.00	144,839.45			
Brown University, Providence, Rhode Island					
Support of scholarships, assistantships and fellowships in advanced applied mathematics (RF 46063).....					
19,148.75	.....	17,520.00			
National Research Council, Washington, D. C. (RF 46008, 47057, 48063, 48113, 49084, 50054).....					
106,071.98	60,000.00	60,143.95			
New York University, New York					
Development of graduate work in applied mathematics (RF 46009)...					
18,459.47	.....	5,874.88			
<b>Grants in Aid</b>					
Administered by The Rockefeller Foundation (RF 46106, 47058, 47139, 48143, 49149, 50159).....					
452,480.76	300,000.00	267,555.44			
Emergency scientific reconstruction, Italy					
Equipment, consumable supplies and other materials for Italian scientists (RF 48067).....					
402.46	.....	Cr. 1.61			

Special Emergency Grant-in-Aid Fund			
Scientific equipment for natural science laboratories of universities and technical schools in the Netherlands (RF 45089).....	\$9,372.70	\$.....	\$1,970.10
General			
American Academy of Arts and Sciences, Boston, Massachusetts			
Support of activities aimed at making more sound and effective the inter-relationships between the various branches of the natural sciences, the social sciences and the humanities (RF 49085).....	7,500.00	.....	3,000.00
American Mathematical Society, New York			
Expenses of International Congress of Mathematicians (RF 37108)....	5,000.00	.....	5,000.00
Centre national de la Recherche scientifique, Paris, France			
Special equipment for natural science research laboratories of France (RF 46048).....	17,066.24	.....	15,240.81
Travel of non-French delegates to conferences of scientists (RF 46049)..	45,331.08	.....	23,858.73
China Medical Board, Inc., New York			
Peiping Union Medical College, China			
Human paleontological research in Asia (RF 45024).....	17,149.69	.....	5.67
Conservation Foundation, The, New York			
Operating and administrative expenses, and support of projects (RF 49056).....	30,000.00	.....	10,000.00
Harvard University, Cambridge, Massachusetts			
Research and publication of research in the history of science (RF 47013)	2,504.63	.....	.....
Institute for the Unity of Science, Cambridge, Massachusetts			
Support of activities (RF 47131).....	9,000.00	.....	.....
International Meteorological Organization, Lausanne, Switzerland			
Analysis and publication of data collected during the International Polar Year of 1932-1933 (RF 47132).....	12,000.00	.....	12,000.00

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	APPROPRIATIONS		1950
	PRIOR YEARS	1950	PAYMENTS
<b>NATURAL SCIENCES — Continued</b>			
<b>General — Continued</b>			
National Research Council, Washington, D. C.			
Expenses of its Office of Scientific Personnel (RF 49083).....	\$7,500.00	\$.....	\$7,500.00
Princeton University, New Jersey			
Research in social physics (RF 50167).....	.....	15,000.00	.....
Royal Institution of Great Britain, London			
Davy Faraday Research Laboratory. Equipment and supplies for the modernization and expansion of workshop and instrument-making facilities (RF 50111).....	.....	11,000.00	.....
University of Brazil, Rio de Janeiro			
Full-time professorships in the Faculty of Philosophy (RF 49154).....	14,000.00	.....	6,831.00
University of Chicago, Illinois			
International aspects of a program of meteorite studies (RF 49078)....	54,012.50	.....	29,452.38
University of Iceland, Reykjavik			
Cost of building and equipping an Institute of Experimental Pathology (RF 45048, 48110).....	37,127.57	.....	7,185.85
University of Oslo, Norway			
Postwar reconstruction of research facilities in natural sciences (RF 46117).....	1,204.20	.....	.....
University of São Paulo, Brazil			
Faculty of Philosophy, Sciences and Letters (RF 50145)			
To strengthen the Departments of Genetics, General Physiology, Biochemistry, Botany, Zoology, Chemistry, Mineralogy, and Physical Chemistry.....	.....	30,000.00	.....
Marine Biological Laboratory. Equipment and supplies.....	.....	10,000.00	.....

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Research, equipment and supplies for certain of the basic science departments of the Faculty of Philosophy, Sciences and Letters and for the Department of Biochemistry of the Faculty of Veterinary Medicine (RF 49099).....	\$20,000.00	\$.....	\$18,102.64
University Research Fund. Equipment and consumable supplies (RF 47059).....	11,399.92	.....	8,786.05
<b>TOTAL — NATURAL SCIENCES.....</b>	<u>\$4,113,242.27</u>	<u>\$2,092,515.00</u>	<u>\$1,963,733.26</u>
<b>SOCIAL SCIENCES</b>			
American Bar Association Endowment, New York			
Commission on Organized Crime (RF 50136).....	\$.....	\$25,000.00	\$.....
American Institute of Accountants, New York			
Study of accounting definitions and postulates and their effect upon political-economic policies (RF 47073).....	10,000.00	.....	10,000.00
American Institute of Pacific Relations, Inc., New York			
General expenses (RF 46044, 50091).....	5,000.00	60,000.00	20,000.00
American Law Institute, Philadelphia, Pennsylvania			
Study of development and application of ethical concepts of the Lord Chancellors and the Courts of Equity (RF 49140).....	20,125.00	.....	13,000.00
Preliminary study of needed changes in the criminal law and its administration in the United States (RF 50135).....	.....	20,000.00	.....
American Psychological Association, New York			
Research connected with the development of a code of ethical practice for psychologists (RF 49012).....	4,971.00	.....	2,708.74

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	APPROPRIATIONS		1950 PAYMENTS
	PRIOR YEARS	1950	
<i>SOCIAL SCIENCES — Continued</i>			
Brookings Institution, Inc., The, Washington, D. C.			
Research and education in fields of American foreign policy and international relations (RF 47027) . . . . .	\$37,500.00	\$ . . . . .	\$37,500.00
Research and education in the field of international relations (RF 50036, 50083) . . . . .	.....	180,000.00	.....
Canadian Institute of International Affairs, Toronto			
General budget (RF 46036) . . . . .	11,904.75	.....	5,664.38
Canadian Social Science Research Council, Montreal			
Toward expenses of its program (RF 49098) . . . . .	23,200.95	.....	13,594.50
Toward the costs of professorial leaves (RF 50071) . . . . .	.....	5,000.00	5,000.00
Carnegie Foundation, The Hague, Netherlands			
Purchase of books, periodicals and pamphlets and for cataloguing (RF 47028) . . . . .	11,982.85	.....	7,500.00
Columbia University, New York			
Development of a program of Far Eastern studies through the various social science departments (RF 48041) . . . . .	96,500.00	.....	22,650.00
Expenses of a study of social balance in Western society (RF 48049) . . . . .	5,100.00	.....	5,100.00
School of International Affairs			
General support of the Russian Institute (RF 45034, 50133) . . . . .	110,219.87	420,000.00	48,360.00
Program of the Institute for Urban Land Use and Housing Studies (RF 48021) . . . . .	35,798.98	.....	35,798.98
Study of trends in labor union leadership (RF 47006) . . . . .	18,800.00	.....	18,800.00
University Press. Preparation and publication of a selective, annotated bibliography of League of Nations documents (RF 50060) . . . . .	.....	3,000.00	3,000.00
Committee on Research in Economic History, Inc., Cambridge, Massachusetts			
Program of research and training in economic history (RF 50103) . . . . .	.....	60,000.00	12,500.00



<b>Community Service Society of New York, New York</b>			
Institute of Welfare Research, Studies of the results of social case work (RF 49130).....	\$11,250.00	\$.....	\$8,750.00
<b>Cornell University, Ithaca, New York</b>			
Pilot study of social adjustment in old age (RF 50118).....	.....	15,000.00	10,000.00
Program of research on community action and intergroup relations (RF 50104).....	.....	95,000.00	.....
Study of data collected in the Manzanar and Poston war relocation communities (RF 48136).....	5,000.00	.....	4,249.45
Research in the field of group hostility and prejudice (RF 48004).....	35,345.00	.....	26,000.00
Study of the relation of civil rights to the control of subversive activities in the United States (RF 48050, 50066).....	27,500.00	20,000.00	30,103.60
<b>Council on Foreign Relations, New York</b>			
General research program (RF 47102).....	10,000.00	.....	10,000.00
History of the foreign relations of the United States during World War II (RF 46002).....	1,175.22	.....	.....
<b>Crete Survey</b>			
Expenses of a survey in Crete as a means of exploring ways of raising the standard of living in undeveloped countries (RF 48102).....	1,150.71	.....	985.88
<b>Dutch Economic Institute, Rotterdam, Netherlands</b>			
General budget (RF 46057).....	789.69	.....	.....
<b>Economic Commission for Europe, United Nations, Geneva, Switzerland</b>			
Study of long-run tendencies in the European economy (RF 49067).....	45,200.00	.....	26,100.00
<b>Far East — Population Problems</b>			
Exploratory reconnaissance in public health and demography in the Far East for the International Health Division and the Social Sciences (RF 48097).....	2,258.18	.....	78.43
<b>Federal Council of Churches of Christ in America, New York</b>			
Program of its Department of the Church and Economic Life (RF 48130)...	70,000.00	.....	35,000.00

