

The  
Rockefeller Foundation

Annual Report  
1946

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## CONTENTS

FOREWORD	xi
PRESIDENT'S REVIEW	5
REPORT OF THE SECRETARY	50
REPORT OF THE WORK OF THE INTERNATIONAL HEALTH DIVISION	55
REPORT OF WORK IN THE MEDICAL SCIENCES	95
REPORT OF WORK IN THE NATURAL SCIENCES	129
REPORT OF WORK IN THE SOCIAL SCIENCES	177
REPORT OF WORK IN THE HUMANITIES	223
OTHER APPROPRIATIONS	255
REPORT OF THE TREASURER	267
INDEX	343



## ILLUSTRATIONS

	<i>Page</i>
<i>Rural health survey, Araraquara, State of São Paulo, Brazil</i>	71
<i>College of Nursing, New Delhi, India</i>	72
<i>Collecting dust samples, Bureau of Industrial Hygiene, Manitoba</i>	72
<i>Diagnostic and laboratory work, part of the service provided by the Health Insurance Plan of Greater New York</i>	81
<i>School nutrition program, Concord, North Carolina</i>	82
<i>Study of mental hygiene problems in a Well Baby Clinic, Johns Hopkins University</i>	82
<i>Child Guidance Unit, Tavistock Clinic, England</i>	115
<i>New laboratory building, National Institute of Cardiology, Mexico City</i>	115
<i>Commission to study medical and public health situation in China</i>	116
<i>Erecting the 200-inch telescope on Mount Palomar</i>	155
<i>Visit of President Miguel Aleman to cooperative agriculture project, Chapingo, Mexico</i>	156
<i>Library, Institute of Economics and History, Copenhagen</i>	197
<i>Hoover Library on War, Revolution and Peace, Stanford University</i>	239
<i>League of Nations Room, Woodrow Wilson Foundation</i>	240

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To THE TRUSTEES OF THE ROCKEFELLER  
FOUNDATION

GENTLEMEN:

I have the honor to transmit herewith a general review of the work of The Rockefeller Foundation for the period January 1, 1946, to December 31, 1946, together with detailed reports of the Secretary and the Treasurer of the Foundation, the Director of the International Health Division, and the Directors of the Medical Sciences, the Natural Sciences, the Social Sciences, and the Humanities.

Respectfully yours,  
RAYMOND B. FOSDICK  
*President*



THE  
PRESIDENT'S REVIEW  
FOR 1946



## PRESIDENT'S REVIEW

THE YEAR IN BRIEF	5
THE ISOLATION OF SILENCE	7
TYING THE THREADS TOGETHER AGAIN	9
THE DISTRIBUTION OF MEDICAL CARE	13
THE CAMPAIGN AGAINST MOSQUITOES	16
THE MAGIC-WAND THEORY OF MEDICAL ADVANCE	21
THE WAR'S EFFECT ON SCIENCE	23
THE TELESCOPE ON MOUNT PALOMAR	25
TELESCOPES ARE NOT ENOUGH	28
WORK IN THE SOCIAL SCIENCES	32
OUR AMERICAN HERITAGE	35
THE MEETING OF WEST AND EAST	37
COLLEGES IN CHINA	40
INVESTING IN MEN	41
THE GENERAL EDUCATION BOARD	44
APPLICATIONS WHICH WERE DECLINED DURING 1946	47



## PRESIDENT'S REVIEW

### THE YEAR IN BRIEF

DURING 1946 the appropriations of The Rockefeller Foundation amounted to \$19,481,576. This figure, representing an increase of approximately \$8,000,000 over the total for 1945, includes a grant of \$7,500,000 to the General Education Board. This grant is discussed on page 44 of this Review. The income of the Foundation from investments during the year was \$8,492,732. This income was supplemented by a balance of \$590,697 remaining from the previous year and by a bequest under the will of Robert Marsh, Jr., amounting to \$36,764. In order to meet the appropriations made during the year it was necessary to draw from the Principal Fund to the amount of \$9,883,000.

Ever since the Foundation was created in 1913 the Trustees have not hesitated to appropriate from the Principal Fund for projects of challenging importance. In the years since 1913 sums totaling \$105,317,128 have thus been drawn from capital, and \$288,937,305 has been appropriated from income. The Principal Fund as of December 31, 1946, amounted to \$138,005,205.

The appropriations for 1946, excluding the grant to the General Education Board, were distributed for the most part in five major fields, roughly as follows:

Public health	\$2,450,000
Medical sciences	1,396,000
Natural sciences	2,510,000
Social sciences	2,634,000
Humanities	1,304,000

A detailed statement of the appropriations made in 1946 appears at the conclusion of this report, beginning on page 269. Of the money appropriated during the year, excluding the sum to the General Education Board, 56 per cent was for work in the United States and 44 per cent for work in other countries. This contrasts with 64 per cent for work in the United States in 1945 and 36 per cent for work abroad.

The year 1946 was marked by the gradual reopening of former fields of Foundation activity. Exclusive of public health work, which is carried on by Foundation staff members all over the world, there were 48 major grants in 1946 for work in foreign countries, and 35 of these were for use in Europe. The year before, there were 23 grants for work abroad, 18 of which were in support of European activities. Some of these grants were small, intended to help institutions through a period of post-war adjustment and provide a chance for formulating new programs and training new men. The largest appropriations for work outside the United States included \$500,000 for restoring and rehabilitating colleges and universities in China, \$250,000 in support of the experimental agriculture program in Mexico, \$150,000 to the Eidgenössische Technische Hochschule in Switzerland for research on the organic chemistry of natural products, \$162,000 for additional research faculty in the social sciences at Nuffield College, University of Oxford, and \$350,000 to the Centre National de la Recherche

Scientifique for equipping 35 leading natural science research laboratories in France and for conferences of natural scientists.

### THE ISOLATION OF SILENCE

War not only destroys, it isolates; and isolation means intellectual stagnation. The flow of ideas across boundary lines, the free exchange of periodicals and books, the cross-fertilization of minds working in the same scientific and cultural fields — these are among the tragic losses of war. "Speech is civilization itself," says Thomas Mann. "The word, even the most contradictory word, preserves contact — it is silence which isolates."

It is difficult to assess what has been lost in these years of silence and intellectual darkness. The humanists of France, whose leadership gave Western Europe its cultural prestige, were driven underground, cut off from each other and from the rest of the world. The great Swiss groups in organic chemistry carried on their activities behind impenetrable walls. We cannot know what was in the tortured minds of the Polish mathematicians. Still less do we know the thoughts of the great topologists and analysts of the Russian mathematical school. Of the Hungarian biologists we have little information — either as to what they did or are now doing. Biochemistry and physiology were able to maintain some degree of momentum here in the United States, but they lacked the stimulation which previously had come from the brilliant group of biochemists and physiologists of Denmark and Sweden. Mathematics and geophysics are well developed in Finland, but the voices of their scientists were not audible to the rest of the world. Equally silent were the laboratories in Paris and Oslo and Utrecht and Prague. From Germany,

where, as we are just now learning, a few scientists were able to continue their work in pure research, little has been heard.

This enforced silence has brought losses which are in a sense irreparable — irreparable because they represent lost opportunities and lost time. The list of such losses is all the more formidable because it is blank. It is the list of unknown goals which otherwise might have been reached. It has on it, in invisible ink, the record of the advance which might have occurred in the cancer problem, had all the imaginative sterol chemists of the world known, in dependable detail, the work which was going forward at the Memorial Hospital in New York. It contains the results which might have flowed out of an evening's conversation between some group of English, American, French, Belgian and Swedish scientists, discussing the problem of protein structure; or what might have happened in literature or the arts or philosophy if the humanists of Western Europe had been free to speak with awareness and imagination to the rest of the world. Invisible on this ghostly list are the beginnings of great new discoveries in genetics, in enzyme chemistry, in nutrition. Perhaps a major entry on the list is the record of what might have been accomplished if all the energy and knowledge and unselfish cooperation which were devoted to making the atomic bomb had been applied instead to some of the great basic problems of biology and medicine.

But this belongs to the past. This kind of result is what the insanity of war leads to. It is the present that we must deal with and the future that we must face. The immediate task of the present is the reestablishment, across all boundary lines, of the scientific and cultural ties that have been broken. The challenge of the future is to make this world *one* world — a world truly free to

engage in common and constructive intellectual efforts that will serve the welfare of mankind everywhere.

#### TYING THE THREADS TOGETHER AGAIN

In 1946 representatives of The Rockefeller Foundation visited every country in Europe except Russia, Hungary, Bulgaria, Rumania and Greece. It is hoped that in 1947 arrangements can be made by which contacts with these latter countries will be established.

In spite of the fact that Western Europe is staggering under the greatest catastrophe in its history, there are signs everywhere of intellectual resurgence. Some news commentators have reported that Europe as a cultural entity is wounded beyond hope of recovery, but such pessimistic prognostications are not borne out by the reports of the Foundation's representatives. There is an intellectual vitality in Europe which is too deeply rooted to die easily. In terms of brains and skill, of human values and creative talent, Europe is still perhaps the world's greatest powerhouse. While there is no hope of immediate recovery, and years must elapse before the physical and spiritual damage of this war can be erased, Europe's chapter in the history of civilization is by no means finished, nor have her unique contributions to the advance of mankind been terminated.

Ever since V-J Day the Foundation has made a determined effort to see what could be done to get research started again and to tie together the threads that connect Europe's intellectual life with the rest of the world. All five divisions of the Foundation have participated in this effort, i.e., Natural Sciences, Medical Sciences, Humanities, Social Sciences and Public Health. The work, as has been indicated, has had two purposes: first, by grants which necessarily had to be modest in

character, to provide equipment or support to a few of the universities, libraries and research centers; and second, to create, as far as physical conditions made possible, methods of communication by which these institutions, isolated by the war, could establish contacts with each other and with the rest of the world.

The list of appropriations at the end of this report gives in detail the grants made in 1946, and it is not necessary to do more than call attention to a few of them that bear on this point. In the natural sciences, for example, grants for fundamental research in the total amount of approximately \$350,000 were made to the universities of Upsala, Oslo, Utrecht, Leeds and Oxford, the Karolinska Institute in Sweden, the Carlsberg Foundation in Denmark and the Eidgenössische Technische Hochschule in Switzerland. The sum of \$250,000 was given to the Centre National de la Recherche Scientifique in Paris for equipment and supplies in 35 of the leading research laboratories of France. A grant of \$100,000 was made to this same organization for a series of international conferences in such fields as chemical genetics, protein structure, enzyme chemistry and cellular physiology. Another appropriation made possible the meeting of the International Astronomical Union in Copenhagen, to which delegates came from all over the world. Similarly, \$50,000 was appropriated to the National Academy of Sciences in Washington for an international gathering that brought together in October 1946, in a conference in the United States, scientists from Italy, England, France, Sweden, Denmark, Belgium, Czechoslovakia, Switzerland, Hungary, Holland, Norway, Rumania, Poland and Finland. Russian delegates were invited but were unable to attend.

It is important that Russian scientific thinking should

be brought into the international stream. A grant toward this general goal was therefore made to the American-Soviet Science Society, which is a liaison agency serving the interests of American scientists by helping to keep them informed of scientific developments in the Soviet Union, and aiding Soviet scientists in their relations with their fellow scientists in the United States, through the interchange of periodicals and publications.

In the medical sciences a grant of \$250,000 was made late in 1945 to the Royal Society of Medicine in England to set up a Central Medical Library Bureau, but the project did not get under way until well into 1946. The function of this new bureau is to make a union catalogue of medical periodical literature published during the war years, and to supply the medical libraries of Europe with microfilm copies of outstanding items. Twenty microfilm machines or readers are already in the hands of participating libraries, with a larger number on order; and microfilming is proceeding at the rate of about 5,000 pages a day.

In 1946 a series of appropriations in the medical sciences, totaling roughly two hundred thousand dollars, was made to support basic research and teaching in the universities of Zagreb, Zurich, Brussels, Cambridge and London. Another grant made it possible to publish in English and French, for wide distribution, many of the excellent studies in clinical and laboratory work produced in France since 1939.

Appropriations in the field of the humanities in the last few years have included extensive grants to the American Library Association for the selection and purchase of scholarly journals and books for European libraries and research centers destroyed by the war. The books in this category are for the most part reference

books, with about 500 titles in each set. The scholarly journals number approximately 350 and cover the fields of the medical, natural and social sciences, as well as the humanities. The idea in supplying them broadly where they are needed has been to fill the gaps in Europe's knowledge of what has been happening in the field of scholarship in the rest of the world.

Other appropriations for books have been made to the National Central Library of London for the destroyed collections of Great Britain, and in 1946 the sum of \$50,000 was given to help in the purchase of books for the ten leading libraries of Poland, whose losses in the war averaged 66 per cent, or a total of nearly 1,500,000 books.

In 1946, also, a grant of \$33,000 was given to the University of Oslo for the development of its work in the humanities.

In the social sciences, grants in excess of half a million dollars were made in 1946 to British and Continental institutions for research in international relations and economics. These are listed later in this report. A special appropriation of \$55,000 made possible the purchase and distribution in European libraries of some 40 sets of from 300 to 350 books each, representing the more recent publications in the social sciences. This was in addition to the items in this category already mentioned.

In the field of public health, emergency grants for equipment and supplies in the total amount of approximately \$230,000 were made in 1946 to institutes of hygiene and other health activities in countries like Poland, Holland, Norway and Yugoslavia. In addition, complete sets of a score of public health journals for the years 1939-1946 inclusive were distributed to 23 institutes of hygiene located in 17 different countries all the way from Turkey to Holland.

Fellowships and travel grants constitute, of course, an excellent method of tying together the intellectual life of Europe with the rest of the world. Travel difficulties have impeded the process, but since V-J Day the Foundation has been able to award 240 fellowships and travel grants to Europeans, distributed as follows: Public Health 84; Medical Sciences 77; Natural Sciences 21; Humanities 26; Social Sciences 32. Of this total, 212 came to the United States and Canada, while 28 went to various countries in Europe. The number from each country was as follows: Belgium 15, Czechoslovakia 23, Denmark 31, Finland 12, France 16, Germany 1, Great Britain 40, Greece 2, Italy 1, Netherlands 19, Norway 35, Poland 11, Rumania 1, Sweden 15, Switzerland 3, Yugoslavia 15.

Balanced against the vast needs of Europe, these activities, of course, scarcely make a beginning in solving the problem. Private funds are utterly inadequate in meeting the situation. One of the promising developments of 1946 was the successful launching of UNESCO, under the United Nations. With imagination and leadership, and supported by ample funds which only governments are in a position to provide, this organization may play the leading role in reestablishing the intellectual contacts of the world.

#### THE DISTRIBUTION OF MEDICAL CARE

One of the troublesome problems of our generation is how we are to make available to the entire population the preventive, diagnostic and curative services of modern medicine. The lag between the brilliant development of medicine as a technology and its broad distribution to the public has in recent years become increasingly evident. The art of medicine has forged far ahead of the organization by which it is made widely available. The

statistics of the draft in this last war cannot be explained except on the basis that a large portion of our population receives insufficient and inadequate medical care.

Health, like education, is not only an individual asset; it is a national asset as well. The idea of free education to serve all the people is now so completely accepted everywhere that we overlook the fact that to our forefathers it was a revolutionary concept. Similarly, our generation has had to adjust its thinking about the distribution of medical care; and we have traveled a long road in arriving at the conclusion that some way must be found by which the burden of illness can be equitably spread. The constitution of the new World Health Organization, established under the United Nations, states the matter in words with which most of us would probably agree: "The enjoyment of the highest attainable standard of health is one of the fundamental rights of every human being without distinction of race, religion, political belief, economic or social condition."

This ultimate aim seems to be almost universally accepted. Differences of opinion arise as to how the aim is to be achieved. Increasing attention is being given to arrangements whereby physicians may make available to their patients all the benefits of an art which is so complex that no single practitioner can master it all or keep up with its rapid progress. Much more thought and careful application of planning will be necessary before interchange among individual physicians, hospitals and medical schools can bring to every patient the advantages of combined effort, without sacrificing the assets of close doctor-patient relationships.

Perhaps the controlling barrier to the provision of adequate medical care in recent times has been economic. Illness is unpredictable, and its economic burden

is also unpredictable. A family can ordinarily determine how much of its income will go for rent, clothing or food, but no one can decide in advance what a year's cost of sickness will be. The removal of that barrier seems to require either a compulsory or a voluntary system of insurance on an over-all community basis — some pre-payment device that would bring, in Winston Churchill's words, "the magic of the averages to the rescue of the millions." In Great Britain, Australia, New Zealand and parts of Canada, for example, and in the Scandinavian countries as well, the governments themselves have assumed the responsibility, and the costs of medical care are a charge against government budgets. Here in the United States the large size of the country and a traditional interest in utilizing local initiative have led to a variety of experiments based on the principle of voluntary insurance, but it cannot be said that any one of them thus far fully answers the need.