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	APPROPRIATIONS		1950
	PRIOR YEARS	1950	PAYMENTS
<b>SOCIAL SCIENCES — <i>Continued</i></b>			
<b>Fellowships</b>			
Administered by The Rockefeller Foundation (RF 47108, 48090, 48140, 49146, 50155).....	\$242,560.87	\$125,000.00	\$62,488.66
Australian-New Zealand Social Science Fellowship Committee, Melbourne			
Administrative expenses (RF 49108).....	1,000.00	.....	1,000.00
Canadian Social Science Research Council, Montreal (RF 47093, 48089, 50070).....	11,401.89	15,000.00	9,063.00
Columbia University, New York. School of International Affairs			
Special fellowships in the Russian Institute (RF 47045).....	56,716.37	.....	.....
Economic Commission for Europe, United Nations, Geneva, Switzerland			
In-service training scholarships (RF 48096, 50041).....	6,000.00	12,000.00	12,000.00
Social Science Research Council, New York (RF 45065, 46053, 48006).....	254,825.00	.....	102,172.67
Foreign Policy Association, New York			
Research and general program (RF 45116, 50072).....	20,000.00	20,000.00	30,000.00
<b>Grants in Aid</b>			
Administered by The Rockefeller Foundation (RF 46113, 46141, 47140, 48091, 48144, 49150, 50109, 50160).....	406,833.53	270,000.00	254,606.55
Harvard University, Cambridge, Massachusetts			
Program of economic research (RF 47126).....	56,533.10	.....	33,713.02
Research in social sciences (RF 35086).....	11,372.65	.....	.....
Research in economic history (RF 49092).....	37,500.00	.....	27,000.00
Laboratory of Human Development. Study of social and cultural factors in child development (RF 50051).....	.....	41,100.00	20,550.00

<b>Laboratory of Social Relations</b>			
Study of comparative values in five cultures (RF 49032).....	\$65,000.00	\$ .....	\$35,000.00
Studies of motivated perception (RF 49073).....	20,333.34	.....	11,866.67
<b>Institut de Science economique appliquee, Paris, France</b>			
Research program (RF 49068).....	20,000.00	.....	5,272.76
<b>Institute for Advanced Study, Princeton, New Jersey</b>			
Assistance and compensation in a program of study and writing (RF 49064)	22,975.70	.....	5,000.00
<b>Institute of Economic and Social Research, Paris, France</b>			
General expenses, equipment and printing accumulated studies (RF 47005)	49,852.13	.....	.....
<b>Johns Hopkins University, Baltimore, Maryland</b>			
Experiment in research training in the social sciences (RF 46055).....	3,500.00	.....	Cr. 1,231.81
Study to measure and interpret trends and forces affecting the United States in its international relations (RF 47103).....	11,471.55	.....	10,620.60
<b>London School of Economics and Political Science, University of London, England</b>			
Library development (RF 31030).....	3,029.19	.....	3,029.19
Purchase of land for expansion of school plant (RF 31028).....	8,509.95	.....	.....
Department of Sociological and Demographic Research. General expenses (RF 49115).....	45,014.75	.....	5,883.94
<b>Miami University, Oxford, Ohio</b>			
Studies of population redistribution (RF 46080).....	35,122.84	.....	11,804.20
<b>National Bureau of Economic Research, New York</b>			
General program and special programs of research in finance and fiscal policy (RF 44020, 47120, 49141, 50134).....	1,400,000.00	400,000.00	300,000.00
<b>National Foundation of Political Science, Paris, France</b>			
Program in international relations (RF 50029).....	.....	2,800.00	2,800.00

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	APPROPRIATIONS		1950
	PRIOR YEARS	1950	PAYMENTS
<i>SOCIAL SCIENCES — Continued</i>			
National Institute of Economic and Social Research of Great Britain, London			
General budget (RF 44108, 50075) . . . . .	\$26,910.70	\$51,300.00	\$16,811.25
Expenses of the International Association for Research in Income and Wealth (RF 50006) . . . . .	.....	21,000.00	3,500.00
Office national des Universités, Paris, France			
Expenses of a section for the social sciences in the Ecole pratique des Hautes Etudes (RF 47125) . . . . .	13,555.77	.....	9,741.38
Ohio State University, Columbus			
Study of executive positions in educational institutions in its program of leadership studies (RF 48002) . . . . .	17,625.20	.....	14,338.42
Pacific Coast Board of Intergovernmental Relations, San Francisco, California			
General expenses (RF 47030) . . . . .	5,138.46	.....	5,000.00
Pacific Council of the Institute of Pacific Relations, Honolulu, Hawaii			
General expenses and research (RF 46045, 50092) . . . . .	20,000.00	50,000.00	30,000.00
Population Association of America, Washington, D. C.			
Expenses of an executive office in the United States of the International Union for the Scientific Study of Population (RF 48106) . . . . .	3,750.00	.....	3,750.00
Princeton University, New Jersey			
Office of Population Research of the School of Public and International Affairs (RF 44109, 48105) . . . . .	200,000.00	.....	70,000.00
Royal Institute of International Affairs, London, England (Chatham House)			
History of the war and of the peace settlement (RF 45045, 47071) . . . . .	43,609.24	.....	17,486.51
Preparation of a history of the League of Nations (RF 46122) . . . . .	300.61	.....	.....
Research program (RF 45044) . . . . .	12,435.29	.....	7,004.68
Studies in international economic policy (RF 50013) . . . . .	.....	2,565.00	1,260.84

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Royal Statistical Society, London, England			
Library facilities and additional secretarial and editorial assistance (RF 50087) . . . . .	\$ . . . . .	\$20,000.00	\$ . . . . .
School of Social Sciences, Helsinki, Finland			
Study of the assimilation of displaced people of Finland (RF 48069) . . . . .	2,697.61	.....	2,697.61
Social Science Research Council, New York			
Administrative budget (RF 48022) . . . . .	60,000.00	.....	40,000.00
Conferences and planning (RF 49046) . . . . .	125,000.00	.....	50,000.00
Expenses of the <i>Current Digest of the Soviet Press</i> (RF 50018) . . . . .	.....	55,000.00	31,500.00
General research projects (RF 31126) . . . . .	13,750.06	.....	13,294.46
Grants in aid of research (RF 49047) . . . . .	45,000.00	.....	20,000.00
Purchase and distribution of social science publications to European institutions (RF 48046) . . . . .	17,000.00	.....	16,520.86
Research in economic history of the United States, the islands and nearby territory (RF 40116) . . . . .	85,000.00	.....	41,376.40
Research planning in housing (RF 47020) . . . . .	15,015.93	.....	15,015.93
Special staff in international relations (RF 49118) . . . . .	25,000.00	.....	6,029.46
Study of the specific ways in which social science analysis can contribute to an understanding of ethical issues and value problems in our society (RF 48129) . . . . .	8,750.00	.....	.....
Stanford University, Palo Alto, California			
Food Research Institute			
International history of food and agriculture during World War II (RF 46041) . . . . .	90,000.85	.....	60,000.00
Study of Soviet economic development (RF 48042, 50098) . . . . .	13,657.01	5,000.00	8,800.00
Program of predoctoral training in agricultural economics research (RF 50086) . . . . .	.....	36,000.00	.....
State University of Iowa, Iowa City			
Study by Child Welfare Research Station of social and cultural factors in child development (RF 47032) . . . . .	40,992.65	.....	Cr. 66.65

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	PRIOR YEARS	1950	
<b>SOCIAL SCIENCES — <i>Continued</i></b>			
Swarthmore College, Swarthmore, Pennsylvania			
To complete the catalogue of its Peace Collection (RF 48137).....	\$5,550.00	\$.....	\$5,550.00
Tufts College, Medford, Massachusetts			
Experimental program in the psychiatric approach to training and research in sociology (RF 48087).....	3,750.00	.....	3,155.38
University of British Columbia, Vancouver, Canada			
Development of a program in Slavic studies (RF 49080).....	40,250.00	.....	10,625.00
University of California, Berkeley			
Bureau of Business and Economic Research. Research program (RF 46111)	5,000.00	.....	5,000.00
Institute of Industrial Relations. Studies of the impact of an aging popula- tion on American society (RF 49139).....	125,000.00	.....	7,500.00
University of Cambridge, England			
Department of Applied Economics. General budget (RF 46001).....	30,638.06	.....	14,009.38
University of Chicago, Illinois			
Committee on Study of Later Maturity. Studies of the occupational and re- tirement adjustments of older people (RF 50107).....	.....	20,500.00	.....
Program of the Cowles Commission for Research in Economics (RF 48047)	70,000.00	.....	30,000.00
Program in education, training and research in race relations (RF 47031)...	52,500.00	.....	17,242.23
Program in research in agricultural economics (RF 48085).....	22,700.00	.....	16,333.71
Research project on the determinants of constructive union-management relations (RF 48086).....	3,750.00	.....	3,742.52
University of Manchester, England			
Economics Research Section. Research program (RF 46112).....	26,952.81	.....	11,207.50

University of Michigan, Ann Arbor			
Program of methodological research in the field of human relations by its			
Research Center for Group Dynamics (RF 50019).....	\$.....	\$52,500.00	\$10,675.00
Survey Research Center. Study of the validity and reliability of survey data			
and of basic determinants of economic behavior (RF 50003).....	.....	19,320.00	19,320.00
University of Minnesota, Minneapolis			
Industrial Relations Center. General expenses (RF 47021).....	7,541.71	.....	7,500.00
Research in the field of intergovernmental relations (RF 46052, 49086) ...	16,669.09	.....	16,669.09
University of Notre Dame, South Bend, Indiana			
Research in international relations (RF 49091).....	55,250.00	.....	25,250.00
University of Oslo, Norway			
Institute of Economics. Research program (RF 49097).....	20,000.00	.....	10,000.00
University of Oxford, England			
Agricultural Economics Research Institute. Studies of the relations between			
agriculture and industry (RF 47074).....	735.49	.....	.....
Nuffield College. Additional research faculty in the social sciences (RF 46132)	159,197.50	.....	22,415.00
University of Pennsylvania, Philadelphia			
Wharton School of Finance and Commerce			
Industrial Research Department. General budget (RF 44111, 49128)....	43,750.00	.....	43,750.00
University of Toronto, Canada			
Development of Slavic studies (RF 49054).....	40,500.00	.....	9,000.00
University of Wisconsin, Madison			
Program of research in housing (RF 46081).....	11,634.84	.....	5,433.54
Study of the law and the lumber industry in Wisconsin (RF 48051).....	25,987.50	.....	4,212.50
World Peace Foundation, Boston, Massachusetts			
Preparation of volumes in the <i>Documents on American Foreign Relations</i>			
(RF 49043).....	8,000.00	.....	4,000.00

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	APPROPRIATIONS		1950
	PRIOR YEARS	1950	PAYMENTS
<b>SOCIAL SCIENCES — Continued</b>			
<b>Yale University, New Haven, Connecticut</b>			
Institute of International Studies. Research program (RF 49062).....	\$75,000.00	\$.....	\$50,000.00
Studies of communication and attitude change (RF 48003).....	36,428.71	.....	15,317.69
	<hr/>	<hr/>	<hr/>
<b>TOTAL — SOCIAL SCIENCES</b> .....	<b>\$5,162,300.15</b>	<b>\$2,122,085.00</b>	<b>\$2,207,053.10</b>
	<hr/>	<hr/>	<hr/>
<b>HUMANITIES</b>			
<b>Studies in Language and Foreign Cultures</b>			
<b>American Board of Commissioners for Foreign Missions, Boston, Massachusetts</b>			
Studies in intellectual and cultural movements in Turkey (RF 49138)...	\$25,000.00	\$.....	\$2,746.30
<b>American Council of Learned Societies, Washington, D. C.</b>			
Committee on Near Eastern Studies (RF 47094).....	4,000.00	.....	.....
Preparing materials for Slavic studies in the United States (RF 47049, 49053).....	20,500.00	.....	.....
Procurement and reproduction of materials on Slavic subjects (RF 47127)	98,000.00	.....	60,000.00
Program of translation into English of modern materials in Near Eastern languages (RF 48125).....	75,000.00	.....	10,691.99
<b>American University of Beirut, Lebanon</b>			
Interpretative studies of the modern Arab Middle East (RF 49071) .....	68,575.00	.....	24,925.00
<b>Colegio de México, Mexico, D. F.</b>			
Programs for advanced study and for training of personnel (RF 48033) ..	25,140.00	.....	8,500.00
<b>Columbia University, New York</b>			
Department of Slavic Languages. Development of teaching materials and methods of research (RF 47047).....	14,000.00	.....	.....



Cornell University, Ithaca, New York				
Support of Division of Modern Languages (RF 45091, 48098).....	\$32,525.00	\$.....	\$32,525.00	
Southeast Asian studies (RF 50139).....	.....	325,000.00	.....	
Grants in Aid				
Special fund for temporary addition of representative Chinese scholars to teaching staffs and projects in the United States (RF 44044).....	7,819.12	.....	.....	
Harvard University, Cambridge, Massachusetts				
Preparation of a descriptive analysis of the contemporary Russian lan- guage (RF 50040).....	.....	50,000.00	.....	
Indiana University, Bloomington				
Development of East European studies (RF 47002).....	11,000.00	.....	5,400.00	
Korean Language Society, Seoul, Korea				
To provide essential materials to publish 20,000 copies each of the five unpublished volumes of its new dictionary of the Korean language (RF 48082).....	2,128.60	.....	.....	
National Institute of Anthropology and History, Mexico, D. F.....				
Development of teaching and research program and reorganization of library resources (RF 43083, 48034).....	16,881.12	.....	8,200.00	
National Tsing Hua University, Kunming, China				
Support of work in humanities (RF 47099).....	15,000.00	.....	.....	
Occidental College, Los Angeles, California				
Developing humanistic studies in the southwest area of the United States and in northern Mexico (RF 49024).....	25,850.00	.....	8,700.00	
Pomona College, Claremont, California				
Development of Far Eastern and Slavic studies (RF 44131).....	12,200.00	.....	3,700.00	
Princeton University, New Jersey				
Development of Near Eastern studies (RF 46066).....	21,250.00	.....	12,250.00	

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	APPROPRIATIONS		1950
	PRIOR YEARS	1950	PAYMENTS
<i>HUMANITIES — Continued</i>			
<i>Studies in Language and Foreign Cultures — Continued</i>			
St. Vladimir's Orthodox Theological Seminary and Academy, New York			
Support of research and writing by members of its faculty (RF 50031)...	\$.....	\$13,500.00	\$3,000.00
Stanford University, Palo Alto, California			
Development of Far Eastern and Slavic studies (RF 44130).....	25,050.00	.....	13,250.00
Development of teaching and research in the areas and languages of the Pacific, Eastern Asia and Russia (RF 45009).....	5,199.31	.....	5,199.31
Hoover Institute and Library on War, Revolution and Peace. Slavic studies (RF 46092).....	20,533.89	.....	20,533.89
United Board for Christian Colleges in China, New York			
Further support for work in the interpretation to the West of Chinese philosophy (RF 50032).....	.....	3,900.00	3,900.00
University of British Columbia, Vancouver, Canada			
Development of a program in Slavic studies (RF 49080).....	40,250.00	.....	10,625.00
University of California, Berkeley			
Development of Slavic and Far Eastern studies (RF 44129).....	17,200.00	.....	6,100.00
Development of Far Eastern language and area courses (RF 47063).....	5,060.00	.....	4,879.96
Development of personnel in Slavic studies (RF 47128).....	42,914.79	.....	23,006.46
University of Chicago, Illinois			
Analysis and evaluation of methods of teaching modern languages (RF 44100).....	11,781.08	.....	.....
University of Leiden, Netherlands			
Chinese Institute. Training of personnel and purchase of books (RF 46023).....	589.26	.....	589.26