For a number of years The Rockefeller Foundation has been interested in the development of this problem. It financed the comprehensive study on the cost of medical care that was undertaken some 15 years ago; and more recently it has contributed to studies and experiments of several organizations, including the Committee on Research in Medical Economics, the Group Health Cooperative (in New York City), the Medical Administration Service and the Bingham Associates in Massachusetts.

In 1946 the Foundation underwrote to the extent of \$250,000 the Health Insurance Plan for Greater New York. This project, known as the HIP, is preparing to conduct a program of voluntary health insurance in the New York City area for employed persons earning less than \$5,000 a year, together with their dependents. Al-

though the provision may be later modified, enrollment is confined to employee groups, with employers contributing at least 50 per cent to cover the employees of their companies. At the moment the HIP is one of the most comprehensive plans for medical service in the country, providing preventive, diagnostic and therapeutic aid which includes laboratory work, X-ray, physical therapy, hospitalization and visiting nurse service at home. The participation of the City of New York and of the United Nations, which have undertaken to join the plan for the benefit of their employees, immediately guarantees that the program will start on a large and representative scale. The presence of several first-class medical schools and teaching hospitals in the New York area offers the opportunity for integrating medical education with a thoroughly modern plan for medical care.

Experiments like the HIP are needed in this period of adjustment between old and new concepts. Not only will these experiments serve to train administrative personnel, but they will throw light on many technical questions relating to group practice, about which we now know far too little, as well as on methods and objectives of medical education. The attainment of an adequate system of medical care is bound to be an evolutionary process which will require study and experimentation over a period of years. It will require open-mindedness, too, and the realization that conceptions of social justice change from generation to generation. Stagnation and death await ideas and social arrangements which have lost their power to grow.

### THE CAMPAIGN AGAINST MOSQUITOES

For centuries malaria has thrived on the chaos of war. One of the bitterest series of battles of World War II

was fought over an area whose contact with malaria goes back to immemorial times. From the days of Cicero and Virgil to the latter part of the nineteenth century, literature and history have furnished constant references to the deadliness of the "Roman Airs." Even as late as 1887, over 20,000 people a year died in Italy of this disease.

With the discovery of the malaria parasite and its vector, the *Anopheles* mosquito, came the long-awaited possibility of freedom from malaria. In 1924 The Rockefeller Foundation, in collaboration with the Italian Health Department, began a demonstration and practical application of scientific principles of malaria control, including and emphasizing an attack on the mosquito vector. Malaria morbidity rates in 1939 had dropped to almost one eighth of what they were in 1924.

A large factor in the reduction of malaria in Italy since 1887 has been the great amount of intelligent land reclamation. Work in the Tiber Delta was begun by the Italian Government between 1885 and 1890, but it was not until after World War I that extensive agricultural drainage and colonization were seriously undertaken. Within a few years, brush, forests and swamps were replaced by farms which supported large herds of cattle, extensive vineyards and market gardens. Modern villages made their appearance, and excellent highways connected every farm with its market center.

But World War II again brought a setback in the struggle against malaria, due to the systematic destruction by the German Army of the great land-reclamation projects. In some areas, such as the plain surrounding Rome, the appearance of the countryside when the Germans were driven back resembled that of 1880 before the earliest advances in land reclamation had been

made. The smashing of pumps, the blocking and mining of canals, and the deliberate diversion of sea and river water tremendously increased the breeding of *Anopheles* malaria mosquitoes, while the customary application of larvicides was rendered hazardous if not impossible.

In the whole of Italy the incidence of malaria in 1944 was five or six times as great as before the war. Indeed, in Littoria Province, south of Rome, malaria rates were 55 times their normal prewar figure.

At the invitation of the Surgeon General of the Mediterranean Theater of Operations of the United States Army, and of the Allied Control Commission for Italy, members of The Rockefeller Foundation Health Commission organized a Malaria Control Demonstration Unit to undertake studies of the use of DDT against a particular type of house-infesting mosquito: the *Anopheles labranchiae*, a malaria vector. Initial studies were made in the region near Naples, with results that were promising enough to warrant a larger and more extensive program in the Campagna di Roma on both sides of the Tiber River. The Naples experience had shown that spraying of buildings was most effective when DDT dissolved in kerosene was used. Armed with knapsack sprayers, teams of workers borrowed from the Hygiene and Health Department for the Commune of Rome systematically covered a 120-square-mile area, spraying the walls and ceilings of every room in every building, from large apartment houses to rabbit hutches. Marshy areas were also sprayed by Army planes with tanks of DDT or Paris green mounted in the bomb-bays.

Weekly inspections for mosquito larvae and adults were made for almost a full year to determine the effectiveness of the measures taken. How effective they were is illustrated by the statement of a member of the

Health Commission team: "The total catch of adults for the 120-square-mile area by our inspectors for the season probably does not equal the number formerly found in one day in one good-sized pigsty." The only new case of malaria infection discovered during the last summer season occurred in a three-month-old infant whose mother was said to have suffered a relapse at the time the baby was born. Thus, it has been shown that where *A. labranchiae* is the only vector, malaria can be controlled through a single application of DDT once a year.

Three times before in the history of the Roman Campagna the abandonment of hydraulic works due to war and the consequent cessation of agriculture brought on a widespread plague of malaria. Each time, two centuries were needed to bring the area back to a normal state of health. The fourth time that war devastated this area, it took one thorough application of DDT to reduce the danger of malaria infection almost to zero.

While the malaria mosquito in Italy is being eliminated, its cousins, the yellow fever mosquitoes in Africa, are likewise under attack. In the Dark Continent, campaigns are still in the reconnaissance stage. This Review for 1943 reported the reopening of a laboratory in Lagos, Nigeria, to serve as a distribution center for yellow fever vaccine, to supplement yellow fever research in the Foundation's Entebbe laboratory in the Uganda area in Eastern Africa, and incidentally to start stalking once more the deadly jungle mosquitoes.

The close of the war has brought new vigor to these two laboratories at Lagos and Entebbe. Fresh research personnel has been recruited and the laboratories now closely supplement each other's programs, working under the joint auspices of the Foundation and the

Colonial Medical Research Service of the British Government in London. The two organizations each contribute half the budget.

A new event in 1946 was a major epidemic of yellow fever extending over 5,000 square miles in Nigeria, but centering in Ogbomosho, one of the many crowded native cities found in the forest areas of that region. There were a number of deaths, but it became clear that this first major outbreak in 15 years was the classic type of urban yellow fever caused by an old enemy, the *Aedes aegypti*. The jungle type of yellow fever is more easily studied in East Africa, where it occurs unmixed with the urban variety and where *aegypti* does not complicate the picture. Jungle yellow fever is caught only by human beings who enter the forest or who live on its outskirts. In this eastern section of the broad African belt the disease is apparently maintained by arboreal mosquitoes and animals until it is transmitted to man.

There is much supporting evidence for the theory that monkeys, whose population in this region is estimated at 400 per square mile, keep yellow fever alive, aided perhaps by a mosquito. The mosquito strongly suspected is the *Aedes africanus*, which breeds in tree holes and at night bites the monkeys which sleep in the trees. This still does not bring yellow fever to the ground where men can catch it. There are, however, certain arboreal monkeys which enter home gardens to steal bananas and thus bring themselves within the range of both men and another mosquito, *Aedes simpsoni*. Contaminated originally by the *africanus* mosquito, the monkey may in turn contaminate the *simpsoni* mosquito, which in its turn relays yellow fever to the human victim.

Much of this comes under the head of enlightened conjecture, but yellow fever research in the African

laboratories is proceeding vigorously, and the mysterious activities of African mosquitoes are beginning to be a little less puzzling than they were formerly.

### THE MAGIC-WAND THEORY OF MEDICAL ADVANCE

The increasing availability of money for research in medicine is beginning to embarrass our medical schools. Where is the trained personnel coming from to make use of these funds? The general public has contributed enthusiastically to such special causes as infantile paralysis, cancer, heart disease and tuberculosis. Recently, through the National Institute of Health and the scientific branches of the armed forces, the Federal Government allocated over \$6,000,000 for similar specialized projects.

But from what source are we to get the scientists and technicians competent to work in these fields? Their training is a matter of years of preparation and it cannot be extemporized.

There seems to be a widespread public belief in what might be called the magic-wand theory of medical advance. This theory has been stimulated by the dramatic development in recent years of such remedies as insulin, penicillin, the sulfa drugs and the blood substitutes. According to this theory, our research laboratories stand ready at any time to turn money into scientific discoveries; in other words, the bottleneck to further advance is the lack of funds; with adequate funds we can buy a cure for cancer or infantile paralysis or any other disease which afflicts mankind.

The bottleneck, of course, is not the lack of funds; it is the lack of capable and thoroughly trained investigators to use the funds. The medical schools, to which we must look for these investigators, do not possess and cannot

now obtain the fundamental facilities through which alone this increasing demand can be met. Indeed, many of our medical schools are in the position of a cook asked to prepare a wedding feast for which the champagne has been furnished but no water to boil the potatoes.

A survey of American medical schools indicates beyond question that what is urgently needed is not money earmarked for projects, but free funds for the training of physicians. The imposing endowments of former years dwindled during the days of panic and depression; interest rates have been cut; and sources of replenishment have been dried up by heavy taxation or by curtailment of legislative grants. The increased cost of living is tempting — indeed in some cases, is forcing — the teachers of medicine to abandon their work in the medical schools and to take up private practice.

There are in the United States today 70 medical schools offering full four-year courses in medicine. Twenty-four of these receive their major support from state legislatures, and three more are aided by less substantial sums provided by city governments. All the rest are maintained solely by tuition fees, endowment income and gifts. Even the tax-supported schools depend upon private sources for important parts of their programs.

The total budgets of these 70 schools approximate \$25,000,000. With this money they must not only produce the doctors we need, but they must carry on most of the country's research into the cause and cure of disease. One of our most famous medical schools has recently reviewed its budget and has decided that even without expanding into new fields — merely to meet reasonably well the responsibilities it is already carrying —

it must spend about double its present appropriation.

Our medical schools desperately need money — but not for projects. They need it for salaries, for basic plant facilities, for clinical services. It is popularly supposed that the foundations can carry the financial responsibility for medical education, but nothing could be further from the truth. The total sum available from foundations for medical education and research is only about \$3,000,000 to \$4,000,000 annually, and much of it — far too much of it — is restricted to special diseases.

This is not the place for a discussion of further government subvention of education; that subject is certain to receive an active hearing elsewhere. But in so far as our medical schools rely on private support — and many of the best of them do — that support should be intelligent and discriminating. We cannot build research without the foundations of trained personnel. We cannot grow orchids in a greenhouse that lacks coal.

### THE WAR'S EFFECT ON SCIENCE

Nothing that war touches escapes blight. There is a popular belief that science made rapid progress between 1939 and 1945, but this belief has little basis for support. It is now generally recognized that the feverish activity of scientists in war time is essentially not scientific. They are primarily engaged in the application of existing knowledge to certain specific and narrow problems. They have no time for pure research, and their contributions to basic knowledge are infrequent and on the whole unimportant. They are drawing on the reserves of the past. They are using up the supply of basic discoveries which an earlier generation has given them. They are digging recklessly into the stock pile of existing knowledge. The gap between knowledge and use in

science is always narrow; the effect of war is to close the gap almost to the vanishing point.

It is not in war but in peace that the advance of knowledge, as distinguished from the application of knowledge, finds its most favorable environment. The practical applications of knowledge are the dividends which basic science from time to time declares. When basic science is even temporarily interrupted, then it is necessary to pay these dividends out of surplus, and obviously this process cannot be long continued without bankruptcy.

It is necessary to drive home the point that war does not contribute to basic science. On the contrary, it blocks its progress and, through perverted applications, debases the whole concept of the dignity and glory of man's conquest of nature.

There is another phase of the matter, equally vicious. War interferes with the proper training of scientific personnel. At least, here in the United States we allowed it to interfere. Like any procedure which expends capital resources without providing means of replenishing them, the interruption of advanced training in the basic sciences seems to cost little at the moment, and it serves an emergency by releasing manpower. But it is a policy of desperation which places a crippling mortgage on the future. It grinds up the seed-corn of scientific progress in the next generation to make a day's feed for the war machine.

The consequences of this unintelligent policy are now upon us. There is a serious, even an alarming, shortage of adequate personnel in almost every field which requires advanced thinking. Whether in physics or chemistry or the biological and medical sciences, the situation

is the same. In subjects like bacteriology, biochemistry, anatomy, biophysics and physiology, it is almost impossible to find younger men with adequate teaching and research qualifications. We have sacrificed the seed-corn. We have lost a generation. Our governmental policy was dictated by considerations of immediate need and was geared to the exigencies of the moment.

But this was not the case in Russia or in England. In both these countries policy was guided by the long view far more effectively than with us. In Russia, students of ability in most branches of science were kept in their laboratories, while Great Britain, with some difficulty to be sure, succeeded not in eliminating, but in minimizing interruption in the training of her future scientific teachers and leaders.

American democracy seems to learn its lessons the hard way. It does not realize, until too late, that human erosion, like soil erosion, can jeopardize the future. Surely out of the bitter experience of this war should come the realization that trained personnel is our most valuable asset in science. It is criminal folly to gamble with the future by policies which dissipate that asset. A nation which loses so much of its technical strength that it runs the risk of being unable to meet the needs of the next generation may find that Pyrrhic victories are as disastrous as defeats.

#### THE TELESCOPE ON MOUNT PALOMAR

The funds for the erection of the giant 200-inch telescope on Mount Palomar in California have been supplied by three Rockefeller boards: The International Education Board, the General Education Board and The Rockefeller Foundation. In 1946 the Foundation

made a final grant of \$250,000 to complete the project, bringing to a total of \$6,250,000 the funds appropriated to the California Institute of Technology for this unique instrument of scientific research.

The first grant was made in 1928. The project presented extraordinary engineering and mechanical difficulties, and a number of years elapsed before successful solutions were found for the problems of casting so large a block of suitable glass, of grinding and polishing it to a precise curvature within a few millionths of an inch, and of supporting the huge mass of 530 tons so that the telescope could be moved almost without friction to follow the pinpoint of a star across the skies.

The project was delayed more than four years by the war, but the grinding of the lens is now essentially completed, the supporting structure is ready, and it is expected that final assembly will occur during the summer of 1947, with the whole equipment in operation by the end of the year. This equipment includes not only the 200-inch telescope, but the smaller observatories for the three auxiliary or "scout" telescopes, as well as a dormitory, a power plant, water and gas systems, a small museum and seven cottages for the maintenance staff.

What is the justification for this huge expenditure of money and effort? The answer, in general terms, lies in the unconquerable exploring urge within the mind of man. This new telescope will project man's sight into the universe two times farther than it has ever gone before — to a distance more than a thousand million light-years away. It will open up an unexplored sphere 8 times the volume of that which has hitherto been sounded. What lies beyond the limits of our present knowledge? Do the stellar systems extend on indefinitely, or is a boundary finally reached beyond which

there are fewer and fewer nebulae? What is the true interpretation of the immense velocity with which all the stellar systems appear to be receding? Is it a pseudo-velocity caused by a curvature of space or by some property of light? Why from the dim frontiers of space do the countless Milky Ways send light that with strange uniformity shifts always to the red end of the spectrum? Since stars and nebulae are vast aggregations of atoms or atomic fragments, reacting on each other under conditions of pressure and temperature beyond anything that can be duplicated in man's laboratories, what secrets can we learn that will add to our knowledge of fundamental physics?

But this knowledge is dangerous, it will be said. Of course it is dangerous. All knowledge is now dangerous. Indeed, knowledge has always been dangerous. For knowledge means power, and power can be used for evil purposes as well as good. But the answer does not lie in trying to curb science or fix boundaries beyond which intellectual adventure shall not be allowed to go. Such a course, even if it could succeed, would return us to an animal existence in which mere survival was the only goal. The search for truth is, as it always has been, the noblest expression of the human spirit. Man's hunger for knowledge about himself, his environment and the forces by which he is surrounded, gives human life its meaning and purpose, and clothes it with final dignity.

Civilization is not being betrayed by science. The betrayal, if it comes, will be by men who do not know how to use science wisely. The telescope on Mount Palomar is a mighty symbol of man's unique distinction: his aspiration to know. Whether that distinction will become the instrument of his own destruction depends upon how rapidly he can travel the long road toward goals

of social organization and moral control that are now only faintly seen on the horizon.