<b>University of Michigan, Ann Arbor</b>			
Cross-disciplinary studies in the theory of language and symbolism (RF 50140) . . . . .	\$ . . . . .	\$69,600.00	\$ . . . . .
<b>University of Pennsylvania, Philadelphia</b>			
Work in modern Indian languages and literatures (RF 47129) . . . . .	60,000.00	.	33,576.35
<b>University of the Philippines, Manila</b>			
Library development and research in Philippine history (RF 48111) . . . . .	12,009.00	.	2,997.00
<b>University of Stockholm, Sweden</b>			
Training in Far Eastern studies of students from Sweden, Norway and Denmark (RF 48035) . . . . .	19,952.83	.	19,952.83
<b>University of Toronto, Canada</b>			
Development of Slavic studies (RF 49054) . . . . .	40,500.00	.	9,000.00
<b>University of Washington, Seattle</b>			
Development of Far Eastern and Slavic studies (RF 44128) . . . . .	24,718.76	.	12,213.00
Far Eastern Institute. Research on the Far East (RF 47035) . . . . .	50,254.13	.	13,000.00
<b>Wayne University, Detroit, Michigan</b>			
Preparation of a frequency list of Russian words (RF 48126, 49137) . . . . .	55,390.00	.	23,547.55
<b>Yale University, New Haven, Connecticut</b>			
Support of Far Eastern studies (RF 45110) . . . . .	18,250.00	.	18,250.00
Development of personnel in the field of Chinese studies (RF 47064) . . . . .	3,450.00	.	3,450.00
<b>American Studies</b>			
<b>Abraham Lincoln Association, Springfield, Illinois</b>			
Preparing annotated edition of writings of Abraham Lincoln (RF 49131) . . . . .	6,000.00	.	6,000.00
<b>Henry E. Huntington Library and Art Gallery, San Marino, California</b>			
Program of regional studies (RF 50002) . . . . .	.	25,000.00	5,000.00
<b>Library of Congress, Washington, D. C.</b>			
American studies (RF 43095) . . . . .	19,000.00	.	.

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	APPROPRIATIONS		1950
	PRIOR YEARS	1950	PAYMENTS
<b>HUMANITIES — Continued</b>			
<b>American Studies — Continued</b>			
McGill University, Montreal, Canada			
Studies in the public and private life of W. L. Mackenzie King (RF 49060)	\$80,000.00	\$.....	\$.....
Michigan State College, East Lansing			
Studies in Midwestern life and history (RF 49025).....	25,000.00	.....	16,358.00
National Archives, Washington, D. C.			
Special fund for producing basic microfilm stocks of research materials and for copying files of the National Archives in the service of scholars (RF 48061).....	45.60	.....	.....
Newberry Library, Chicago, Illinois			
Studies in Midwestern culture (RF 47034).....	16,502.67	.....	5,742.04
Northwestern University, Evanston, Illinois			
Teaching and field studies in American culture (RF 46067).....	5,000.00	.....	5,000.00
Stanford University, Palo Alto, California			
Seminars in American studies to be held in Japan (RF 50141, joint grant with Social Sciences).....	.....	20,000.00	.....
Tokyo University, Japan			
Seminars in American studies sponsored jointly by Tokyo University and Stanford University (RF 50099 and, jointly with Social Sciences, RF 50142).....	.....	4,000.00	1,000.00
University of Minnesota, Minneapolis			
Studies in Northwestern history (RF 48080).....	12,500.00	.....	12,500.00
University of Munich, Germany			
Expenses of visiting professors from the United States or Canada and for purchase of library materials for its Amerika Institut (RF 49096).....	48,500.00	.....	19,044.87
University of Oklahoma, Norman			
Development of archival resources on the history and contemporary life of Oklahoma (RF 48062).....	18,198.53	.....	8,471.20

University of Wisconsin, Madison			
Program of research and teaching in the materials of American civilization (RF 49081).....	\$22,500.00	\$.....	\$3,372.52
<b>Libraries</b>			
American Library Association, Chicago, Illinois			
Selection and purchase for libraries in war areas of reference books published during the years 1939-1946 (RF 45038).....	259.46	.....	.....
Association of Special Libraries and Information Bureaux, London, England			
Preparation of a catalogue of periodicals in British libraries (RF 44004) ..	22,968.21	.....	5,603.76
British Museum, London, England			
To enable the museum to offer to American libraries, at a discount, subscriptions to the new edition of its <i>Catalogue of Printed Books</i> (RF 30076).....	76,547.13	.....	642.19
University Research Fund, University of São Paulo, Brazil			
Bibliographical information service (RF 45035).....	14,640.69	.....	1,500.00
<b>Drama, Film and Radio</b>			
National Theatre Conference, Cleveland, Ohio			
Support of activities, projects and fellowships (RF 45028, 49106).....	28,904.29	.....	18,904.29
University of Bristol, England			
Development of university program in drama (RF 49119).....	20,000.00	.....	4,903.28
University of Wisconsin, Madison			
Development of the state program in drama and allied arts (RF 48100)...	7,500.00	.....	5,911.76
<b>Other Subjects</b>			
American Council of Learned Societies, Washington, D. C.			
General support, planning, development and fellowships (RF 41029, 46089, 47025, 50033).....	101,788.67	393,750.00	97,918.29
Pacific Coast Committee. Activities in the humanities (RF 46091).....	10,500.00	.....	3,500.00
Study of personnel problems in the humanities (RF 49052).....	31,000.00	.....	28,560.00
American School of Classical Studies, Athens, Greece			
Museum to house objects excavated in the Agora (RF 37089).....	138,354.94	.....	.....

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	APPROPRIATIONS		1950
	PRIOR YEARS	1950	PAYMENTS
<b>HUMANITIES — Continued</b>			
<b>Other Subjects — Continued</b>			
Colegio de México, Mexico, D. F.			
Research and training seminar on contemporary Mexican history (RF 50030).....	\$.....	\$14,500.00	\$3,477.50
Cornell University, Ithaca, New York			
Development of methods, materials and personnel for the teaching of the history of modern science (RF 48124).....	31,000.00	.....	7,500.00
Downing College, University of Cambridge, England			
Toward the salary of an assistant for the director of English studies (RF 49016).....	6,213.53	.....	1,866.05
Humanities Research Council of Canada, Toronto			
Support of activities in planning and development (RF 48017).....	8,421.24	.....	4,152.66
Institute of International Education, New York			
To bring twenty young foreign artists to the United States for visits (RF 50050).....	.....	23,000.00	23,000.00
Italian Institute of Historical Studies, Naples			
Library materials, scholarships and general support (RF 49007).....	17,634.35	.....	7,211.87
Kenyon College, Gambier, Ohio			
Expenses of a School of English Studies (RF 47098).....	13,333.34	.....	13,333.34
Toward fees for articles published in the <i>Kenyon Review</i> (RF 47037).....	10,362.81	.....	4,237.46
Princeton University, New Jersey			
Establishment of an experimental group in literary criticism (RF 49023).....	25,000.00	.....	14,496.67
Special microfilming projects in England in connection with the program of the American Council of Learned Societies (RF 43064).....	2,143.13	.....	.....

University of Bordeaux, France			
Development of work in the humanities (RF 47061).....	\$13,086.81	\$.....	\$6,904.75
University of Lyon, France			
Development of work in the humanities (RF 47060).....	10,401.90	.....	8,429.75
University of Missouri, Columbia			
For use by its School of Journalism in a training program for Austrian press personnel (RF 50038).....	.....	24,000.00	24,000.00
University of Oslo, Norway			
Development of work in the humanities (RF 46047).....	2,261.87	.....	.....
University of the South, Sewanee, Tennessee			
Toward fees for articles published in the <i>Sewanee Review</i> (RF 48011).....	17,954.75	.....	5,456.75
University of Toulouse, France			
Development of work in the humanities (RF 47062).....	16,855.93	.....	18.55
Yale University, New Haven, Connecticut			
Research for a study of the characteristics of the history of the twentieth century (RF 48081).....	10,000.00	.....	10,000.00
Selection, purchase and shipment of Western literature to centers for its study in the Far East (RF 49026).....	10,000.00	.....	10,000.00
Fellowships and Grants in Aid			
Fellowships			
Administered by The Rockefeller Foundation (RF 46138, 47137, 48141, 49147, 50156).....	245,022.47	125,000.00	78,457.59
American Council of Learned Societies, Washington, D. C.			
Fellowships in the humanities (RF 48059).....	150,000.00	.....	100,000.00

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	APPROPRIATIONS		1950
	PRIOR YEARS	1950	PAYMENTS
<b>HUMANITIES — Continued</b>			
<b>Fellowships and Grants in Aid — Continued</b>			
<b>Grants in Aid</b>			
Administered by The Rockefeller Foundation (RF 44146, 46121, 47109, 48084, 48145, 49151, 50089, 50161) .....	\$433,961.27	\$400,000.00	\$270,556.58
Surveys, Studies and Conferences (RF 48083) .....	12,359.03	.....	9,780.51
<b>TOTAL — HUMANITIES</b> .....	<b>\$2,669,694.51</b>	<b>\$1,491,250.00</b>	<b>\$1,257,521.13</b>
<b>MISCELLANEOUS</b>			
American Association of Colleges for Teacher Education, Oneonta, New York			
Visitation and study in this country by group of German leaders in teacher education (RF 49111) .....	\$17,500.00	\$.....	\$.....
American Council on Education, Washington, D. C.			
General purposes (RF 50022) .....	.....	150,000.00	.....
General budget of the Commission on the Occupied Areas (RF 50021) .....	.....	16,000.00	16,000.00
Association of American Universities, New York			
Study of the financing of higher education and research (RF 49065) .....	334,500.00	.....	211,292.96
Carnegie Endowment for International Peace, New York			
(Subsequently rescinded) (RF 50117) .....	.....	15,000.00	.....
Columbia University, New York			
American Press Institute and American Society of Newspaper Editors			
Bringing to the United States a group of foreign newspaper editors (RF 50015) .....	.....	25,000.00	25,000.00
European Rehabilitation (RF 48120, 49038) .....	166,961.61	.....	66,158.34
Exchange Fund (RF 46123) .....	13,004.16	.....	.....