### TELESCOPES ARE NOT ENOUGH

While we cannot put brakes on intellectual adventure, it must be admitted that there is a lack of balance about our studies and our research that imperils the future. The disproportion between the physical power at our disposal and our capacity to make good use of it is growing with every day that passes. We are in the midst of a revolution in our physical environment so vast and so rapid that our minds can scarcely keep up with it. But there are other things that cannot keep up with it, either — notably our social ideas, our habits of life and our political and economic institutions. Our political institutions, for example, are mainly rooted in the eighteenth century, but our swiftly evolving technology is largely a twentieth century phenomenon. We have one foot in a civilization that is dying and another foot in a civilization that is struggling to be born. Consequently we live a kind of bifurcated existence, and the gap between what we know and what we need to know becomes wider and deeper.

As a result there is developing a dangerously tilted situation in our society, an intellectual imbalance, which can no longer be ignored. Our knowledge of human behavior and social relations is not adequate to give us the guidance we need; and the fundamental issue of our time is whether we can develop understanding and wisdom reliable enough to serve as a chart in working out the problems of human relations; or whether we shall allow our present lopsided progress to develop to a point that capsizes our civilization in a catastrophe of immeasurable proportions.

What is needed is a broader basis of research, a more vigorous backing of objective and competent efforts to define and analyze the intricacies of human relationship. We need to know what our social organization is, how it operates, how it will react to alterations and changes. We have created a society so interdependent that issues are no longer simple, individual and local; they are complex, social and world-wide. And they are beyond the experience of most of us. International trade and finance, national income and its distribution, wages, profits, prices, purchasing power, employment and unemployment, collective bargaining, housing, crime, population, agriculture, transportation, and the social, economic and political organizations that deal with these matters — these are a few topics, selected at random, about which we must have deeper and more adequate knowledge if our society is to be kept in equilibrium. Russia has an economy of scarcity; the United States has an economy of abundance. What does this mean in terms of world unity? What are its implications? How can the two economies be reconciled so that they can live in peace together on the same planet?

A prominent figure in Washington recently remarked that we must have "a sufficient mastery of nature so that permanent world peace will be a reality and not a mere hopeful expression of faith." With all due respect, it is this mastery of nature which threatens to blow our civilization into drifting dust. What we really need is a mastery of man's social nature — knowledge and more knowledge of the on-rushing social consequences of our machines, consequences which, because they are too intricate to be easily understood, are shaping our lives to ends we do not want but cannot escape.

The encouraging factor in this whole situation is the

universal ground swell of interest in the direction of greater emphasis on the social sciences — an interest that is developing in colleges and universities everywhere, as well as in public bodies and foundations. This interest is heightened by the proof, which recent years have afforded, that the objective investigation of problems of human relations can produce results of incalculable practical value, when properly trained research workers, imbued with scientific detachment and integrity, are given an opportunity to carry on their activities with adequate resources.

This is the encouraging part of the picture. The discouraging part is that the public generally — and this is true of our legislatures and some of our universities as well — does not appreciate the fact that the problems included in this kind of research are for a variety of reasons far more involved and complex than the problems which the natural scientists are facing. These new problems in social relations cannot be solved by literary pontification, by speeches, by partisan appeals, by emotional surges or amateur efforts. There seems to be a widespread belief that we are all social scientists, all of us are economists; and in this egalitarian democracy of ours any man's ideas on any problem in sociology are as good as any other man's. We need to realize that what is true of physics and biology is true in this area also. The same degree of special knowledge is required. Social issues cannot be clearly defined and understood except on the foundation of hard, painstaking work. We must have disciplined minds and the high integrity of objective scholarship; and the flow of first-class talent into these fields must be continuous and uninterrupted.

The same comments could be applied to the humanistic studies. They constitute a counterweight as important as anything in the social sciences if we are to keep

our civilization from capsizing. History, the arts, philosophy, ethics, languages and literatures — we cannot bring our world together in any kind of unity unless we build a foundation of understanding in fields like these. Here, too, we need knowledge and scholarship. It is an unhappy omen that while other nations concede to the United States a certain leadership in scientific and technological fields, few concede us any leadership at all in the realm of ideas. Only rarely is the American delegation at an international conference in any humanistic field the most distinguished group there. It is well known that our relations with Latin American peoples have been handicapped by the fact that they turn to Europe rather than to us for intellectual stimulation.

Support of humanistic study in the United States has lagged far behind that given to any other group of disciplines. It has been estimated that less than one per cent of all money spent in the United States for research and scholarly work is spent in the field of the humanities. Our age is so absorbed by the scientific spirit with its passion for exact measurements that we almost come to believe that because the cultural side of human life eludes those measurements, it can be divorced from the search for truth, or at least be shunted to a side-track, while the express goes through on the main line. Every contribution of the physical and social sciences to the problems of society is to be welcomed; but to expect those sciences to meet the spiritual hunger for hope and belief and beauty and permanent values is a form of superstition as withering as any which humanity has thus far outlived.

Certainly in our search for the means to control our own fate we must not overlook the possibility that the unity of mankind may be achieved by art or music, a

poem or a song, perhaps more effectively and more lastingly than by engineering or medicine or economics.

This discussion can perhaps best be summed up in two sentences by Lord Stamp, whose death in a London air raid was one of the great losses of the war: "Any truth is many sided, even simple truth. But the complex truth of today needs approach by many different methods and by many different types of mind before we can arrive at even an approximation of the truth."

It is not a segment of the truth that will make us free. Not alone by telescopes and test tubes can man survive. In a world that threatens to brush aside everything that intelligence stands for, the social sciences and the humanistic studies must be pushed with daring and determination.

### WORK IN THE SOCIAL SCIENCES

The Rockefeller Foundation in 1946 gave a larger degree of support to the social sciences than in many years past. The grants fell in four primary fields: international relations, economic research, problems in the functioning of American political democracy, and research and training agencies. Altogether \$2,633,677 was appropriated for these purposes during the year. The Rockefeller Foundation is under no illusions that its grants in this area do more than touch the edge of the problems which challenge us. It can only hope that out of the activity which it has assisted will come some new approaches, some clarification of objectives, some trained personnel that will contribute to a more adequate understanding of human relations.

#### INTERNATIONAL RELATIONS

The grants in this field went to agencies which conduct research and education designed to strengthen the

foundations for a more enlightened public opinion and more consistent public policies. Appropriations were made, for example, for certain strategic histories, so that the record of past successes and failures may be available for the guidance of the future. Thus, a grant was made to the Royal Institute of International Affairs of London to enable Dr. Frank Walters to write a history of the League of Nations. Another grant was made to the Council on Foreign Relations for a history of American foreign policy from 1939 to 1946 to be prepared by Dr. William Langer of Harvard. This parallels the grant of \$152,000 made in 1945 to the Royal Institute to enable Arnold Toynbee to write a history of international relations from 1939 to 1949. An appropriation of \$300,000 was made to the Food Research Institute of Stanford University for the preparation, in collaboration with experts from many countries, of a history and appraisal of the world's experience in handling food and agriculture during World War II. Another grant was for the purpose of assisting the United Nations Information Office to reproduce the documentation of the First General Assembly and Preparatory Commission of the United Nations. The Brookings Institution was given a fund which will enable Dr. Leo Pasvolsky, who was Special Assistant to the Secretary of State for International Organization and Security Affairs, to analyze the background of the development of the United Nations organization and to initiate studies and educational conferences on the problems that are emerging in the functioning of our new international machinery. Two grants were made that deal with the question of the social implications of atomic power — one to the University of Chicago and the other to Cornell University.

Grants for general research support in the total

amount of roughly \$545,000 were also made to the following international relations agencies for studies, conferences and public education:

- The Canadian Institute for International Affairs
- The Institute of Pacific Relations
- The Swedish Institute of International Affairs
- The Institute of Economics and History at Copenhagen
- The Centre d'Etudes de Politique Etrangère at Paris
- The Christian Michelsen Institute in Norway
- The Council on Foreign Relations
- The Geneva Graduate Institute of International Studies

#### ECONOMIC RESEARCH

The future course of political events in the world will be determined in large degree by the wisdom with which we guide or manage our economy. Wisdom in economic affairs cannot be achieved by rhetoric or force. The slow process of reason, of deepening understanding, of training competent experts, must go forward at many centers of research in many lands. The Rockefeller Foundation aided these efforts during 1946, by grants in the total amount of \$370,825 to the following institutions:

- University of Cambridge — Department of Applied Economics
- Dutch Economic Institute — General budget
- University of Oslo — Institute of Economics
- University of Pennsylvania — Industrial Research Department — Labor relations
- Yale University — Labor and Management Center
- University of California — Bureau of Business and Economic Research
- University of Manchester — Economics Research Section
- University of Chicago — Industrial history
- Nankai University — Institute of Economics

#### THE FUNCTIONING OF AMERICAN POLITICAL DEMOCRACY

Observers abroad frequently comment on the contrast between our industrial power to produce and our

political and administrative ineptitude. Certainly the development of social and moral wisdom in our collective life is a task of the highest priority, although no single organization can do more than sow a few seeds.

In 1946 four or five modest grants were made in support of studies in the functioning of American political democracy. An appropriation was voted to the University of Alabama for a study of the electoral process in the South under the direction of Professor Roscoe C. Martin. The University of Minnesota received a grant for research in the conflict and coordination of inter-governmental relations viewed from the standpoint of their interaction in one state — Minnesota. The University of Wisconsin received a grant for a study of the problems of housing, and an appropriation was made to the Bureau of Public Administration of the University of Virginia. Further support was also given to Miami University for the demographic studies which are proving so fruitful.

#### RESEARCH AND TRAINING AGENCIES

Support was voted in the total amount of \$216,000 to the following basic agencies in the social science field:

The Social Science Research Council

The Canadian Social Science Research Council

Johns Hopkins University

In addition, the sum of \$350,000 was appropriated in the social sciences for fellowships and grants in aid administered directly by the Foundation.

#### OUR AMERICAN HERITAGE

The history of our own culture and institutions here in America has been for many years a relatively neglected field. To be sure, the College of William and Mary offered a course in American history as early as 1731, but there were apparently no imitators among other

colleges before 1800, and it was not until a century later that the first chair of American literature was established.

As a result of this neglect — or rather, perhaps, the preoccupation of our scholarship with other fields — whole areas of American life and tradition are only now beginning to be explored at all adequately, areas such as our economic, social and intellectual history, the history of our science, medicine and technology, as well as of our art, music and drama. As yet only a beginning has been made in the study of the rich regional cultures which nourish whatever national culture today exists in the United States and Canada.

No nation can manage its future which does not understand its past. Research and study are needed of the bases of our American habits and traditions — a wider knowledge of who we are and where and what we came from, a fuller interpretation of American life to enable us to comprehend what we possess today and on what our tomorrow can be built.

It is hardly necessary to emphasize that an interest of this kind involves no narrow nationalistic aim. The culture of the one world in the making is necessarily compounded of the diverse contributions of many peoples. Until a nation understands itself in relation to its own culture, it cannot intelligently harmonize and integrate its life into the larger pattern.

For ten years The Rockefeller Foundation has been interested in promoting the field of American studies, and appropriations of roughly a million dollars have been made for this purpose. For the most part the Foundation has concentrated its support on interpretative studies which utilize and tend to give form and relevance to what is known. Three grants in 1946 il-

lustrate the present range of the Foundation's activity in this area. The first allows for grants in aid by the Texas State Historical Association to men and women working on the interpretation of the Southwest. The grant also includes provision for a share of the editorial expense involved in the completion of *The Texas Handbook*, a compendium of Texas history and biography.

The second grant, to the University of Wisconsin, contributes toward studies of the process of the transformation of Wisconsin from "a wilderness lightly tied to Western civilization" to a highly developed and integrated segment of American life.

The third grant, to Northwestern University, will enable Professor Baker Brownell of the Department of Philosophy to devote a substantial portion of his time to continuing in other sections of the country studies of the kind he directed in the so-called Montana Study, studies dealing with the problems of the individual citizen in his participation in the community.

It is a significant fact that interest in American history and culture is developing in European institutions. Since the war the Foundation has made provision for visits to the United States of seven scholars responsible for North American studies in their universities. In addition, grants were made in three instances — at Cambridge, Oslo and Upsala — for working collections of books needed by these scholars and their students.

#### THE MEETING OF WEST AND EAST

One of the important tasks of our generation — and perhaps it is the most imperative of all — is to find ways by which the ideological chasms which now divide the world can be bridged. We live in a time of political and economic diversity and cultural conflict far more

acute than anything our modern civilization has before known. It is not merely the Soviet system *versus* the West; ideological stresses and strains are present everywhere — China against the West, for example, India against the West, the Near East against the West. Somehow or other a basis must be found for accommodating the differing political aspirations and the conflicting cultural ideals of Eastern civilization and our own.

It is easy to preach tolerance. It is easy to say that irreconcilable and dynamic beliefs can live side by side in peace in the same world. But as the situation is developing now, there may not be time to achieve this tolerance. We may be moving toward catastrophe without even the desire to examine objectively the nature of the differences that divide us or to explore the possibility that widely separated cultures could reinforce and sustain rather than combat and destroy one another.

Perhaps the main difficulty in the situation is that the East and West do not understand each other. We know too little of each other's history or traditions. Only within the last decade has interest in Chinese and Slavonic studies been seriously awakened in the United States, and even now there is little appreciation of the impact which Eastern aspirations and culture are bound to make upon the West as the Orient stirs to new life. China, for example, is beginning to speak with authority, as a proud people, with a civilization thousands of years older than that of the West. In a recent address T. V. Soong, President of the Executive Yuan of China's National Government, sounded a new note: "Asia is tired of being regarded only in terms of markets and concessions, or as a source of rubber, tin and oil, or as furnishing human chattels to work the raw materials."

Since 1933 The Rockefeller Foundation has been trying to stimulate a widening interest in the languages, history, cultures and traditions of the East. Up to the present time approximately a million dollars has been appropriated for this purpose — a relatively modest amount when compared with the need. In 1946 five grants were made through the Division of the Humanities in continuation of this program. Two of the grants were for work in Europe, one to the Chinese Institute at the University of Leiden and the other for the development of Far Eastern studies at the University of Stockholm. Leiden's Institute, under Professor J. J. L. Duyvendak, promises to become, in the next few years, the leading center for Far Eastern studies in Western Europe. The work in Stockholm is organized to benefit students of Sweden, Norway and Denmark, and represents a collaborative effort of high promise.

A third grant was to the Institute of Pacific Relations for the preparation of English translations of source materials on Chinese history. The volumes which will be produced will be the first works in a western language to present the essential elements of Chinese history from original texts.

Since 1935 Princeton University has been developing studies of the more recent phases of Near Eastern life and tradition. Not only does it specialize in the languages of the Near East, but courses are given in the culture, religion, history and political institutions of the area, with a two-year graduate course designed to train for governmental, educational or business service. In 1946 The Rockefeller Foundation granted \$42,500 for the development of this work.

The Hoover Institute for Slavonic Studies at Stanford University possesses unique resources for the advanced study of recent Slavic history and institutions.

Purchases and gifts of materials since 1917 cover all classes of documentation on historical events of European and Asiatic countries for the past 30 years. No other American library has comparable holdings on the Soviet Union, and these resources are now being systematically increased by purchasing agents in Central Europe, in Japan and in China. The Institute is in a strategic position to make its library one of the great centers of present and future scholarship in Slavic fields. In 1946 The Rockefeller Foundation appropriated \$200,000 for research fellowships and administrative and service costs.

In this connection, mention might be made of the appropriations, voted in 1946, through the Foundation's Division of the Social Sciences, of \$233,000 to the Institute of Pacific Relations, \$60,000 of which went to the American Council and \$173,000 to the Pacific Council. Much of the work of this organization is related to the training of personnel, the stimulation of language study and the conduct of research on problems of the Far East. It is part of the pattern by which, from many different directions and points of view, efforts are being made to bring the West and the East into closer understanding.

#### COLLEGES IN CHINA

China at the moment is a tragic country, with internal dissensions which seem irreconcilable. But in the long view the picture is not necessarily dark. Time has always been on China's side. Her history and culture go back thousands of years and there have been many periods in the past when conflict and civil war have torn her apart.

The Chinese have a physical and spiritual vitality, a

recuperative power, which is almost unique. They have learned how to surmount disaster, how to keep their social and aesthetic values vigorous and alive under pressures of demoralization and chaos. They are an extraordinarily gifted people, and unless global calamity overwhelms us all, they are destined to make a contribution to the life of man incalculable in its beneficial consequences.

At the moment they need help. The war with Japan has brought unparalleled dislocation in all phases of Chinese life. This is particularly true of educational institutions, just now struggling to keep alive against a crippling inflation.