<b>Fellowships. China</b>			
Foreign and local (RF 43021, 44038).....	\$4,928.46	\$.....	\$.....
<b>Free University of Berlin, Germany</b>			
Work in the social sciences and the humanities (RF 50063).....	.....	20,000.00	.....
<b>General Education Board, New York</b>			
Support of program (RF 46125, 47119, 48122).....	6,000,000.00	.....	1,500,000.00
<b>Grants in Aid. Administered by The Rockefeller Foundation</b>			
China (RF 42041, 43021, 44038).....	10,586.93	.....	22.59
For allocation by the officers within categories described by Trustee action and within specified limitations of amount and duration			
1950 (RF 49152, 50056).....	50,000.00	25,000.00	35,986.10
1951 (RF 50162).....	.....	50,000.00	.....
History of the International Health Division. Expenses (RF 50045).....	.....	15,000.00	5,032.92
History of the Rockefeller Boards. Expenses (RF 48029).....	38,592.28	.....	25,109.29
<b>Institute of International Education, New York</b>			
Program of international student exchange and services related thereto (RF 49089, 50049).....	18,750.00	50,000.00	68,750.00
<b>McGill University, Montreal, Canada</b>			
For the use of the Executive Council of the Universities of the British Commonwealth in connection with its meeting in 1949 (RF 49039).....	6,738.54	.....	.....
<b>Midwest Inter-Library Corporation, Chicago, Illinois</b>			
General expense of a central depository library (RF 49045).....	240,000.00	.....	200,000.00
<b>National Research Council, Washington, D. C.</b>			
Conference Board of the Associated Research Councils. Study of human resources and the fields of higher learning (RF 49088).....	120,000.00	.....	30,000.00
<b>Pacific Science Association, Washington, D. C.</b>			
Establishment of permanent secretariat (RF 49153).....	12,000.00	.....	6,000.00

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	APPROPRIATIONS		1950
	PRIOR YEARS	1950	PAYMENTS
<i>MISCELLANEOUS — Continued</i>			
Rockefeller Foundation Fellowship Directory. Preparation and distribution (RF 49143, 50163).....	\$25,000.00	\$16,000.00	\$10,258.58
United States Book Exchange, Inc., Washington, D. C. Program of international exchange by institutions of books, periodicals and similar materials (RF 48127).....	45,000.00	.....	30,000.00
University of Chicago, Illinois Toward costs of working out in cooperation with the University of Frankfurt detailed plans for a revised program of faculty exchange between the two universities (RF 50077).....	.....	3,000.00	3,000.00
University of Texas, Austin Research on the biochemical aspects of alcoholism (RF 49066).....	12,500.00	.....	12,500.00
World Student Service Fund, New York For the Salzburg Seminar in its program of American studies (RF 50053)...	.....	50,000.00	50,000.00
Yale University, New Haven, Connecticut Establishment and general support of a carbon 14 dating laboratory (RF 50132).....	.....	42,500.00	.....
TOTAL — MISCELLANEOUS.....	\$7,116,061.98	\$477,500.00	\$2,295,110.78
<b>ADMINISTRATION AND SCIENTIFIC SERVICES</b>			
<b>Scientific Services</b>			
Prior Years.....	\$63,880.85	\$.....	\$21,776.82
1950.....	1,034,753.00	4,807.00	979,144.46
1951.....	.....	998,940.00	.....

General Administration			
Prior Years .....	\$21,322.64	\$ .	\$6,304.19
1950 .....	366,195.00	1,783.00	345,526.09
1951 .....	.....	491,344.00	.....
<b>TOTAL — ADMINISTRATION .....</b>	<b>\$1,486,151.49</b>	<b>\$1,496,874.00</b>	<b>\$1,352,751.56</b>
	<u>\$28,855,778.58</u>		
<b>Less</b>			
Unused balances of appropriations allowed to lapse .....	1,165,114.95	.	
<b>GRAND TOTALS .....</b>	<b>\$27,690,663.63</b>	<b>\$11,247,964.00</b>	<b>\$12,553,071.15</b>

**REFUNDS ON PRIOR YEAR CLOSED APPROPRIATIONS**

Columbia University, New York .....	(RF 46010)	\$581.84
Columbia University, New York .....	(RF 47075)	319.88
Columbia University, New York .....	(RF 49006)	.66
Columbia University, New York .....	(RF 49112)	2,188.33
Committee of Vice-Chancellors and Principals of the Universities, Great Britain .....	(RF 49036)	5.40
Cornell University, Ithaca, New York .....	(RF 43097)	2,006.92
Encyclopaedia of Social Sciences, New York .....	(RF 32114)	2,027.61
Forsyth Dental Infirmary for Children, Boston, Massachusetts .....	(RF 49015)	507.58
Johns Hopkins University, Baltimore, Maryland .....	(RF 39004)	3.41

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REFUNDS ON PRIOR YEAR CLOSED APPROPRIATIONS — *Continued*

Malaria		
China, 1948.....	(IH 47037)	\$261.50
Colombia, 1947.....	(IH 46040)	1,025 64
Massachusetts General Hospital, Boston.....	(RF 46071)	63 11
National Research Council, Washington, D. C.....	(RF 48114)	2,316 88
National Research Council, Washington, D. C.....	(RF 47044)	4,281 67
Netherlands Institute of International Affairs, The Hague, Netherlands.....	(RF 47004)	5,645.65
University of California, Berkeley.....	(RF 46034)	94 94
University of California, Berkeley.....	(RF 47077)	11 33
University of Hawaii, Honolulu.....	(RF 48060)	4,624 81
University of Oklahoma, Norman.....	(RF 44093)	500 00
University of Pennsylvania, Wharton School of Finance, Philadelphia.....	(RF 44050)	199.30
University of Utrecht, Netherlands.....	(RF 46109)	.52
University of Utrecht, Netherlands.....	(RF 47092)	39
Yale University, New Haven, Connecticut.....	(RF 44022)	4,924 44
		<hr/>
		\$31,591 81
		<hr/> <hr/>

TRANSACTIONS RELATING TO INVESTED FUNDS

FOR THE YEAR ENDED DECEMBER 31, 1950

PURCHASED		
\$1,000	Standard Oil Co. (New Jersey) 25 year Deb. 2 $\frac{3}{8}$ s/71 @ 97.5 . . . . .	\$975 00
3,000,000	USA Treasury Notes, Ser. D, 1 $\frac{3}{4}$ s/7/1/51 @ 99.963 . . . . .	2,998,894.83
1,000,000	USA Savings Bonds, Ser. G, 2 $\frac{1}{8}$ s/10/1/62 at par . . . . .	1,000,000.00
3,000,000	USA Treasury Bonds, 2 $\frac{1}{8}$ s/6/15/67-72 @ 101.422 . . . . .	3,042,656.25
4,000,000	USA Treasury Bonds, 2 $\frac{1}{8}$ s/12/15/67-72 @ 101.422 . . . . .	4,056,875.00
5,000	Shares Aluminum Company of America Com. Stock (No par) @ \$53.416 per share . . . . .	267,079.94
15,000	Shares American Gas & Electric Co. Com. Stock (Par \$10) @ \$54.062 per share . . . . .	810,931.59
6,000	Shares Consolidated Natural Gas Co. Cap. Stock (Par \$15) @ \$44.829 per share . . . . .	268,977.27
10,000	Shares Continental Insurance Co. Cap. Stock (Par \$10) @ \$65.597 per share . . . . .	655,965.37
4,000	Shares Dow Chemical Co. Com. Stock (Par \$15) @ \$55.015 per share . . . . .	220,058.84
4,000	Shares E. I. Du Pont de Nemours & Co. Com. Stock (Par \$5) @ \$61.612 per share . . . . .	246,447.68
300	Shares El Paso Natural Gas Co. Com. Stock (Par \$3) @ \$21.375 per share plus the surrender of 3,000 rights . . . . .	6,412.50
8,442	Shares Fireman's Fund Insurance Co. Cap. Stock (Par \$5) @ \$57.47 per share . . . . .	485,160.30
5,000	Shares First National Bank of Chicago Com. Stock (Par \$100) @ \$231.876 per share . . . . .	1,159,379.35
4,000	Shares General Mills, Inc. Com. Stock (No par) @ \$55.515 per share . . . . .	222,060.92
15,000	Shares Hartford Fire Insurance Co. Cap. Stock (Par \$10) @ \$130.075 per share . . . . .	1,951,131.15
5,000	Shares Houston Lighting & Power Co. Com. Stock (No par) @ \$47.873 per share . . . . .	239,362.74
7,000	Shares Illinois Power Co. Com. Stock (No par) @ \$37.743 per share . . . . .	264,198.59
36,200	Shares International Paper Co. Com. Stock (Par \$7.50) @ \$44.549 per share . . . . .	1,612,675.40
4,305	Shares Monsanto Chemical Co. Com. Stock (Par \$5) @ \$74.74 per share . . . . .	321,753.48
4,000	Shares Montgomery Ward & Co., Inc. Com. Stock (No par) @ \$55.834 per share . . . . .	223,337.11
12,000	Shares The North American Co. Com. Stock (Par \$10) @ \$19.204 per share . . . . .	230,453.24