There are 13 Chinese colleges and universities that in the past have been supported, in part at least, by American funds. Plans are now under way by which these 13 institutions, through federation and amalgamation, will be reduced to eight. Thus the University of Fukien is expected to combine with Hwa Nan, Nanking with Ginling; and one university is contemplated in the Shanghai area instead of four. In 1946 these institutions undertook a joint campaign in the United States for the means of restoration and rehabilitation. The Rockefeller Foundation was happy to be able to contribute \$500,000 for this purpose.

#### . INVESTING IN MEN

No money is ever wasted which is invested in the training of men. This is a principle to which the Foundation has subscribed for more than three decades. During this period, funds totaling \$21,000,000 have been appropriated for advanced training through approximately 8,000 fellowships in all countries of the world and in practically all fields, from sanitary engineering to

Shakespearean scholarship. The results in terms of intellectual leadership and achievement have been gratifying beyond anything that was contemplated when the fellowship system was first inaugurated, and in the opinion of the Foundation no money which it has ever spent has brought such substantial returns. It has been an investment in brains, an underwriting of promising talent, and its consequences are today evident in many parts of the world.

In 1946 The Rockefeller Foundation continued and increased its regular fellowship programs and made certain special appropriations to help in the restoration of wartime losses in leadership. Two hundred thirty-six regular post doctoral fellowships were granted directly by the Foundation to citizens of 25 different countries. In addition, during the year, 65 regular postdoctoral fellowships were awarded from funds appropriated by the Foundation to citizens of the United States and Canada; these awards were made by the National Research Council in the fields of the natural and medical sciences, the Social Science Research Council in the social sciences, and the American Council of Learned Societies in the humanities. In 1946, too, under similar arrangements, the British Medical Research Council awarded advanced postdoctoral fellowships to eight British citizens.

During the last three years, the Foundation's fellowship programs have also included a type of award which varies from the usual procedure. After the United States entered the war, many of the promising young men and women who normally would have completed their technical training joined the armed services or worked in war laboratories or in other emergency government posts. To give some of them, at least, an opportunity to make up the training they had lost, the Foundation

instituted a series of emergency postwar fellowships. The usual stipulations as to age, academic status and future prospects were frequently waived. For some appointees the Foundation's aid supplemented the provisions of the G.I. Bill of Rights; for others, ineligible for these provisions, the Foundation underwrote the full cost. In the case of the natural sciences and the social sciences, the Foundation gave funds for postwar fellowships to be allocated by the appropriate national councils; in the medical sciences, awards were provided through 26 different medical schools. In the field of the humanities the Foundation operated directly. During 1946, 342 such fellowships were granted. Since 1943 the Foundation has appropriated \$1,693,000 for this purpose, and 591 fellowships have been awarded from these appropriations. It is hardly necessary to add that these funds, although considerable, have been completely inadequate to meet the need.

Related to these postwar fellowships were appropriations designed to supply leadership in a field which war needs proved to be relatively undeveloped in the United States. During 1946, from funds given by the Foundation, 39 fellowships and scholarships in advanced applied mathematics were awarded by Brown University and New York University. Since 1942, \$195,000 has been appropriated for this purpose, and assistance has been given to 153 individuals.

The Foundation's regular fellowships, its postwar fellowships, its postwar predoctoral fellowships, and the special grants for developing trained personnel in advanced mathematics are all concerned, of course, with younger men, those who are the potential intellectual leaders of the future. But there are older men of established reputation whom the war has shut off from contact with the scholarship of other nations. To meet this

situation, the Foundation expanded its program of travel grants, a technique hitherto employed for more specific purposes. These grants, providing travel and living expenses, enable the scholar to spend several months in resuming contacts with his colleagues in other countries. A total of 129 visitors, citizens of 27 different countries, were assisted during 1946. Of these, 17 each were from the United States and Great Britain, 12 from Czechoslovakia, 11 each from France and Norway, 8 from Denmark, 6 each from Mexico and Finland, 5 each from Poland and Yugoslavia, 4 each from Canada and Sweden, 3 from Belgium, and 2 each from Colombia, the Philippines, the Dominican Republic, Greece, India and Switzerland. Eight additional countries received single grants. The Foundation also made grants to institutions in France, Great Britain, the Netherlands, Norway, Syria and the United States for the same purpose. Altogether, the Foundation gave \$271,482 in travel grants during 1946.

#### THE GENERAL EDUCATION BOARD

The largest single appropriation made by the Foundation in 1946 was \$7,500,000 to the General Education Board for its work during the five-year period beginning in 1947. The General Education Board was founded by Mr. John D. Rockefeller, Sr., in 1902 for work in the field of education within the limits of the United States. It is an independent entity, with no legal connection with the Foundation, separately incorporated and handling its own funds. In the 44 years of its existence its total appropriations have been as follows:

From principal	\$162,824,754
From income	<u>124,824,775</u>
	<u><u>\$287,649,529</u></u>

This expenditure falls into the following general classifications:

**Universities and Colleges**

General Endowment, Buildings, Facilities and Current Expenses	\$ 55,575,862
Teachers' Salaries	44,220,035
Medical Sciences	98,835,792
Natural Sciences	18,183,969
Social Sciences	1,714,061
Humanities	6,823,986
Libraries	4,746,452
Agricultural Education and Research	1,551,056
Other Purposes	639,204
Science of Education	25,784,792
Public Education	13,577,181
Agricultural Demonstration Work	1,180,870
Fellowships and Scholarships	3,444,826
Grants in Aid	1,457,789
Miscellaneous	2,140,496
Administration	7,773,158
	<hr/>
	<b>\$287,649,529*</b>

The General Education Board has never hesitated to dip into its principal funds to support projects that seemed of outstanding importance. As the natural result of this policy, the Board has at last come practically to the end of its resources, except for the sum of \$10,000,-000 which, several years ago, was set aside as a capital fund for administrative expenses.

In recent years the program of the Board has been almost exclusively confined to the promotion of educa-

\* This total may be divided as follows:

White	\$200,770,248
Negro	51,293,405
General	35,585,876
	<hr/>
	<b>\$287,649,529</b>

tion in our southern states. One need present no argument to establish the fact that the South, despite its known potentialities and its recognized achievements, lags seriously behind the rest of the United States in many essentials. Whether measured by available investment capital, effective economic opportunity, personal and public incomes, state and local political administration, health and social welfare, or educational facilities, the comparative position of the southern region is one of disadvantage. The presence of 10,000,000 Negroes in the population — the major part of the Negroes in the United States — imposes burdens unequalled in other parts of the country and complicates many undertakings which are fundamental to the progress of the South.

While gratifying and truly significant advance has been made during the past 40 years in the development of educational institutions in this area, the need and the opportunity for the types of service the General Education Board has rendered, and under its charter is designed to render, have not substantially decreased during the life of this Board. Indeed, in some respects conditions in the South today are not as favorable as formerly. This is especially true in relation to the economic basis of southern life. The South is predominantly rural and agricultural. The introduction of farm machinery, the heavy loss and depletion of agricultural lands, and the drastic shrinkage of foreign markets for the leading cash crops of the area have dislocated and impoverished great numbers of the people and have restricted employment opportunities, private earnings and public revenues, with all the resultant limitations. Extensive readjustments in the economic life of the South, both agricultural and industrial, are now under

way. The need for their intelligent guidance is paramount if the South is to find a basis for the support of its own cultural institutions; and it is only through research and education that the goal will be achieved.

Perhaps no private agency or foundation is as well known or as widely respected in the South as the General Education Board. By working with regularly constituted agencies and institutions, by dealing realistically and helpfully with timely opportunities to advance long-term objectives, by backing sound educational leadership when it appears, and by assistance in the development of personnel through fellowships and training grants, the Board has played what seems to be a useful and constructive part in the development of southern education.

The Trustees of The Rockefeller Foundation felt that the work of the Board was too significant — not only to the South but to the nation — to be allowed to lapse, and the grant was made which will permit the Board's activities to continue, although on a reduced scale.

#### APPLICATIONS WHICH WERE DECLINED DURING 1946

During 1946 the Foundation was obliged to decline a total of 1,839 applications for financial aid, as compared with 1,028 in 1945. Although the increase was evident in all categories, 875, or 45 per cent, were from foreign sources. Some of these applications represented projects of interest to the Foundation but were declined because other opportunities seemed more promising. The great majority, however, were declined because they fell outside the areas of work in which the Foundation is attempting to be of service.

The Foundation does not make gifts or loans to individuals, or finance patents or altruistic movements in-

volving private profit, or contribute to the building or maintenance of churches, hospitals or other local organizations, or support campaigns to influence public opinion.

The applications which were declined during 1946 may be classified under the following headings: conferences and meetings, 13; continued aid to projects, 44; cures, remedies, investigations of theories and inventions, 59; development of educational and cultural institutions and projects, 209; European refugees, 46; fellowships, travel and training grants, 681; local institutions (including hospitals, theaters, libraries, museums and churches), 180; personal and medical aid, 68; public health projects, 30; publication projects, 72; research projects, 319; miscellaneous, 118.

## **REPORT OF THE SECRETARY**



## SECRETARY'S REPORT

THE members and trustees of The Rockefeller Foundation during the year 1946 were:

Walter W. Stewart, *Chairman*

Winthrop W. Aldrich	Walter S. Gifford
Chester I. Barnard	John J. McCloy
Karl T. Compton	Henry Allen Moe
Harold W. Dodds	William I. Myers
Lewis W. Douglas	Thomas I. Parkinson
John Foster Dulles	Thomas Parran, M.D.
Raymond B. Fosdick	John D. Rockefeller, 3rd
Douglas S. Freeman	Robert G. Sproul
Herbert S. Gasser, M.D.	Arthur Hays Sulzberger

Harold H. Swift

The officers of the Foundation were:

Walter W. Stewart, *Chairman of the Board of Trustees*  
Raymond B. Fosdick, *President*  
Thomas B. Appleget, *Vice-President*  
Alan Gregg, M.D., *Director for the Medical Sciences*  
Warren Weaver, *Director for the Natural Sciences*  
Joseph H. Willits, *Director for the Social Sciences*  
David H. Stevens, *Director for the Humanities*  
George K. Strode, M.D., *Director, International Health Division*  
Norma S. Thompson, *Secretary*  
Edward Robinson, *Treasurer*  
George J. Beal, *Comptroller*  
Thomas M. Debevoise, *Counsel*  
Chauncey Belknap, *Associate Counsel*  
Vanderbilt Webb, *Associate Counsel*

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

The President, *Chairman*

Chester I. Barnard	John J. McCloy
John Foster Dulles	Henry Allen Moe
Herbert S. Gasser, M.D.	Walter W. Stewart

The following served as scientific directors of the International Health Division of the Foundation during 1946:

Charles H. Best, M.D.	Hugh J. Morgan, M.D.
Gordon M. Fair	Thomas Parran, M.D.
Wilton L. Halverson, M.D.	Lowell J. Reed

The Director of the Division

## MEETINGS

Regular meetings of The Rockefeller Foundation were held on April 3 and December 3-4, 1946. Seven meetings of the Executive Committee were held during the year to take actions within general policies approved by the trustees.

## FINANCIAL STATEMENT

A summary of the Appropriations Account of the Foundation for the year 1946 and a statement of its Principal Fund follow:

## SUMMARY OF APPROPRIATIONS ACCOUNT

FUNDS AVAILABLE	FUNDS APPROPRIATED
Balance from 1945... \$ 590,697	Appropriations
Income for 1946..... 8,492,732	Public Health..... \$ 2,450,000
Legacy-Estate of Robert Marsh, Jr..... 36,764	Medical Sciences.. 1,395,985
Unexpended balances of appropriations allowed to lapse and refunds on prior year grants..... 699,814	Natural Sciences.. 2,510,140
Transferred from Principal Fund in accordance with resolutions of Trustees, April 3 and December 4, 1946..... 9,883,000	Social Sciences.... 2,633,677
	Humanities..... 1,304,200
	China Program... 500,000
	Miscellaneous.... 114,000
	General Education
	Board..... 7,500,000
	Administration
	Scientific Divisions 761,653
	General..... 287,465
	<hr/>
	Authorization for later appropriations by the Executive Committee..... 24,456
	<hr/>
	\$19,457,120
	<hr/>
	\$19,481,576
	<hr/>
Balance available for appropriation in 1947..... 221,431	
<hr/>	
\$19,703,007	\$19,703,007
<hr/>	

## PRINCIPAL FUND

Book value, December 31, 1945.....	\$146,473,525
<hr/>	
Add:	
Legacies:	
Estate of Robert Marsh, Jr.....	460,947
Estate of William F. Hendry.....	24,033
Amount by which the proceeds of securities sold, redeemed and exchanged during 1946 exceeded the ledger value.....	929,700
<hr/>	
	\$147,888,205
<hr/>	
Deduct:	
Amount withdrawn from principal for transfer to Appropriations Account in accordance with resolutions of Trustees, April 3 and December 4, 1946.....	9,883,000
<hr/>	
Book value, December 31, 1946.....	\$138,005,205
<hr/>	



## **INTERNATIONAL HEALTH DIVISION**

# INTERNATIONAL HEALTH DIVISION

## SCIENTIFIC DIRECTORS

Charles H. Best, M.D.	Hugh J. Morgan, M.D.
Gordon M. Fair	Thomas Parran, M.D.
Wilton L. Halverson, M.D.	Lowell J. Reed, Ph.D.
	George K. Strode, M.D.

## STAFF DURING 1946

### *Director*

George K. Strode, M.D.

### *Associate Directors*

Lewis W. Hackett, M.D.	Fred L. Soper, M.D.
	Andrew J. Warren, M.D.

### *Assistant Directors*

Hugh H. Smith, M.D.	Mary Elizabeth Tennant
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### *Staff*

Thomas H. G. Aitken, Ph.D. <sup>4</sup>	John C. Bugher, M.D.
Charles R. Anderson, M.D.	Henry P. Carr, M.D.
Richmond K. Anderson, M.D. <sup>1</sup>	Joseph C. Carter
Marshall C. Balfour, M.D.	Ottis R. Causey, Sc.D.
Marston Bates, Ph.D.	Delphine H. Clarke, M.D.
Johannes H. Bauer, M.D.	Janet D. Corwin
George Bevier, M.D.	Porter J. Crawford, M.D.
Mark F. Boyd, M.D. <sup>3</sup>	William A. Davis, M.D. <sup>2</sup>
Elizabeth W. Brackett	Wilbur G. Downs, M.D.

<sup>1</sup> On leave with United States Public Health Service.

<sup>2</sup> Resignation effective October 7.

<sup>3</sup> Retirement effective December 31.

<sup>4</sup> Appointment effective February 1.

Brian R. Dyer	Alexander F. Mahaffy, M.D. <sup>5</sup>
Monroe D. Eaton, M.D.	John Maier, M.D. <sup>1</sup>
John E. Elmendorf, Jr., .D.M. <sup>1</sup>	Oliver R. McCoy, M.D. <sup>11</sup>
John P. Fox, M.D.	William A. McIntosh, M.D.
Kenneth Goodner, Ph.D. <sup>2</sup>	D. F. Milam, M.D.
John B. Grant, M.D.	Hugo Muench, M.D. <sup>6</sup>
Alexander J. Haddow, M.D.	J. Harland Paul, M.D.
Richard G. Hahn, M.D.	George C. Payne, M.D.
Guy S. Hayes, M.D.	Osler L. Peterson, M.D.
Rolla B. Hill, M.D.	Edward G. Pickels, Ph.D. <sup>7</sup>
Esther M. Hirst	Persis Putnam, Sc.D.
George K. Hirst, M.D. <sup>3</sup>	Elsmere R. Rickard, M.D.
Thomas P. Hughes, Ph.D.	Paul F. Russell, M.D. <sup>1</sup>
John L. Hydrick, M.D.	Bruce E. Sasse <sup>12</sup>
John H. Janney, M.D.	Kenneth C. Smithburn, M.D.
Harald N. Johnson, M.D.	John C. Snyder, M.D. <sup>8</sup>
John F. Kendrick, M.D.	Richard M. Taylor, M.D.
J. Austin Kerr, M.D.	Max Theiler, M.D.
Stuart F. Kitchen, M.D.	Robert B. Watson, M.D. <sup>9</sup>
Frederick W. Knipe	John M. Weir, M.D. <sup>1</sup>
Henry W. Kumm, M.D.	Clifford W. Wells, M.D.
Charles N. Leach, M.D.	Charles M. Wheeler, Ph.D. <sup>1a</sup>
Edwin H. Lennette, M.D. <sup>4</sup>	Loring Whitman, M.D. <sup>1</sup>
John Alexander Logan, D.Sc. <sup>10</sup>	D. Bruce Wilson, M.D.
Estus H. Magoon	Daniel E. Wright <sup>13</sup>

<sup>1</sup> On leave for military service during part of year.<sup>10</sup> On leave for military service all year.<sup>2</sup> Resignation effective July 15.<sup>3</sup> Resignation effective September 30.<sup>4</sup> Resignation effective July 30.<sup>5</sup> Resignation effective December 31.<sup>6</sup> Resignation effective August 31.<sup>7</sup> Resignation effective June 30.<sup>8</sup> Resignation effective September 30.<sup>9</sup> Appointment effective January 1.<sup>10</sup> Appointment effective July 18.<sup>11</sup> Appointment effective July 1.<sup>12</sup> Appointment effective February 1.<sup>13</sup> On leave with United States Public Health Service and in turn loaned to UNRRA.



## **INTERNATIONAL HEALTH DIVISION**

<b>INTRODUCTION</b>	<b>61</b>
<b>MEDICAL CARE</b>	<b>62</b>
<b>THE ROCKEFELLER FOUNDATION HEALTH COMMISSION</b>	<b>68</b>
<b>EUROPEAN SURVEY</b>	<b>70</b>
<b>PUBLIC HEALTH EDUCATION</b>	<b>76</b>
Training Stations	76
Schools of Nursing	77
Schools and Institutes of Hygiene	78
Fellowships and Travel Grants	79
<b>STATE AND LOCAL HEALTH SERVICES</b>	<b>79</b>
<b>LABORATORIES OF THE INTERNATIONAL HEALTH DIVISION IN NEW YORK CITY</b>	<b>84</b>
<b>CONTROL OF DISEASES</b>	<b>86</b>
Yellow Fever	86
Malaria	88
Other Projects	91



# INTERNATIONAL HEALTH DIVISION

## INTRODUCTION

THIS section of The Rockefeller Foundation Report dealing with the activities of the International Health Division in the field of public health gives an account of outlook and policies at the end of 1946. The story here given does not go into technical detail of research work done by the field staff of the International Health Division, nor does it give complete information on programs in each of the regions in which the International Health Division is active. A fuller report giving details on field work, investigations and surveys by areas, and intended for health officers as well as others especially interested in the field of public health will be published under separate cover later in the year.

High lights of Foundation public health activities for 1946 were: 1) partial resumption of public health contacts in Europe and elsewhere; 2) completion of certain wartime tasks such as final distribution of yellow fever vaccine left over from supplies made for the armed forces; and 3) the initiation of a new field of interest, medical care. In addition, the Foundation is continuing research and control work in malaria, yellow fever and certain other diseases. It also gives aid to a number of state and local health departments by inaugurating promising public health techniques and carries on a program of public health education by cooperating financially with teaching institutions and by making

available a sizeable number of fellowships and travel grants.

### MEDICAL CARE

To inaugurate its new program in medical care the International Health Division in 1946 appropriated \$300,200 to four projects, three in the United States and one for study in Europe. The most important of these was underwriting in part of the Health Insurance Plan of Greater New York, described at the end of this section, which was supported with an appropriation amounting to \$250,000.

*American Public Health Association — Subcommittee on Medical Care* — A grant of \$25,000 was made to the Subcommittee on Medical Care of the American Public Health Association. This Subcommittee on Medical Care in 1944 drafted a set of principles setting forth the content and design of a suitable national medical care program, together with general principles of its administration. The principles approved by the Committee on Administrative Practice and adopted by the Governing Council of the American Public Health Association as Association policy represent an assurance that medical care has assumed a high priority among the problems of public health, and that the public health profession, after giving careful thought and analysis to the problems presented, should take leadership in the formulation of a national medical care program.

The Subcommittee believes that ultimately a single health agency should administer all types of health services at the federal, state and local level, avoiding the separate administration of preventive and curative services which characterizes so many programs. How-

ever, health agencies are likely to be given administrative responsibilities only in so far as they seek such responsibilities and prepare themselves for their proper discharge. It is essential, therefore, that public health personnel should become conversant with medical care problems and should equip themselves to administer medical care programs.

It is realized that these broad objectives and principles do not provide a basis for legislation, but the Subcommittee includes among its personnel men who are capable of administrating as well as framing the needed legislation. International Health Division funds provide for staff assistants, office expenditure and cost of committee meetings.

*Group Health Insurance, Inc.* — Formerly Group Health Cooperative, Inc., this organization has received grants amounting to almost \$200,000 since 1942, under a program in the Medical Sciences Division of the Foundation. In 1946, an appropriation of \$22,700 was made to this group by the International Health Division.

Group Health Insurance, Inc., a non-profit organization, has operated in the ten southern counties of New York State under a license from the State Superintendent for Insurance since December 1940. This organization provides the services of physicians on a prepayment basis. Three types of contracts are available: to individual employees, to husbands and wives, and thirdly to husbands, wives and all unmarried children. Certain specified medical services are supplied for an annual payment. At the end of 1945, there was an enrollment of 14,500, representing a growth of 6,000 subscribers over the year. A self-supporting status calls for 25,000

contracts. Group Health Insurance, Inc., is at present administering two services, one for industrial groups and the other for individual families. The amount appropriated to Group Health Insurance, Inc., was \$22,700.

*Study of Programs in the United Kingdom and Europe* — The growing interest in the field of medical care and the possibility that the Federal Government may take legislative action make it desirable for the United States Public Health Service to have on hand all obtainable factual information. The United States Public Health Service is anxious, too, to have on file as complete and detailed information on other countries as can be had so that the United States may have the benefit of experience gained elsewhere.

The Surgeon General of the United States Public Health Service, therefore, sent two senior members of his staff to Western Europe for three months to explore administrative details and to observe the operation of health insurance systems in the United Kingdom, France, Sweden, Denmark and Holland. The men chosen were Dr. Joseph W. Mountin and Mr. George St. J. Perrott. The International Health Division contribution of \$2,500 was for stenographic, interpretive and other expenses not covered by government allowances, and was designated for a study of medical care programs in the United Kingdom and Europe.

*Medical Care Surveys* — During the year a staff member, John B. Grant, was delegated to make surveys and reports on health care projects throughout the world. On extensive travels which included parts of Europe and North America there was obtained considerable information with regard to projects already active or contemplated. Together with other staff members, Dr. Grant made surveys on a consultant basis on govern-

ment invitation in British Columbia and Manitoba, where there is much interest in feasible schemes of medical care for rural as well as urban areas. Throughout various parts of the British Empire various forms of health insurance are finding wide acceptance, at least in principle. The English National Health Services Act, 1946, makes preventive an integral part of curative medicine by transferring from the health authorities to the general practitioner responsibility for the professional side of medicine. In England prepayment for medical services has now been extended to the population as a whole. The new Act makes medical schools and their hospitals partners in the health service. The British Medical Association has also recorded its opinion that the family rather than the individual should hereafter be the unit for the general practitioner.

In the United States one interest in health care takes the form of supporting widespread voluntary prepayment plans for physicians' services such as are characteristic of the health insurance plan for the New York City area described below.

*Health Insurance Plan* — The Health Insurance Plan of Greater New York is a non-profit membership corporation authorized to conduct a program of voluntary health insurance in the New York City area. The governing body of HIP is a Board of Directors composed of representatives of medicine, labor, city government, social welfare and business. Enrollment in HIP is voluntary and will eventually be open to all groups of employed persons resident in New York City earning less than \$5,000 a year, together with their dependents. It is proposed to begin by serving city employees and employees of private industry and their families.

Each insured person will have a choice of the medical groups serving his area of the city, and, within the medical group he has selected, he will be invited to choose a personal physician.

Services to be provided will include most preventive, diagnostic and therapeutic medical services in home, office or center, and hospital: laboratory work, X-ray, physical therapy, hospitalization and visiting nurse service at home. Dental care is not included at the start, although it is hoped to bring in some dentistry later. Drugs are not furnished except where they are dispensed as a part of hospitalization or physicians' service. For technical services, all types of acute and chronic illness are covered, except pregnancy existing at the time of application for membership. The only exclusions for such services are for drug addiction, acute alcoholism, purely cosmetic surgery, and chronic conditions requiring long-term institutional care.

Hospitalization is furnished through joint arrangements with the Associated Hospital Service. Limitations on length of stay and conditions to be covered for hospitalization are identical with those of the standard Associated Hospital Service contract, and payment to hospitals is made directly by the Associated Hospital Service.

Approval of the plans by the State Department of Insurance has been obtained and considerable progress has been made in securing the cooperation of a large number of physicians prepared to organize group practice units. Some 444 physicians, organized into 20 groups, are ready to begin the delivery of services, and approximately 500 unattached physicians wish to affiliate with HIP groups. Professional standards of the medical staff involved are set and maintained by a Medical Control Board of leading physicians.

It is estimated that 25 full-time physicians (or their equivalent in part-time service) will be required for 20,000 insured persons. The experience of other programs has demonstrated that this ratio of physicians to insured persons will make it possible for each physician to furnish the needed service, without haste, in a 2,000-hour working year, leaving time for a one-month vacation with pay, and for attending services and teaching in hospital wards and out-patient departments.

With employer contribution of at least 50 per cent of the total payments to cover the employees of the company, group contract premiums are payable monthly on the basis of annual premiums for one person at \$29.04, two persons \$58.08 and three or more persons \$87.00. These annual rates do not include the cost of hospital insurance but cover payments for physicians' services, ambulance service, visiting nurse care, allowance for administrative and selling costs, and reserves required by the insurance law. Hospitalization will be furnished through joint arrangements with the Associated Hospital Service at an additional cost of \$9.60 a year for a single person, \$19.20 for two and \$24.00 for families of three or more.

The HIP makes it possible for medical schools within the area to have communities under their own control for study and treatment. Research and teaching in the fields of social and preventive medicine can be carried out satisfactorily only through such controlled population groups and the HIP will, therefore, offer these institutions an opportunity that can have an important influence on research and teaching in these fields throughout the country.

There is considerable freedom in organization for the various medical groups which participate in the HIP. Present arrangements include a nucleus of physicians

from an existing hospital staff as well as individual physicians, general practitioners and specialists, who attend their hospitalized cases as semiprivate or private cases in the hospitals with which they are connected.

The plan of HIP for medical service is comprehensive in that it emphasizes such services as immunizations, periodic physical examinations, health education and pre- and postnatal care.

Other features are strong consumer representation on the Governing Board, central administration by medical men, group clinic diagnosis and emphasis on preventive techniques.

Because a successful HIP would be of national significance in providing experience in the operation of an adequate health insurance program and in training administrative personnel to direct similar plans in other parts of the country, the International Health Division is underwriting this project to the extent of \$250,000. Funds used from this grant are to be repaid to The Rockefeller Foundation without interest when sufficient reserves have been accumulated by Health Insurance Plan of Greater New York.

#### THE ROCKEFELLER FOUNDATION HEALTH COMMISSION

This agency, set up as a part of the International Health Division in 1940 for the purpose of doing something to aid the re-establishment of normal public health routines in countries and areas ravaged by war, continued its activity in 1946 with special emphasis on resumption of public health work in Europe. An outstanding feature was the demand for study visits from areas where conditions are still unusual as a result of the war. The requests were of two sorts: 1) for short-term grants to experienced officials who have been isolated

for a period of years and who can derive real benefit from a period of observation in countries where progress has continued during this time; 2) for fellowships to create as rapidly as possible a nucleus of trained younger men to rebuild the staffs of health agencies and teaching institutions depleted by the war.

The first fellowships were designated on July 18, 1945. Since then 71 fellowships and 35 travel grants have been given to recipients from 17 countries, chiefly Europe and Asia. The amount of money already appropriated is \$300,000. The average fellowship is for something over \$3,000, and the average travel grant is for approximately \$1,500.

An important and most necessary item was the purchase of journals covering war years for European libraries and institutions of hygiene.

Another feature has been emergency grants for equipment and supplies to European institutes of hygiene. Among these were the Institute of Hygiene in Zagreb, a grant of \$46,000, \$10,000 for equipment and the remainder for maintenance over a three-year period; Norway Ministry of Health, a \$25,000 grant for salary increases for health department personnel over a five-year period; the State Institute of Public Health of Norway, an \$8,000 grant for replenishing chemicals and some much-needed apparatus; Norway Ministry of Health, a grant of \$15,000 for support of a postgraduate course of study in public health nursing over a five-year period; the State Institute of Public Health in Utrecht, Holland, a grant of \$10,000 for the purchase of equipment and supplies; Pasteur Institute at Dakar, Africa, a grant of \$600 for equipment; Peking First Health Station in China, a grant of \$15,000 for health work; the Institute and School of Hygiene, Warsaw, a grant of

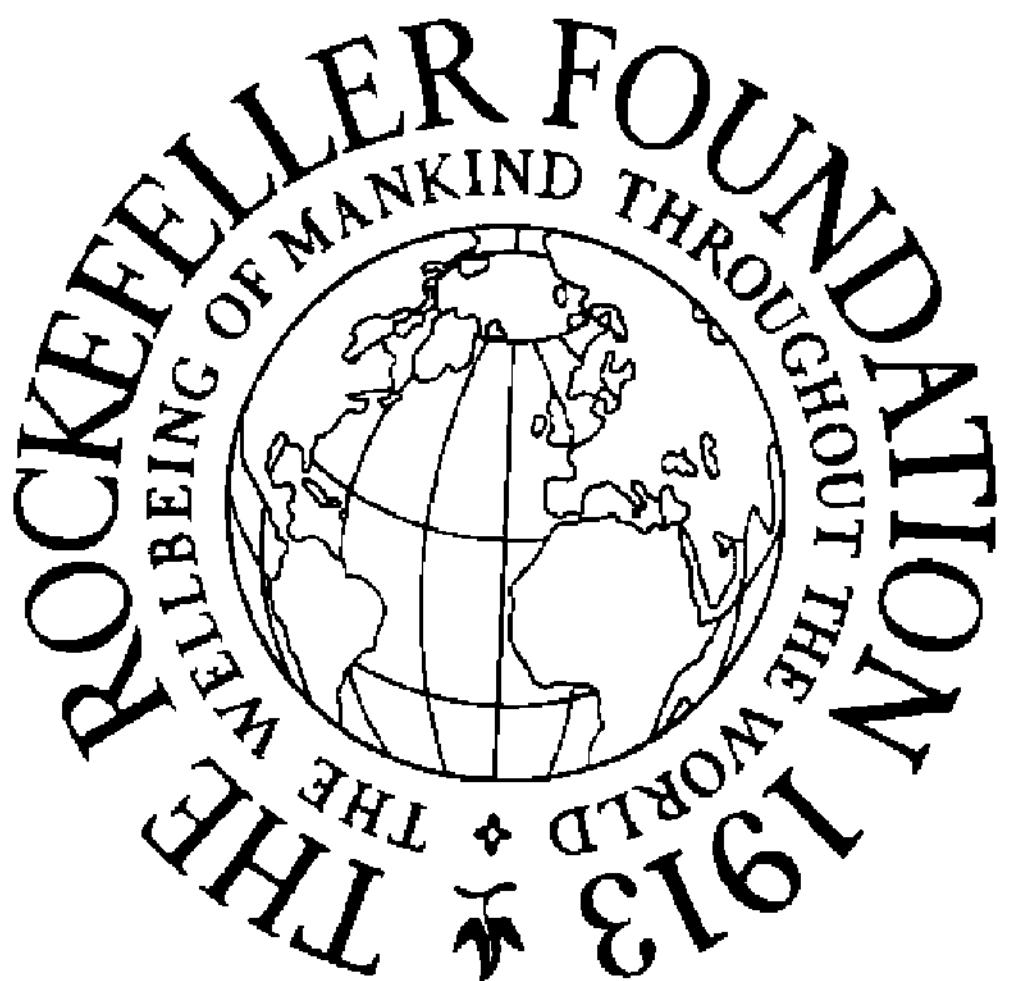
\$53,000 for purchase of equipment and supplies; Yugoslavia, School of Nursing affiliated with the Institute of Hygiene of the Ministry of Health, a grant of \$52,000 for repairs to the war-damaged building and for equipment.

Other projects supported by The Rockefeller Foundation Health Commission funds include a malaria study made by The Rockefeller Foundation Health Commission in Italy, in conjunction with civil and military authorities. A second study still under way in 1946 in Peru had to do with malaria chemotherapy. A third project concerned with the distribution of yellow fever vaccine still on hand after the large emergency program of manufacturing and supplying the armed forces with yellow fever vaccine had already come to a close. The total number of doses distributed from May 1942 to the end of December 1946 was 28,104,420.

#### EUROPEAN SURVEY

In general, during the past year special emphasis has, by way of exception, been placed on what might be considered emergency aid in Europe. This was rendered both timely and relevant by the unusual circumstance that the whole continent of Europe has been isolated for some five years from the literature and science of the rest of the world. Small grants for equipment, medical literature and special surveys have aided in quickly linking once more the old and the new worlds. The fellowship program has been particularly active and a considerable number of travel grants already alluded to likewise helped.