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TRANSACTIONS RELATING TO INVESTED FUNDS — *Continued*

714	Shares Peoples Gas Light & Coke Co. Com. Stock (Par \$100) @ \$100.00 per share plus the surrender of 4,998 rights . . . . .	\$71,400.00
286	Shares Peoples Gas Light & Coke Co. Com. Stock (Par \$100) @ \$125.94 per share . . . . .	36,019 13
27 55	Shares Standard Oil Co. of California Cap. Stock (No par) @ \$62.691 per share . . . . .	1,727 15
24,500	Shares Texas Gulf Sulphur Co. Cap. Stock (No par) @ \$81.611 per share . . . . .	1,999,481.69
15,000	Shares United Fruit Co. Cap. Stock (No par) @ \$57.965 per share . . . . .	869,477.29
13,970	Shares Weyerhaeuser Timber Co. Cap. Stock (Par \$25) @ \$41.996 per share . . . . .	586,683.72
3,417	Shares Wisconsin Power & Light Co. Com. Stock (Par \$10) @ \$16.75 per share plus the surrender of 17,085 rights . . . . .	57,234 75
		\$23,906,810 28
 <b>OTHERWISE ACQUIRED</b>		
20,709	Shares Chicago, Milwaukee, St. Paul & Pacific R.R. Co. Com. Stock (No par), received in exchange for 20,709 Chicago, Milwaukee, St. Paul & Pacific R.R. Voting Trust Certificates for Common Stock . . . . .	\$665,276 62
3,000	Rights El Paso Natural Gas Co., received on account of the ownership of 3,000 shares El Paso Natural Gas Co. Com. Stock (Par \$3). These rights were taken into the books @ \$14.89 per 100 and the value used to reduce the ledger price of said stock . . . . .	446.80
3,000	Rights El Paso Natural Gas Co., received on account of the ownership of 3,000 shares El Paso Natural Gas Co. Com. Stock (Par \$3). These rights were taken into the books at no value and surrendered upon subscription to 300 additional shares of said stock @ \$21.375 per share . . . . .	— 0 —
5,000	Shares International Paper Co Com. Stock (Par \$7.50), received as a dividend on 20,000 shares of said stock owned of record August 25, 1950. These shares were taken into the books at no value . . . . .	— 0 —

695.652	Shares Monsanto Chemical Co. Com. Stock (Par \$5), received through the conversion of 400 shares Monsanto Chemical Co. \$4.00 Cum. Preference Stock, Ser. B (No par), having a value of \$101.00 per share or \$40,400.00 and resulting in a price of \$58.075 per share for the common stock. ....	\$40,400 00
5,000	Rights Peoples Gas Light & Coke Co., received on account of the ownership of 5,000 shares Peoples Gas Light & Coke Co. Com. Stock (Par \$100). Of these rights 4,998 were exercised to acquire 714 additional shares of the common stock and the remaining 2 rights were taken into the books @ \$3.50 each and the value used to reduce the ledger price of the shares held. ....	7.00
3,203.45	Shares Standard Oil Co. of California Cap. Stock (No par), received as a dividend on 64,069 shares of said stock owned of record December 9, 1949. These shares were taken into the books at no value. ....	— 0 —
8,000	Shares Standard Oil Co. (New Jersey) Cap. Stock (Par \$25), received as a dividend on 600,000 shares Standard Oil Co. (Indiana) Cap. Stock (Par \$25). These shares were taken into the books at the closing price on December 4, 1950 @ \$85.50 per share and the value credited to income. .	684,000.00
6,000	Shares The Standard Oil Co. (Ohio) Com. Stock (Par \$10), received as a dividend on 300,000 shares of said stock owned of record November 15, 1950. These shares were taken into the books at no value. ....	— 0 —
17,087	Rights Wisconsin Power & Light Co., received on account of the ownership of 17,087 shares Wisconsin Power & Light Co. Com. Stock (Par \$10). Of these rights 17,085 were exercised to acquire 3,417 shares of the common stock and the remaining 2 rights were taken into the books @ \$0.21 each and the value used to reduce the ledger price of the shares held. ....	.42
		<hr/> 81,390,130.84 <hr/>

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TRANSACTIONS RELATING TO INVESTED FUNDS — *Continued*

ADDITIONS TO LEDGER VALUE

Interest increment on USA Savings Bonds, Ser. F (12 year appreciation bonds):

\$67,500 (Maturity value) due May 1, 1953..	\$1,822 50
67,500 (Maturity value) due Jan. 1, 1954. . . . .	1,755 00
67,500 (Maturity value) due July 1, 1954. . . . .	1,755 00
135,000 (Maturity value) due Jan. 1, 1955. . . . .	3,510 00
	<hr/>
	\$8,842 50
	<hr/>
	\$25,305,783 62
	<hr/> <hr/>

		TOTAL PROCEEDS	LEDGER VALUE
Sold			
\$110,000	American Telephone & Telegraph Co. 15 year Conv. Deb. 2 $\frac{3}{4}$ s/61 @ 106.935. . . . .	\$117,628 82	\$122,408 00
£35,500	Imperial Chinese Government, Hu Kuang Rys. S. F. Loan of 1911 5s/75 @ \$18.047 per £100. . . . .	6,406 79	1 00
\$39,000	Morris & Essex R.R. 1st & Ref. 3 $\frac{1}{2}$ s/2000 @ 55.189 . . . . .	21,523 77	32,272 50
20,000	Tokyo Electric Light Co., Ltd. 1st Mtg. Dollar Series 6s/53 @ 47.499	9,499.80	-- 0 --
6,000,000	USA Treasury Bonds, 2s/9/15/50-52 @ 100.031 . . . . .	6,001,875 00	6,000,000 00
4,000,000	USA Treasury Certificates of Indebtedness, Ser. H, 1- $\frac{1}{8}$ s/10/1/50 @ 99.995. . . . .	3,999,817 29	4,000,000 00
5,275	Shares American Telephone & Telegraph Co. Cap. Stock (Par \$100) @ \$150.43 per share . . . . .	793,520 37	757,876 10
10,000	Shares The Atlantic Refining Co. 3 75% Cum. Pfd. Stock (Par \$100) @ \$99.922 per share. . . . .	999,215 10	1,000,000 00



14,175	Shares Central Illinois Public Service Co. Com. Stock (Par \$10) @ \$13.88 per share. . . . .	\$196,748.97	\$170,047.56
19,051	Shares Central & South West Corp. Com. Stock (Par \$5) @ \$12.843 per share. . . . .	244,669.81	178,753.16
20,709	Shares Chicago, Milwaukee, St. Paul & Pacific R.R. Co. Com. Stock (No par) @ \$19.292 per share. . . . .	399,514.43	665,276.62
5,000	Shares Connecticut Light & Power Co. \$2.00 Cum. Pfd. Stock (No par) @ \$52.704 per share. . . . .	263,519.98	271,300.00
9,500	Shares Consolidated Edison Co. of New York \$5.00 Cum. Pfd. Stock (No par) @ \$106.907 per share. . . . .	1,015,612.98	871,625.00
2,800	Shares El Paso Natural Gas Co. Com. Stock (Par \$3) @ \$23.11 per share. . . . .	64,711.86	35,395.14
3,000	Rights El Paso Natural Gas Co. @ \$14.89 per 100. . . . .	446.80	446.80
273	Shares Indiana Gas & Water Co., Inc. Com. Stock (Par \$10) @ \$21.741 per share. . . . .	5,935.17	4,197.37
11,000	Shares International Harvester Co. 7% Cum. Pfd. Stock (Par \$100) @ \$175.732 per share. . . . .	1,933,051.80	1,265,000.00
14,175	Shares Kentucky Utilities Co. Com. Stock (Par \$10) @ \$12.134 per share. . . . .	172,004.38	145,584.35
652/1000ths	of one share Monsanto Chemical Co. Com. Stock (Par \$5) @ \$57.50 per share. . . . .	37.49	37.87
2	Rights Peoples Gas Light & Coke Co. @ \$3.50 each. . . . .	7.00	7.00
2,000	Shares Philadelphia Electric Co. 3.80% Pfd. Stock (Par \$100) @ \$104.765 per share. . . . .	209,530.27	205,400.00
4,000	Shares Philip Morris & Co., Ltd. Inc. 4% Cum. Pfd. Stock (Par \$100) @ \$103.736 per share. . . . .	414,945.92	421,400.00
9,113	Shares Public Service Co. of Indiana Com. Stock (No par) @ \$25.145 per share. . . . .	229,143.21	187,703.59

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TRANSACTIONS RELATING TO INVESTED FUNDS — *Continued*

		TOTAL PROCEEDS	LEDGER VALUE
42,843	Shares Standard Oil Co. (Indiana) Cap. Stock (Par \$25) @ \$47.441 per share.....	\$2,032,512.47	\$1,238,192.07
27,022	Shares Standard Oil Co. (New Jersey) Cap. Stock (Par \$25) @ \$77.009 per share.....	2,080,937.36	779,529.33
52,920	Shares Standard Oil Co. (Ohio) Com. Stock (Par \$10) @ \$28.012 per share.....	1,482,404.38	466,568.19
6,600	Shares United States Steel Corp. 7% Cum. Pfd. Stock (Par \$100) @ \$144.436 per share.....	953,279.54	883,462.50
10,504	Shares Wisconsin Power & Light Co. Com. Stock (Par \$10) @ \$13.88 per share.....	145,795.49	140,927.77
2	Rights Wisconsin Power & Light Co. @ \$0.21 each.....	.42	.42
		<hr/>	<hr/>
		\$23,794,296.67	\$19,843,412.34
		<hr/>	<hr/>
<b>EXCHANGED OR CONVERTED</b>			
20,709	Shares Chicago, Milwaukee, St. Paul & Pacific R.R. Voting Trust Certificates for Common Shares, exchanged for 20,709 shares Chicago, Milwaukee, St. Paul & Pacific R.R. Co. Com. Stock (No par).....	\$665,276.62	\$665,276.62
400	Shares Monsanto Chemical Co. \$4.00 Cum. Preference Stock, Ser. B (No par), surrendered for conversion into 695.652 shares Monsanto Chemical Co. Com. Stock (Par \$5).....	40,400.00	40,400.00
		<hr/>	<hr/>
		\$705,676.62	\$705,676.62
		<hr/>	<hr/>

**SURRENDERED UPON SUBSCRIPTION**

3,000	Rights El Paso Natural Gas Co. upon subscription to 300 shares El Paso Natural Gas Co. Com. Stock (Par \$3)	\$	— 0 —	\$	0 —
4,998	Rights Peoples Gas Light & Coke Co. upon subscription to 714 shares Peoples Gas Light & Coke Co. Com. Stock (Par \$100)		— 0 —		— 0 —
17,085	Rights Wisconsin Power & Light Co. upon subscription to 3,417 shares Wisconsin Power & Light Co. Com. Stock (Par \$10)		— 0 —		— 0 —
		\$	<u>— 0 —</u>	\$	<u>— 0 —</u>

**LEDGER VALUE REDUCED**

Ledger value of \$3,000,000 USA Treasury Bonds 2½s/6/15/67-72, reduced in accordance with Finance Committee minute #5021, dated June 14, 1950, directing that the premium paid upon purchase of these bonds be charged to surplus	\$42,686 25	\$42,656 25
Ledger value of \$4,000,000 USA Treasury Bonds 2½s/12/15/67-72, reduced in accordance with Finance Committee minute #5026, dated August 23, 1950, directing that the premium paid upon purchase of these bonds be charged to surplus	56,875 00	56,875 00
Ledger value of 3,000 shares El Paso Natural Gas Co. Com. Stock (Par \$3), reduced by the value of 3,000 rights which were received on account of the ownership thereof	446 80	446 80
Ledger value of 5,000 shares Peoples Gas Light & Coke Co. Com. Stock (Par \$100), reduced by the value of 2 rights which were received on account of the ownership thereof (5,000 rights were received, 4,998 of which were exercised to acquire 714 additional shares of the common stock)	7.00	7 00
Ledger value of 17,087 shares Wisconsin Power & Light Co. Com. Stock (Par \$10), reduced by the value of 2 rights which were received on account of the ownership thereof (17,087 rights were received, 17,085 of which were exercised to acquire 3,417 additional shares of the common stock)	42	42
	<u>\$99,985 47</u>	<u>\$99,985 47</u>
	<u>\$24,599,958 76</u>	<u>\$20,649,074. 43</u>

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TRANSACTIONS RELATING TO INVESTED FUNDS — *Continued*

## AMORTIZATION OF PREMIUMS PAID ON PURCHASE OF SECURITIES

\$6,200,000 USA Treasury Bonds, 2 $\frac{1}{4}$ %/12/15/59-62.....	\$2,688.68
3,500,000 USA Treasury Bonds 2 $\frac{1}{8}$ %/6/15/67-72.....	653.12
	<u>\$3,341.80</u>

## RECONCILIATION

Ledger value of securities, December 31, 1949.....		\$147,588,489.96
Purchased.....	\$23,906,810.28	
Otherwise acquired.....	1,390,130.84	
Additions to ledger value.....	8,842.50	25,305,783.62
		<u>\$172,894,273.58</u>
Sold.....	\$19,843,412.34	
Exchanged or converted.....	705,676.62	
Ledger value reduced.....	99,985.47	
Amortization.....	3,341.80	20,652,416.23
		<u>\$152,241,857.35</u>
Ledger value of securities, December 31, 1950..		

SCHEDULE OF SECURITIES ON DECEMBER 31, 1950

BONDS

NAME	PAR	LEDGER VALUE		MARKET VALUE	
		PRICE	TOTAL	PRICE	TOTAL
Imperial Chinese Government Hu Kuang Rys. S. F. Loan of 1911 5s, June 15, 1975.....	£153,500	\$-0-	\$	83.25	\$24,943.75
Standard Oil Co. (New Jersey) 25 year Deb. 2 $\frac{3}{8}$ s, May 15, 1971.....	\$8,500,000	98.	8,329,995.00	96.25	8,181,250.00
United States of America Treasury Bonds:					
<i>Int.</i> <i>Dated</i> <i>Due</i>					
2% — Sept. 15, 1943 — Sept. 15, 1951-53.....	5,000,000	100.	5,000,000.00	100.3125	5,015,625.00
2% — June 26, 1944 — June 15, 1952-54.....	4,500,000	100.	4,500,000.00	100.5625	4,525,312.50
2% — Dec. 1, 1944 — Dec. 15, 1952-54.....	6,600,000	100.	6,600,000.00	100.6875	6,645,375.00
2 $\frac{1}{4}$ % — June 1, 1945 — June 15, 1959-62.....	7,000,000	100.	7,000,000.00	100.6875	7,048,125.00
2 $\frac{1}{4}$ % — Nov. 15, 1945 — Dec. 15, 1959-62.....	6,200,000	100.39	6,224,198.06	100.5625	6,234,875.00
2 $\frac{3}{8}$ % — May 5, 1942 — June 15, 1962-67.....	6,000,000	100.	6,000,000.00	102.65625	6,159,375.00
2 $\frac{1}{2}$ % — June 1, 1945 — June 15, 1967-72.....	6,500,000	100.166	6,510,775.75	100.6875	6,544,687.50
2 $\frac{1}{2}$ % — Nov. 15, 1945 — Dec. 15, 1967-72.....	6,000,000	100.	6,000,000.00	100.6875	6,041,250.00
United States of America Treasury Notes 1 $\frac{1}{4}$ % Ser. D, dated June 1, 1950, due July 1, 1951.....	3,000,000	99.963	2,998,894.83	99.902	2,997,060.00
United States of America Savings Bonds 2 $\frac{1}{2}$ % Ser. G, dated Oct. 1, 1950, due Oct. 1, 1962.....	1,000,000	100.	1,000,000.00	100.	1,000,000.00