*Scandinavian Countries.* — Here The Rockefeller Foundation work has been devoted largely to aid in the field



Photograph Excised Here

Rural health survey, Araraquara,  
State of São Paulo, Brazil.



Photograph Excised Here

College of Nursing, New Delhi, India.



Photograph Excised Here

Staff member of the Bureau of Industrial Hygiene, Department of Health and Public Welfare, Manitoba, demonstrating the use of an impinger apparatus for collecting dust samples.

of public health and public health nursing education, the control of communicable disease (syphilis and gonorrhea) and grants in aid to specific agencies. In Finland, where in spite of adverse economic and political conditions, tremendous progress has been made in the socialization of medicine and public health, three far-reaching national laws were passed during the years 1943-1945, and these laws are being effectively enforced.

*Netherlands.* — The Netherlands has made extraordinary progress in rehabilitation. Although 10 per cent of the total area was flooded during German occupation, this land has been reclaimed and the Ministry of Rehabilitation is now working on the reclamation of further areas of the Zuider Zee. The International Health Division is actively interested in this country in the new malaria control program. During 1946 the country suffered a high incidence of malaria, over 50,000 cases having been reported. Assistance has been given by the International Health Division to a proposed nationwide malaria survey in preparation for the institution of control measures. Fellowships and travel grants have been awarded, and the awakening of interest among the people in public health measures is evidenced by the fact that a new school of public health is being started in Leiden.

*Belgium.* — Aid to Belgium during 1946 has been limited to medical literature, travel grants and fellowships and a public health survey of the Province of Luxembourg. Belgium has come back remarkably well from the economic point of view. The Government has spent a great deal on repair and reconstruction work.

*France.* — Fellowships and travel grants have been

awarded and a grant in aid was made towards the alteration and equipment of a nutrition laboratory.

*Poland.* — An International Health Division representative has been able to make two prolonged visits to Poland. The Division, in addition to making available funds for the purchase of books, instruments and supplies for the Institute of Hygiene, has awarded several fellowships and travel grants.

*Yugoslavia.* — International Health Division representatives have visited Yugoslavia. Funds have been made available for repairs and equipment of the School of Hygiene and School of Nursing in Zagreb. Public health literature has been sent, and a number of fellowships and travel grants have been awarded.

*Greece* has been visited by an International Health Division representative, and requests received for fellowships and travel grants. Schools of nursing and the School of Hygiene in Athens are getting reestablished.

*Italy.* — International Health Division representatives have been in close contact with the work here since the end of the war. No fellowships or travel grants have been awarded, but large-scale malaria control is projected for Sardinia, the costs of which are being met by UNRRA, the Italian Government and The Rockefeller Foundation Health Commission. Active operation has already started in Sardinia with an entomological survey of the island. An attack on the adult mosquito should soon be under way, employing DDT as the main weapon. This is considered a fairly long-term program.

*England.* — With the close of the Oxford Nutrition Survey program, there remains in Britain only the International Health Division program of financial aid towards rehabilitation of the faculty of the London

School of Hygiene and Tropical Medicine. Several travel grants have been given and a number of fellowships.

*Eire.* — There has been an increased interest in modern public health procedures in this country. The chief medical officer has visited the United States for three months under the auspices of the International Health Division and has returned to Eire with the hope of reorganizing its health service and improving nursing education.

*Portugal.* — The School of Nursing in Lisbon had some financial assistance from the International Health Division during the war. A fellowship was granted for the training of the new directress of the school, and an American nurse secured for this post during the absence of the candidate for training. This American nurse has since completed her duties, and at the present time the International Health Division has no active program in Portugal.

*Public Health Literature.* — Interstate communications in Europe are still extremely difficult, which means that public health and medical literature from outside countries filters in very slowly, if at all, to many of the countries, particularly those in Eastern Europe. The International Health Division has been successful in getting some journals and books which were published during the war period into these countries, but in many instances it is impossible for these countries to secure foreign currencies to enable them to subscribe to outside journals. During this emergency period, most valuable service could be rendered by the introduction of a microfilm service. At the present moment two organizations are attempting to establish such an international service for Europe, one the Royal Society

of Medicine in London and the other the Pasteur Institute in France. One problem in connection with this plan will be the purchase of readers which will be necessary for reading the films. Money has been made available by the International Health Division for the purchase of 20 readers which will be distributed to strategic points.

### PUBLIC HEALTH EDUCATION

As a part of its regular program, the International Health Division, in addition to its work of research and control in the field of preventable diseases, also carries out a program of public health education and aid to state and local health services. The public health education program comprises two types of activity, fellowship grants and support to educational institutions. Something has already been said of the postwar travel grants and fellowships to public health personnel from war-ravaged areas. These, however, constitute only about one third of the total number of grants made.

The aid to institutions is of three types: to training areas, nursing schools and institutes of hygiene.

*Training Stations.* — Since September 1943 a project, known locally as Scheme D-209 of the British Department of Colonial Development and Welfare, under the joint auspices of that organization, the Government of Jamaica and the International Health Division, has conducted courses for the theoretical and practical training of public health nurses and sanitary inspectors in Kingston, Jamaica. These courses lead to a certificate from the Royal Sanitary Institute, London. To provide field training a rural health demonstration has been set up in St. Catherine.

In Mexico the International Health Division has given support to a training station in Tacuba which covers an area in the outskirts of Mexico City and is closely connected with the School of Public Health, from which it receives students for field training. Aid is also given to the activity known as "Regional Instruction," which supervises all field training stations in the states and is closely associated with the Section of Personnel Training in the Office of State Health Services of the Ministry of Health and Welfare.

*Schools of Nursing.* — Four schools of nursing in South America and one school of nursing in Europe received aid for equipment and personnel. In Bogotá, Colombia, the National Superior School of Nursing has received support since 1943 from the International Health Division for operating expenses. In Ecuador, the School of Nursing in Quito has been given aid for establishing a modern school of nursing in that country. The University Nursing School at Montevideo, Uruguay, and the National School of Nursing, Caracas, Venezuela, have also received funds from the International Health Division. In Europe assistance has been given to the School of Nursing in Lisbon.

A new grant was made during the year to the National School of Nursing at Caracas. This School, to which the International Health Division has given aid since 1942, is receiving support to the amount of \$23,520 for the establishment of a training health center to serve a nearby population of approximately 6,000, as well as to serve as a practice center in the teaching of preventive medicine. Another grant of \$4,000 went for aid to a project connected with nursing schools in India and Ceylon. The money is being used to supply sets of basic

nursing and public health nursing books to various government nursing schools and also to provide other teaching equipment. The need for this in India is particularly urgent, as there are thus far only some 7,000 nurses throughout the country as compared with 42,000 doctors.

*Schools and Institutes of Hygiene and Public Health.* — During 1946 the International Health Division continued to give support to schools and institutes of hygiene and public health both in this country and abroad. Among those which continued to receive aid was the Johns Hopkins School of Hygiene and Public Health, which is receiving funds for additional teaching personnel and for support of a field training and study area in the Eastern Health District of Baltimore. At Harvard University the International Health Division has cooperated with the Department of Sanitary Engineering by giving funds for equipment and supplies, and with the Department of Nutrition by supporting instruction and research in nutrition. In Canada, the University of Toronto School of Hygiene received support for teaching personnel and facilities for training students in public health, medicine and public health nursing.

Outside North America support was continued to the University of Chile School of Public Health in the form of funds to provide additional teaching personnel in the School and to enable a number of recently returned fellows to work full time in the State Health Department and in the School. In China, International Health Division support to the National Institute of Health has been used to make possible increased work in the fields of public health nursing, sanitary engineering and chemistry, medical entomology and vital statistics. A

new designation has been made in 1946 to continue assistance to this Institute.

The State Institute of Public Health in Stockholm also received a grant in 1946. Previously funds have been given by the Foundation towards the cost of constructing and equipping this Institute. Present funds are to be used for the purchase of equipment for a field training area near Stockholm to be established in connection with the Institute.

*Fellowships and Travel Grants for 1946.* — The fellowship program supported by the International Health Division of The Rockefeller Foundation was continued on the same basis as in former years. On a budget of \$200,000 there were provided 119 fellowships and 33 travel grants. The fellows came from countries all over the world to study nutrition, sanitary engineering, nursing, public health administration and many other subjects dealing with public health and welfare.

#### STATE AND LOCAL HEALTH SERVICES

To help make surveys or inaugurate new services, demonstrational in character, the International Health Division has for many years supported a program of financial cooperation with state health services. Typical of the projects included in this type of work are such items as the following:

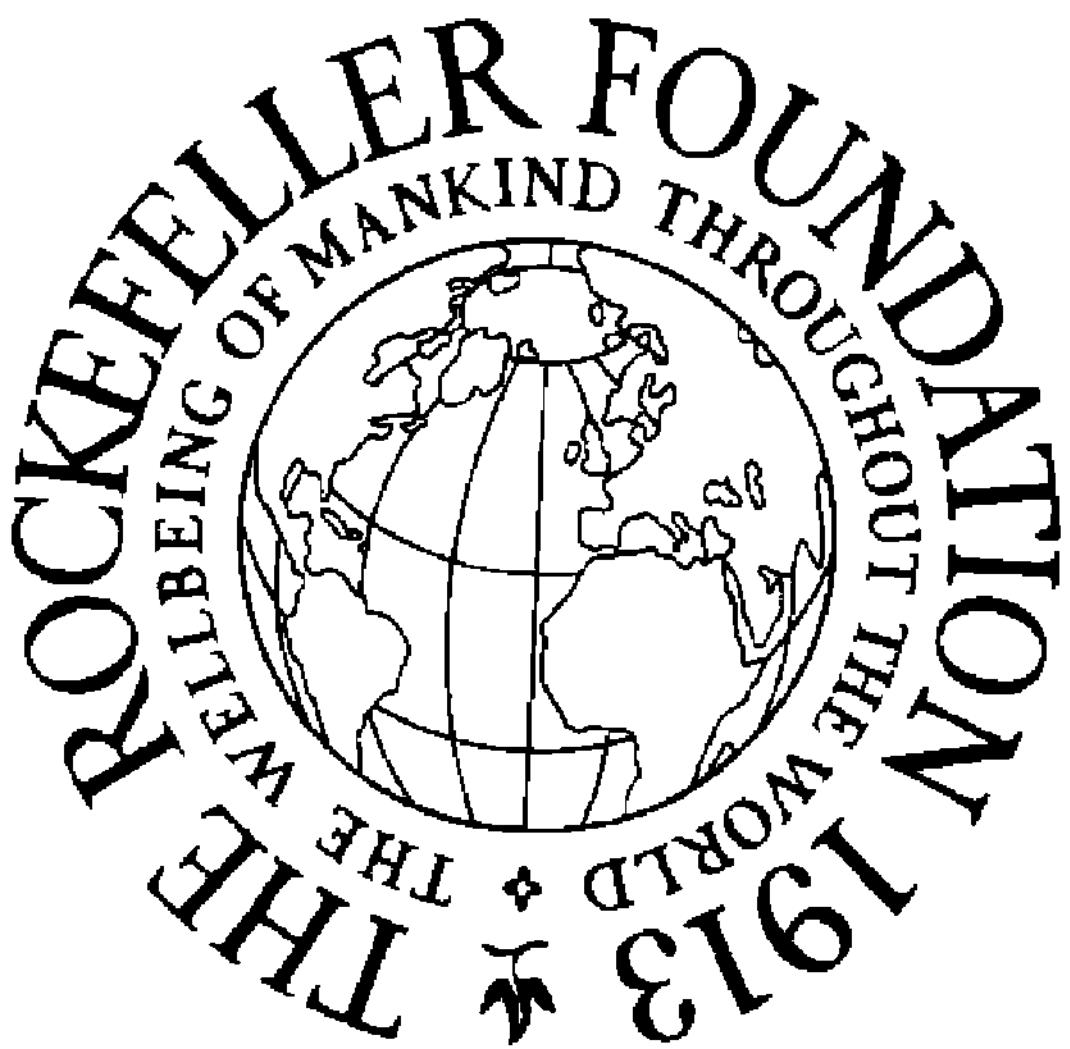
Since 1919 the Dominican Republic has made notable progress in providing medical care for its two million inhabitants. The International Health Division, whose cooperation has been requested by the Government, is contributing \$13,406 toward a proposed nation-wide public health survey. A staff member is in charge of this work, which includes examination of existing health facilities, vital statistical ratios, distribution of in-

sects of medical importance, occurrence of preventable diseases and facilities for medical care. The survey is expected to take about two years.

In Peru, as a result of a reorganization of the Ministry of Health, there was set up a Department of Selection and Training of Personnel. The Director of the Department, who has supervision of all training activities in the Ministry of Health, is committed to a program involving the employment of technically trained full-time personnel. The International Health Division has made a contribution of \$24,750 towards this work.

The International Health Division is assisting the Department of Health and Social Services, New Brunswick, Canada, in establishing a Division of Sanitary Engineering. This field covers such important services as supervision of domestic water supplies, disposal of sewage, stream pollution, housing, town planning, control of milk, the sanitary supervision of food-handling establishments, and rural sanitation. This Department will be inaugurated in 1947 and is to be headed by a graduate in civil engineering of the University of New Brunswick who is at present attending the Harvard Postgraduate School of Engineering on an International Health Division fellowship. The amount of the grant is \$15,375.

In the Province of Manitoba the Bureau of Maternal and Child Hygiene and Nutrition has received \$12,000 for the development of a model maternal and child hygiene service. During the period May 1, 1938, to December 31, 1941, the International Health Division aided the Provincial Division of Vital Statistics of Manitoba in conducting a maternal mortality study, the purpose of which was to investigate every fatal



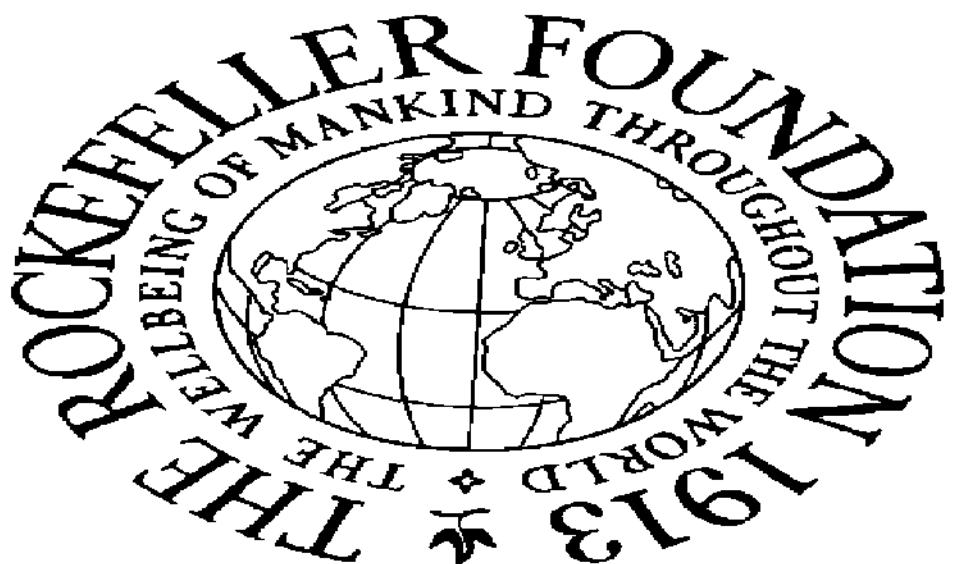
Photograph Excised Here

Diagnostic and laboratory work is part of the service provided by  
the Health Insurance Plan of Greater New York.



Photograph Excised Here

School nutrition program, Concord, North Carolina.



Photograph Excised Here

Study of mental hygiene problems in a Well Baby Clinic,  
Johns Hopkins University.

confinement case in a suitable given area of Manitoba, in an effort to demonstrate the need and supply the basic data for a maternal and child hygiene program. The conclusions drawn from this study were that prenatal care is a prerequisite for maternal welfare and that too few expectant mothers in Manitoba seek and obtain adequate supervision during pregnancy. Since the maternal mortality rate was at the time of the study approximately the same for other provinces, the conclusions for Manitoba were regarded as applying to all of the Dominion. As a result of this investigation, it was recommended that the Canadian Medical Association set up minimum standards for prenatal care, and take as its responsibility the education of the medical profession in respect to the necessity of such minimum standards, and that the standards when set up be placed in the hands of the official public health agencies, with the request that a program be inaugurated in an attempt to provide a high percentage of pregnant women with appropriate standards of care. An International Health Division fellowship has been given to Dr. Ella L. Peters, in training for the directorship of the Bureau.

Since 1939 the International Health Division has been cooperating with the California Department of Public Health in initiating research on influenza on the Pacific Coast. In 1943 an additional grant was made for the investigation of infectious hepatitis and for organizing a virus diagnostic section. The Virus Diagnostic Laboratory and the Virus Research Studies were combined in 1945. A new consolidation is planned for 1947 in which all work of this type will be concentrated in a virus laboratory offering a unique opportunity to conduct research work on virus diseases under conditions that provide for a close coordination of laboratory

and field studies. Activities include development of new methods of isolating and propagating viruses, with special reference to studies on the etiology of infective hepatitis, epidemic nausea and vomiting, and certain respiratory diseases presumably caused by viruses. Work on encephalitis and other respiratory diseases will also be continued as well as a diagnostic service for rickettsial diseases, including Rocky Mountain spotted and American Q fever. The grant made to the California Virus Laboratory was for \$58,000.

#### LABORATORIES OF THE INTERNATIONAL HEALTH DIVISION, NEW YORK CITY

This central laboratory continued to occupy a position of prominence in the International Health Division program. In this laboratory towards the end of 1945 a change-over was made from work on a war basis to the type of research that is normal in peace time. Mass production of yellow fever vaccine was discontinued, and in order to take care of the many changes in setup required by the functional return to peacetime activities, new quarters were provided. By arrangement with the Rockefeller Institute for Medical Research the two top floors of one of the Institute buildings were allocated to International Health Division activities. In the new quarters the activities of the laboratory will continue to be concerned with three major types of field plus laboratory research, dealing with malaria and virus and rickettsial diseases.

The investigations in malaria have to do with chemotherapy supplemented by a study of the bionomics of the malaria organism. In testing drugs efficient against malaria, considerable use is made of chicks and monkeys, since these animals have a malaria organism differing in species from those found in men but not dissimilar

in behavior characteristics. The chemical work entailed is carried on in conjunction with the Harvard University Department of Chemistry, of which Dr. Louis F. Fieser is the head. Some phases of the work involving radioactive tracer techniques are carried on in conjunction with Dr. William Dauben of the University of California.

During the year opportunity was afforded to investigate several local outbreaks of influenza and to collect additional information on induced immunization. Throat washings, and acute and convalescent sera collected from three localized epidemics which occurred in this vicinity in the early part of the winter, revealed that influenza B virus was mainly responsible. A number of strains isolated by inoculation of embryonated eggs are under critical study. A study of an epidemic occurring among the student body of Yale University indicated that the group of students in the United States Army who had received influenza vaccine were definitely protected against clinical manifestations of the disease as compared with the Navy group which had not been vaccinated. The clinical attack rate in the latter group was 12.5, while in the former or vaccinated group it was only 0.5. Studies have been continued on the nature of the red cell agglutination phenomenon by influenza and other viruses.

Work on the chemotherapy of rickettsial infections, including typhus and scrub typhus, is also under way. In connection with a field study in Florida, the study of the antibody response following the administration of several types of typhus vaccine, varied dosage, and single and repeated inoculations is in progress. Investigation of murine and epidemic typhus strains and the effect of passage through arthropod vectors has been initiated. In the work on virus and rickettsial diseases

use is made of the electron microscope, which is a part of the equipment of the laboratory.

### CONTROL OF DISEASES

*Yellow Fever.* — In Brazil, where the Foundation has withdrawn from a large cooperative program in yellow fever control, there is still going on a cooperative program of field and laboratory investigation in yellow fever. During 1946 data were secured on the geographical distribution of various monkeys in Brazil. No evidence was found for hereditary transmission of yellow fever through the eggs of the suspected yellow fever mosquito, *Haemagogus*. Thus far there has not been obtained any evidence clearly incriminating birds or cattle.

Brazil is still one of the indicated regions crucial for information about jungle yellow fever. It is in this part of South America that public health men have their best chance to encounter a jungle yellow fever epidemic and obtain data still missing as to just what helps such an epidemic to spread.

Since 1934, the International Health Division has also designated well over one-half million dollars for yellow fever control and investigations in Colombia. The laboratory for the control and investigation of yellow fever in Colombia is the Carlos Finlay Institute for Special Studies, which is a dependency of the Ministry of Labor, Hygiene and Social Welfare and which has been active in providing such important services as vaccine production, viscerotomy service, examination of liver specimens, vaccine administration and mouse protection tests. It has also carried out field studies and laboratory research in epidemiology of jungle yellow fever. Although plans have been made to turn over the direction of this Institute to the Colombian Govern-

ment, The Rockefeller Foundation has continued to support its work during 1946 and will continue to do so in 1947.

Since 1945 the International Health Division has been aiding the Ecuador National Yellow Fever Service in its campaign against this disease, which becomes more important as transportation facilities increase. Dr. Egberto García, who studied in 1945 on a fellowship to Johns Hopkins University offered by the Institute of Inter-American Affairs, on his return in 1946 was appointed director of the Yellow Fever Service. Work is now progressing under the supervision of Dr. Roberto Nevarrez, the Director of Health, a former International Health Division fellow.

Since 1937 support had been given to the Yellow Fever Research Institute at Entebbe, Uganda, East Africa. This Institute is the center of a field program intended either to solve the epidemiology of yellow fever in this region or, if this proves for the present impossible, to accumulate all possible evidence concerning the animal and human cycles of the disease. The principal obstacle to identifying the forest vector has been a lack of knowledge of where the virus has been active at any particular time. By the testing of non-immune children, with fingerprinting for reidentification, and the use of non-immune rhesus monkeys as sentinel bait, an attempt is made to establish a foolproof indicator of virus activities. There is also under way an immunity survey to determine the limit to which the disease has spread. Studies to determine whether the distribution of the disease is parallel with *Aedes simpsoni*, a suspect mosquito, are in progress.

When work was resumed in 1943 at the Yellow Fever Research Institute at Lagos, Nigeria, West Af-

rica, there was undertaken an intensive program in yellow fever research. From protection tests of children a more comprehensive knowledge has been gained of the extent of yellow fever. Towards the middle of 1946 there was a widespread epidemic in Ogbomosho. This outbreak, urban in character, made possible valuable clinical studies.

*Malaria.* — Malaria is one of the important preventable diseases in which the Foundation has been interested for many years. The methods employed against malaria are those of field work adapted to the locality concerned, combined with laboratory investigations of various sorts, but dealing either with the mosquito or with the malaria organism.

The countries in which field work against malaria was carried on in cooperation with health authorities of local governments were Mexico, British Guiana, Trinidad and Tobago, Colombia, Peru, Venezuela, China, Egypt and Italy.

Among special studies in malaria receiving support are those at Tallahassee, Florida; the University of Chicago; Mexico City; the Villavicencio Laboratory in Colombia; at Maracay, Venezuela; and in Nanking, China.

The station at Tallahassee, Florida, with which the Foundation is cooperating, is conducted in conjunction with the Florida State Board of Health and is maintained on the campus of the Florida State College for Women. Since its establishment, the Station has been intimately related to the Florida State Hospital, having provided many of the facilities for the malaria therapy service in this institution. In addition to the routine maintenance of the malaria therapy service, the Station pursued a research program and also supplied training

opportunities for a large number of students. The investigational opportunities enjoyed have in previous years resulted in the colonization of several species of anophelines; the accumulation of a unique file of complete case histories of induced malaria infections, which exceed 1,500; several analyses of case histories throwing light on obscure aspects of the natural history of these diseases; various studies on the parasites and their relation to their human hosts; and extended studies on the characteristics of immunity in malaria. During 1946 cooperative arrangements were made to facilitate publication of the accumulated scientific material resulting from the above mosquito investigations.

At the University of Chicago the Foundation has for many years supported malaria studies under the direction of Dr. William H. Taliroffero. The recent work, for which additional support has been given, concerns the effect of X-rays and nitrogen mustards on innate and acquired immunity to the malaria organism in chickens.

The objectives of malaria studies now receiving support in Mexico are collaboration with the malaria program of the State<sup>5</sup> of Veracruz to improve its effectiveness and to develop an organization which can utilize effectively the resources of the state and federal governments, and application of new methods to the study and control of malaria.

The Villavicencio Laboratory in Colombia was established in 1938 for yellow fever studies. These were discontinued late in 1945 and the laboratory has since been engaged in laboratory and field studies of anopheline biology and other problems related to malaria. Villavicencio is advantageously situated at the foot of the eastern range of the Andes, at an elevation of 500 meters, with the extensive plains of the Orinoco at its

front door. Numerous culicines, including some 23 species of *Anopheles*, thus far have been found relatively near the laboratory. Material for this study is therefore abundant and easily accessible.

During the period from 1927 to 1933 the International Health Division had an active program in Venezuela, involving hookworm and malaria surveys in cooperation with the Venezuelan Government. Dr. Arnoldo Gabaldón, a former International Health Division fellow, has been Director of the Division of Malariology since 1936. This Division, with its ten years of service, has won favorable local and international recognition. Venezuela is the meeting place of the anopheline fauna of the Mexican and Brazilian sub-regions of the neotropic region. The International Health Division has been invited by the Government of Venezuela to undertake malaria studies in cooperation with its Division of Malariology and thereby combine a research program with the already established teaching and control program.

The malaria studies program in China, initiated at Chefang on the Burma Road in 1940 and carried on for two years, determined the epidemiological features of malaria for that part of Southwest China. With the Japanese advance the field laboratory was moved to the Chungking area in June 1942. In association with the National Institute of Health a field station was set up in suburban Chungking. Observations, including blood and spleen surveys, measurement of *Anopheles* density, and dissections, were conducted during the rest of 1942. Beginning in 1943, malaria control was undertaken by antilarval measures, and in 1945 an adult spraying campaign was undertaken for experimental and demonstration purposes. With the ending of the war, the

National Institute of Health moved back to Nanking and a malaria laboratory was set up in one of the Institute's buildings there. The International Health Division's interest in malaria studies in China has been reaffirmed and strengthened by the recent assignment of several staff members to that region. The purpose of the malaria studies program in China remains the same as previously reported, that is, to obtain basic malariological data; train personnel, staff and students; demonstrate control measures; and develop a malaria organization for integration with the National Health Service.

*Other Projects.* — In the field of nutrition the International Health Division program is now stressing support of training and research work at three university centers. Typical is the project at the Vanderbilt University School of Medicine. Another center receiving support is the University of Toronto.

At Nashville, Tennessee, the Vanderbilt School of Medicine is maintaining a Division of Nutrition as a permanent feature of the School. The Director of the Division is Dr. William J. Darby. There is close cooperation between this Nutrition Division, other departments of the Medical School, and the Tennessee Department of Public Health in the attempt to establish nutrition work on a firm basis. The program is composed of two parts, one strictly educational in character within the State Health Department, and the other with emphasis on research and survey work at Vanderbilt University School of Medicine. In the educational work, state nutritionists have worked closely with county health departments in improving nutrition of pregnant women, mothers and school children. The research program at Vanderbilt University has included a study of techniques applicable to nutrition surveys and the

use of such techniques in a pilot survey of the population of middle Tennessee.

In the past year The Rockefeller Foundation, through its International Health Division, has supported syphilis studies under Dr. T. B. Turner at the Johns Hopkins School of Hygiene and Public Health. Studies in syphilis supplementary to those at Johns Hopkins have been made in an area in North Carolina which includes the Orange-Person-Chatham Health District and the City of Durham. This field epidemiological study of syphilis, under the direction of Dr. J. J. Wright, has been making good progress. Valuable information with regard to age, sex and recurrence of attacks of syphilis has been obtained. With the introduction of penicillin there have been established rapid treatment centers as well as small decentralized diagnostic clinics furnishing epidemiological information. It is intended that this type of investigating effort in syphilis should be made an integral part of a general health program.

Murine typhus is an increasingly important health problem in the United States. Nine states from 1931 to 1944 reported almost 33,000 cases. Florida, an average state, reported during this period somewhat over 2,000 cases. A Foundation staff member, together with the state epidemiologist, has undertaken a state-wide survey of the typhus problem. The International Health Division has designated \$6,200 for part of the expense of the survey.

The Johns Hopkins School of Hygiene in 1946 received \$14,400 to continue its diphtheria studies under the direction of Dr. Martin J. Frobisher, Jr., Associate Professor in the Department of Bacteriology. There has been an alarming increase in diphtheria mortality and morbidity in certain cities in this country. The

disease in question is of the malignant or "bull-neck" variety, occurring in persons of all ages. A similar situation is developing in Europe. Under these conditions there is need for the new knowledge and new laboratory tools promised by this work at Johns Hopkins in the field of diphtheriology.

In yellow fever and malaria studies there has often been felt the need of a recognized center to which entomological material could be sent for expert identification. Most of the taxonomic research on insects has devolved on museums and certain universities. The Department of Parasitology of the Johns Hopkins School of Hygiene and Public Health is a logical choice for such a center. The Foundation has now made available \$5,000 for the establishment of such a center at this school under the direction of Dr. Lloyd E. Rozeboom. Part of the sum provided is to be expended on a special study involving *Anopheles aquasalis*, the relationship of which to other members of the tarsimaculatus series is still to be determined. Close contacts with the National Museum in Washington will help to make this taxonomic center a valuable teaching and research facility of the School of Hygiene and Public Health at Baltimore.

## **THE MEDICAL SCIENCES**

## THE MEDICAL SCIENCES STAFF

During 1946

*Director*

ALAN GREGG, M.D.

*Associate Director*

ROBERT A. LAMBERT, M.D.

*Assistant Directors*

HUGH R. LEAVELL, M.D.<sup>1</sup>  
ROBERT S. MORISON, M.D.  
DANIEL P. O'BRIEN, M.D.

<sup>1</sup>Resigned September 1946.

## THE MEDICAL SCIENCES

<b>INTRODUCTORY STATEMENT</b>	<b>99</b>
<b>PSYCHIATRY, NEUROLOGY AND PHYSIOLOGY</b>	
Massachusetts General Hospital: Endocrinology	100
McGill University: Endocrinology	101
National Research Council: Research in Problems of Sex	102
Columbia University: Endocrinology	104
Child Research Council of Denver	106
University of Cambridge: Psychological Laboratory	108
Tavistock Clinic	109
University of Cambridge: Neurophysiology	111
McGill University: Brain Chemistry	112
University of Brussels: Neurophysiology	113
University of Zurich: Neuropsychiatry	114
University of London: Galton Laboratory	117
National Institute of Cardiology	118
<b>OTHER SUBJECTS</b>	
Medical Publications: France	119
Graduate Medical Education: School of Military Neuro-psychiatry	119
University of Michigan: Institute for Teachers of Preventive Medicine	120
National Health Council, Inc.: Coordination of Voluntary Agencies	121
Medical Administration Service, Inc.	122
New York University	123
University of San Marcos: Pathology Equipment	123
University of Zagreb: Public Health Teaching	124
<b>FELLOWSHIPS</b>	<b>125</b>
<b>GRANTS IN AID</b>	<b>127</b>

## THE MEDICAL SCIENCES

THE year 1946 was marked in the Division of the Medical Sciences by a resumption of several important projects in Europe. The disorganization of life is so complete in large portions of the Continent that Foundation resources provide but feeble tools with which to reestablish medical scholarship. Difficulties of travel continue to hamper the officers in making adequate appraisal of conditions, especially in Middle and Eastern Europe. In all but a handful of countries shortages of simple necessities like coal and food interfere with the minimal operations of medical schools and hospitals. On the other hand, deficits in the number of physicians, together with other factors difficult to summarize, have resulted in enormous increases in the number of students. Teachers so overburdened have little time for research and have difficulty freeing themselves for short refresher visits to countries which have suffered less heavily. Provision for the latter has, however, occupied a high priority in the Foundation's program, and a large proportion of the grant-in-aid fund has been used in arranging visits of European physicians to outstanding clinics in the United States and elsewhere.

Large grants looking to the reestablishment of fundamental research activities have of necessity been limited to Western Europe. Four grants, totaling \$216,675, have been made to English institutions, all of them related to the Medical Sciences program in nervous and mental disease. Neurophysiological laboratories in

Switzerland and Belgium have also been aided. The work on which these groups are engaged ranges from studies on the physicochemical properties of single nerve cells to the emotional problems of the British coal miner. In the best of times it is not easy to devise a systematic and integrated attack on a problem so vast as that represented by mental disease. Under present conditions it seems essential to sacrifice neat program formulae in favor of immediate aid for men of recognized capacity with a laboratory to work in and some free time to think.

#### PSYCHIATRY, NEUROLOGY AND PHYSIOLOGY

MASSACHUSETTS GENERAL HOSPITAL

ENDOCRINOLOGY

Both the Division of the Natural Sciences and the Division of the Medical Sciences of The Rockefeller Foundation have in the past made grants in support of research on endocrinology and metabolism by Dr. Fuller Albright at the Massachusetts General Hospital. This year \$12,000 was appropriated for this purpose, to be available for a three-year period.