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BONDS — Continued

United States of America Savings Bonds, Ser. F (12 year appreciation bonds):					
Due May 1, 1953 — Maturity value . . . . .	\$67,500	\$91.4	\$61,695.00	\$91.4	\$61,695.00
Jan. 1, 1954 — Maturity value . . . . .	67,500	88.7	59,872.50	88.7	59,872.50
July 1, 1954 — Maturity value . . . . .	67,500	87.4	58,995.00	87.4	58,995.00
Jan. 1, 1955 — Maturity value . . . . .	135,000	86.1	116,235.00	86.1	116,235.00
<b>TOTAL BONDS . . . . .</b>			<b>\$60,460,661.14</b>		<b>\$60,714,676.25</b>

PREFERRED STOCKS

NAME	SHARES	LEDGER VALUE		MARKET VALUE	
		PRICE	TOTAL	PRICE	TOTAL
Chicago City & Connecting Rys. Participation Certificates (No par) (C/D) . . . . .	17,530	\$	\$1.00	\$—0—	\$—0—
International Harvester Co. 7% Cum. (Par \$100) . . . . .	4,000	115.00	460,000.00	176.00	704,000.00
Monsanto Chemical Co. \$4. Cum. Ser. B (No par) . . . . .	600	101.00	60,600.00	129.50	77,700.00
Tennessee Gas Transmission Co. 4.25% Cum. (Par \$100) . . . . .	5,000	96.675	483,372.50	94.00	470,000.00
United States Rubber Co. 8% Non-cum. 1st (Par \$100) . . . . .	1,500	150.892	226,337.50	134.00	201,000.00
<b>TOTAL PREFERRED STOCKS</b>			<b>\$1,230,311.00</b>		<b>\$1,452,700.00</b>

## COMMON STOCKS

NAME	SHARES	LEDGER VALUE		MARKET VALUE	
		PRICE	TOTAL	PRICE	TOTAL
Aluminum Company of America (No par) . . . . .	8,000	\$52 222	\$417,757 05	\$74 25	\$594,000.00
American Gas & Electric Co. (Par \$10)	15,000	54 062	810,931 59	52 25	783,750 00
American Telephone & Telegraph Co. Cap. (Par \$100)	32,500	143 673	4,669,378 81	151 00	4,907,500 00
The Buckeye Pipe Line Co. Cap. (No par) . . . . .	107,763	11.791	1,270,627 60	13 375	1,441,330 13
Central Illinois Public Service Co. (Par \$10)	20,000	11.996	239,926 01	15 125	302,500.00
Central & South West Corporation (Par \$5)	49,300	9 383	462,575 77	13 25	653,225.00
Chicago City & Connecting Rys. Participation Certificates (No par) . . . . .	10,518		1.00	— 0 —	— 0 —
Consolidated Natural Gas Co. Cap. (Par \$15) . . . . .	133,174	29.132	3,879,682 67	46 50	6,192,591 00
Continental Insurance Co. Cap. (Par \$10) . . . . .	10,000	65 597	655,965 37	70 75	707,500 00
Continental Oil Co. (Delaware) Cap. (Par \$5) . . . . .	60,664	11 164	677,258 83	94 00	5,702,416 00
Dow Chemical Co. (Par \$15) . . . . .	4,000	55.015	220,058 84	78 875	315,500 00
Du Pont, (E. I.) de Nemours & Co. (Par \$5) . . . . .	4,000	61.612	246,447 68	84 00	336,000 00
El Paso Natural Gas Co. (Par \$3) . . . . .	500	12 64	6,320.56	23 75	11,875 00
Fireman's Fund Insurance Co. Cap. (Par \$5) . . . . .	8,442	57.4698	485,160 30	57 50	485,415 00
First National Bank of Chicago (Par \$100) . . . . .	5,000	231.876	1,159,379 35	248 00	1,240,000 00
General Mills, Inc. (No par) . . . . .	4,000	55 515	222,060.92	60 50	242,000 00
Hartford Fire Insurance Co. Cap. (Par \$10) . . . . .	15,000	130 075	1,951,131.15	136 00	2,040,000 00
Houston Lighting & Power Co. (No par) . . . . .	5,000	47.873	239,362.74	54 50	272,500 00
Illinois Power Co. (No par) . . . . .	7,000	37 743	264,198 59	34.75	243,250 00
International Nickel Co. of Canada, Ltd. (No par).	54,000	40 818	2,204,163 04	36 25	1,957,500 00
International Paper Co. (Par \$7.50) . . . . .	41,200	39.143	1,612,675 40	52 50	2,163,000 00
Interstate Natural Gas Co., Inc. Cap. (No par) . . . . .	33,765	14 959	505,106.25	33.25	1,122,686 25
Kennecott Copper Corporation Cap. (No par) . . . . .	35,100	58.539	2,054,731.03	75 125	2,636,887 50
Kentucky Utilities Co. (Par \$10) . . . . .	20,000	10 271	205,410 00	13 50	270,000 00

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COMMON STOCKS — *Concluded*

NAME	SHARES	LEDGER VALUE		MARKET VALUE	
		PRICE	TOTAL	PRICE	TOTAL
Monsanto Chemical Co. (Par \$5) . . . . .	5,000	\$72 423	\$362,115 61	\$74 625	\$373,125 00
Montgomery Ward & Co., Inc. (No par) . . . . .	4,000	55 834	223,337 11	65.00	260,000 00
National Fuel Gas Co. Cap. (No par) . . . . .	381,018	7 75	2,952,889.50	11 625	4,429,334 25
The North American Co. (Par \$10) . . . . .	12,000	19 204	230,453 24	17.75	213,000 00
The Ohio Oil Co. (No par) . . . . .	94,684	32.735	3,099,446.50	46.125	4,367,299 50
Peoples Gas Light & Coke Co. Cap. (Par \$100) . . . . .	6,000	125 076	750,453.34	115 00	690,000 00
Phelps Dodge Corporation Cap. (Par \$25) . . . . .	37,600	52.717	1,982,151.40	65.50	2,462,800.00
Standard Oil Co. of California Cap. (No par) . . . . .	67,300	15 681	1,055,326 36	91.875	6,183,187 50
Standard Oil Co. (Indiana) Cap. (Par \$25) . . . . .	600,000	28 901	17,340,411 26	60.375	36,225,000.00
Standard Oil Co. (New Jersey) Cap. (Par \$25) . . . . .	1,033,000	29 287	30,253,149 51	91 75	94,777,750 00
Standard Oil Co. (Ohio) (Par \$10) . . . . .	306,000	8 644	2,644,944 35	35 00	10,710,000 00
Texas Gulf Sulphur Co. Cap. (No par) . . . . .	24,500	81.611	1,999,481.69	95 00	2,327,500 00
Union Tank Car Co. Cap. (No par) . . . . .	240,000	6 692	1,606,087.97	37.50	9,000,000 00
United Fruit Co. Cap. (No par) . . . . .	15,000	57.965	869,477.29	59.50	892,500 00
Weyerhaeuser Timber Co. Cap. (Par \$25) . . . . .	13,970	41.996	586,683.72	61.00	852,170 00
Wisconsin Power & Light Co. (Par \$10) . . . . .	10,000	13 417	134,165 81	15 875	158,750 00
<b>TOTAL COMMON STOCKS . . . . .</b>			<b>\$90,550,885 21</b>		<b>\$208,543,842 13</b>

380 THE ROCKEFELLER FOUNDATION

SUMMARY	LEDGER VALUE	MARKET VALUE
Bonds . . . . .	\$60,460,661.14	\$60,714,676 25
Preferred Stocks . . . . .	1,230,311 00	1,452,700.00
Common Stocks . . . . .	90,550,885 21	208,543,842.13
	<u>\$152,241,857.35</u>	<u>\$270,711,218.38</u>



# HASKINS & SELLS

CERTIFIED PUBLIC ACCOUNTANTS

250 PARK AVENUE, NEW YORK 17

## *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, 1950 and the related statements of Principal Fund and Funds Available for Commitment 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.

In accordance with the policy of the Foundation, no effect has been given in the accompanying statements to accrued income not received, nor to expenditures made from advance accounts not reported in time to be recorded when the books were closed, as of December 31, 1950.

In our opinion, with the foregoing explanation the accompanying balance sheet and statements of Principal Fund and Funds Available for Commitment present fairly the financial position of the Foundation at December 31, 1950 and the results of its operations for the year then ended, in conformity with generally accepted accounting principles.

HASKINS & SELLS

New York, March 26, 1951



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