During the past five years Dr. Albright's interest in the physiology of calcium and phosphorus metabolism has developed important relations with protein metabolism and the function of the adrenal cortex. Work in this field is being carried on by several different laboratories which maintain close liaison with one another. This combined effort is approaching an explanation of the mechanism whereby the body is able to make emergency use of protein stores both for meeting unusual energy demands and for the repair of acute damage of body structure. Certain hitherto inexplicable alterations in appearance and sexual function now

seem traceable to spontaneous changes in the pattern of endocrine activity which underlies normal protein and carbohydrate metabolism.

Among Dr. Albright's recent findings are the following: demonstration that nitrogen loss during acute disease states is not due to alterations in diet; proof that the loss of calcium from the bones which regularly follows orthopedic operations is dependent on a preceding loss of the protein structural elements in bone; demonstration of an apparent parallelism between nitrogen and calcium excretions in the urine of a normal man; and evidence that 100 per cent intravenous feeding is a practical clinical procedure. The latter has important clinical application in conditions such as gunshot wounds of the abdomen.

MCGILL UNIVERSITY  
ENDOCRINOLOGY

One of the outstanding groups working on the application of the principles of endocrinology to clinical medicine is that directed by Dr. J. S. L. Browne at McGill University. During the past five years this group has been particularly interested in the relation of the adrenal cortex to protein and carbohydrate metabolism.

The development of a biological test for one of the adrenal cortical hormones has made possible the elucidation in considerable detail of the role of the adrenal glands in adapting the body to conditions of unusual stress. This hormone is absent in the urine of most normal individuals, but it appears after surgical operations, infections, burns and other damage to body tissue. This increased output from the adrenal cortex appears to be part of the mechanism of the body for combating injuring conditions of various types, and

further study may lead to a better understanding of how the body resists shock, infection and other such attacks. It has already been possible, by the use of adrenal cortex extract, to prevent shock in normal rabbits after severe abdominal operations.

Investigations are also under way on the abnormal conditions of miscarriage, sterility and toxemia of pregnancy in the human being. These studies have led to a better understanding of the mechanism of spontaneous miscarriage and have made possible a better-informed approach to the treatment of this condition and to that of essential uterine hemorrhage.

The Foundation in 1946 appropriated \$30,000, available over a period of five years, in support of this work.

NATIONAL RESEARCH COUNCIL  
RESEARCH IN PROBLEMS OF SEX

Since 1931 The Rockefeller Foundation has made grants totaling over \$1,000,000 to the Committee for Research in Problems of Sex of the National Research Council for allocation to institutions conducting research on problems related to sex. In 1946, \$80,000 was appropriated for allocation to such groups over the next two years.

During the past quarter of a century the Committee for Research in Problems of Sex, under the leadership of Robert M. Yerkes, has guided the development of our knowledge of sex physiology. At the beginning of this period little was known aside from some purely morphological data and a few uncorrelated observations derived from the lore of animal husbandry. It is now possible to state in precise detail the morphological and functional alterations which take place during the waxing and waning of sexual activity in innumerable species

of animals. The contributions of over a dozen different hormones to various aspects of the process have been identified; many of these substances have been characterized chemically and provided in pure form for use by the physician and stock-breeder. Of recent years the groundwork has been laid for an equally comprehensive study of the behavioral and psychic processes determined by sex.

Groups currently supported by the Committee for Research in Problems of Sex are interested in such subjects as the neural and hormonal basis of sexual behavior in vertebrates, the hormonal control of ovulation, methods of assay of the estrogens, sex determination and dimorphism in fishes, the genetics and behavior of mating types in paramecia, effects of sex hormones on the reproductive system of the adult female opossum, experimental sex determination in amphibians and sex development in human embryos and fetuses.

In addition to the general grant described above, the sum of \$120,000 has been allocated to the National Research Council for the work of Dr. Alfred C. Kinsey, of Indiana University, over a three-year period. The group under Dr. Kinsey has for eight years been engaged in a case-history study on human sex behavior, through the use of interviews with persons selected to provide a cross section of the country. Over 10,000 anonymous histories are in the files at Indiana University. All sections of the United States have been covered, although about 50 per cent are in the Middle West. The case histories include all ages from three years to over 70; whites and Negroes; Protestants, Catholics and Jews; members of various occupational classes, including students, laborers, clerical workers, business personnel, professional men and denizens of the underworld.

The small-sample technique used calls for a statistically adequate sample of each of the several segments which constitute the population, and a subdivision on the basis of the factors which most obviously affect the behavior of the group. Dr. Kinsey has found that patterns of sexual behavior are modified by at least 11 factors: sex, race-cultural group background, age, marital status, educational background, occupation class (social prestige of occupation) of subject, occupational class of parent, rural-urban background, religious group, degree of adherence to the religious group and age at onset of adolescence.

The findings of this research project are to be reported in a series of books, the first volume of which will probably appear within the next year. An extensive library for use in the research has been accumulated, and many persons working in medicine and psychiatry, recognizing the unique quality of the collection, are lending their efforts to help make it the leading library in the field.

#### COLUMBIA UNIVERSITY ENDOCRINOLOGY

Rockefeller Foundation support to the research work of the group at the College of Physicians and Surgeons of Columbia University has been going on since 1928, both with direct grants from the Foundation and indirect allocations made from a Foundation grant to the National Research Council Committee for Research on Problems of Sex. A three-year grant of \$30,000 was made by the Foundation to this project in 1946.

The research program is directed to gaining further information on reproductive processes in man and animals, on the factors involved in dwarfism and the restoration of growth, and in the alterations of blood

proteins in animals experimentally deprived of pituitary, thyroid or adrenal glands. Professor Philip E. Smith directs the work and has associated with him Professors Earle T. Engle, Aura E. Severinghaus and B. Goldzieher. Following their earlier work on rodents they have largely turned their attention to primates, including human patients in a nearby clinic, keeping in mind the application of findings to human problems of growth and sterility.

Reproduction in the female involves the formation and liberation of ova accompanied by the synchronous development of a proper uterine condition for implantation of the egg if it is fertilized, and the later nurturing of the embryo. Ovarian function is primarily dependent on hormones secreted by the pituitary body, or hypophysis, whereas the uterine preparation is dependent in turn on hormones formed by the ovary.

The secretion of another endocrine gland, the thyroid, is also essential for the complete response of the uterus including its menstrual phase. By means of thyroidectomy, administration of thyroid and the hormones of the ovaries, the fact has been established that the thyroid in primates is essential for the reproductive processes, thus placing the administration of thyroid in disturbed menstrual conditions on a rational basis.

It has been shown by a number of investigators that in both monkeys and man the ovarian secretions are unnecessary for continuance of pregnancy. The newly formed organ, the placenta, assumes the hormone-producing role previously performed by the ovaries. The work at Columbia has shown, moreover, that even the hypophysis, the master endocrine gland of the body, is not essential to the maintenance of pregnancy in monkeys. The baby develops normally when this gland

is removed, but the birth mechanism is interfered with. The baby will survive, but after birth and delivery of the placenta the mother frequently goes into shock and dies. From this and various clinical observations it now seems probable that the placenta not only substitutes for the ovaries in the maintenance of pregnancy but can also take over the functions of the pituitary necessary to the life of the prospective mother.

#### CHILD RESEARCH COUNCIL OF DENVER

Although any branch of science dealing with human beings — medicine and psychology, in particular — is based on the assumption that we can distinguish the normal from the abnormal, it is very difficult to say exactly what the normal is. An unusual study of normality which has been in operation for 17 years is that of the Child Research Council of Denver, which is affiliated with and housed in the School of Medicine at the University of Colorado. During this period the physical growth and psychological development of a group of about 100 children have been followed by means of carefully chosen tests drawn from the medical, biological, physical and social sciences. Since it is recognized that normality is not synonymous with mean or average, the Denver study is helping to develop a concept which takes into account the "normal" variations between human beings.

Most investigations carried out on children have made use of these children as experimental subjects in order to contribute to some specific field of knowledge such as psychology, education or anthropometry. In contrast to this, the Child Research Council makes use of each such specific field of knowledge to contribute to the understanding of some one child. The individual

human being is the focal point upon which investigations center. This means that each boy and girl whose development is followed from birth becomes practically a continuous research problem. Since there is a definite limit to the number of observations or tests which can be done safely on any one child at any one age level, the group, headed by Dr. Alfred Washburn, attempts to select those tests which seem to offer the greatest hope of yielding useful information. The methods used are without hesitation changed if some prove to be of little use, or when new ideas or techniques appear which may possibly increase the understanding of a child.

The various modes of approach to the study of each child can be classified in three rough categories. The first includes the various direct observations, measurements or other procedures designed to picture so-called physical growth. In the second category, an effort is made to uncover some of the secrets of bodily functions — to discover the changes during growth in those biological processes which are included mostly in the medical sciences of physiology and biochemistry. The third category is that of psychological and social functioning.

One of the long-range objects of the study is to pick out a few easily observed changes which can be identified as occurring frequently enough in conjunction with other important changes to be used as significant indices. Long periods of time are required to determine what variations from the average are consistent with health, and which ones on the other hand point to the beginnings of disease. The variations may be in the shape and size of bodily structures, or in the function of different organs or systems, such as the nervous system, or in the rate and order of body growth. Normal

standards are used ordinarily as a means for recognizing deviations great enough to denote disease, but an equally valuable use of such standards may be the help they give in characterizing differences between individuals who are healthy but who function differently.

The Rockefeller Foundation has contributed to support of the Child Research Council since 1939. In 1946, \$27,560 was appropriated, to be available over a period of two years.

UNIVERSITY OF CAMBRIDGE  
PSYCHOLOGICAL LABORATORY

Another study of the "normal" is under way at the Psychological Laboratory of the University of Cambridge, under the direction of Dr. F. C. Bartlett. This study is concerned with problems of human and animal behavior, and some of the major matters under investigation are the fundamental character of the mechanics of bodily and mental movement, the difference between "perceptual ability" and "intelligence," the development and deterioration of skilled performance, the effects of transposition of stimuli on human learning, and the sort of data used by ordinary men in thinking about the everyday problems of existence.

The first grant from The Rockefeller Foundation to this project was made in 1936, when methods for the experimental study of normal human thinking were developed. Dr. Bartlett's group was not interested in the trained thinker at work in his own special field, but rather in what sorts of data the ordinary person uses when he arrives at conclusions about, for example, his own health, or situations arising from his personal contacts, or social matters generally, and how he treats the evidence which he has selected. The methods used are

capable of extremely wide field application and may yield results of great interest.

A study of the effects of transposition of stimuli and stimulus groups in human learning has demonstrated that simple visual patterns can be shifted in such a way that no part of them affects any retinal elements hitherto excited, but the learned response to those patterns remains as immediate and as successful as it was before. It is also certain that this effect breaks down with certain types, or complications, of transposition, and the precise limits within which immediate success can normally be effected can thus be more exactly determined than they have been up to the present.

New techniques have been developed for a thorough experimental study of the fundamental character and conditions of the mechanics of bodily and mental movement. Following a pioneer investigation of skill fatigue, it has become possible to construct methods for the controlled experimental investigation of human behavior requiring skill of a considerable degree of complexity. The evidence suggests that the use of these methods may lead to very much more objective ways of studying minor and major temperamental disturbances.

In 1946, \$44,550 was appropriated, to be available over a period of five years, to meet the need for three or four advanced students free to devote all their time to the advancement of basic knowledge in this field.

#### TAVISTOCK CLINIC

The Tavistock Clinic in London was founded in 1920 for the study and treatment of ambulatory patients suffering from the milder psychiatric disturbances such as anxiety states, hysteria, morbid fears and psychosomatic illness. No in-patients are accepted, but regular

psychiatric and psychological examinations and treatments are given by a staff of physicians and psychologists. Courses in psychiatry for physicians have been given under the auspices of the University of London. A distinguishing feature of the clinic has been its emphasis upon the importance of psychology and psychiatry to patients who need not be in mental hospitals.

The war gave an unexpected opportunity to several members of the Tavistock staff to work together in the British Army and to find other persons with similar interests and capacities who are eager to continue their collaboration in civilian life. Thus a group of psychiatrists, psychologists and sociologists have come together at the Clinic, with Dr. W. R. Bion as chairman, and the Clinic's services are being substantially enlarged to assist in solving the domestic and administrative problems now facing families, industries and areas of settlement in Britain.

In the sphere of family anxieties, the group has obtained the collaboration of clinicians with a view to meeting the following needs: an advice service on family problems; psychotherapeutic treatment for selected families or family members; technical advice and participation in resettlement consulting agencies, marriage guidance agencies, antenatal clinics and obstetrical hospitals, infant welfare clinics, nursery schools and juvenile employment agencies.

A study of cultural patterns was made for the purpose of defining the psychological differences between Nazis and non-Nazis. Evolving from a prolonged clinical interview covering childhood, family culture and a number of personality traits, this study has now broadened into a battery of objective tests with the addition of an unusual scorable attitude questionnaire capable of eliciting the Fascist syndrome almost as well as a prolonged

interview. The method opens up many new fields of inquiry into the relation of domestic and nursery culture patterns to later political and economic behavior, and is applicable to group or institutionalized behavior.

Other fields of interest are group dynamics and group therapy, with emphasis on occupational therapy of neurosis; vocational selection and guidance; the maintenance of worker morale in industry; postgraduate teaching and field work in psychodynamic theory and psychotherapeutic practice, group dynamics and therapy, clinical psychology and social psychology.

The Tavistock Clinic in 1946 received an appropriation from The Rockefeller Foundation of \$89,100, available over a period of three years.

#### UNIVERSITY OF CAMBRIDGE

#### NEUROPHYSIOLOGY

For over 100 years the two main problems of muscle and nerve physiology have been to decide what molecular changes occur when an impulse travels down a nerve fiber and when a muscle fiber contracts. There is now a strong possibility that both of these problems may be solved or that the main lines of the solution will become clear.

Work on the mechanism of muscle and nerve fibers has gone on in the Physiological Laboratory at the University of Cambridge for many years. The Laboratory is well placed for such work, being in close touch with the Department of Colloid Chemistry, the Department of Biochemistry, the Molteno Institute and the Cavendish Laboratory, in all of which research is being done in related fields.

Three promising young investigators are now working in the Physiological Laboratory under the direction of Professor E. D. Adrian, and The Rockefeller Founda-

tion this year appropriated \$60,750 for the work of this group over a period of five years. The research program will be concerned with the mechanism of transmission and initiation of the nervous impulse, the properties and stability of cell membrane in nerve and muscle, the ionic relations in nerve and muscle, and the physico-chemical basis of muscular contraction.

#### MCGILL UNIVERSITY

##### BRAIN CHEMISTRY

The neuronal explosions which characterize focal epilepsy may be attributed to metabolic or chemical changes in nerve cells which render them unstable and permit them to fire with unusual frequency or force. The focus of electrical discharge in the brain can be located by electroencephalography and by inspection and stimulation during operation under local anesthesia; such a focus is often situated near a brain scar or an area of brain atrophy. Carefully localized operations to remove the scar and adjacent brain in conscious patients are being developed to give maximum therapeutic effect with minimal interruption of normal brain function.

Such operations are now performed at the Montreal Neurological Institute of McGill University under the direction of Dr. Wilder Penfield, and their importance to research lies in the fact that they provide living brain tissue suitable for biochemical studies that would be impossible in autopsy material. The unique opportunity is therefore presented to study the living brain of the epileptic or psychotic patient, and for analyzing the various enzyme systems participating in cerebral metabolism and their alteration in disease. The Rockefeller Foundation, which since 1932 has provided funds to McGill University for the development of teaching

and research in psychiatry, neurology, neurosurgery, and the physiology and pathology of the nervous system, in 1946 appropriated \$50,000 for research in brain chemistry over a period of five years under the general direction of Dr. Donald McEachern, Chief of the Neurological Service. Mr. K. A. C. Elliott, an expert enzyme chemist, has been appointed to the staff of the Neurological Institute and will have charge of the chemical side of studies in brain metabolism. Such study, it is hoped, will throw light on the nature of the abnormal irritative state that exists in focal epilepsy, and, in addition, on the cause of other types of epilepsy.

An operation has also been developed for the removal of selected gyri in the frontal lobes of the brain in patients suffering from psychiatric disturbances characterized by anxiety or compulsion. These patients receive extensive psychiatric care under the direction of Dr. Ewen Cameron, and studies similar to those described above are made on their brain tissue. Also under way are biochemical studies on brain tissue from animals with seizures due to focal brain damage, which may be caused by nutritional factors or metrazol or electric shock.

#### UNIVERSITY OF BRUSSELS NEUROPHYSIOLOGY

In 1939, two grants were made by The Rockefeller Foundation toward the work of Professor Frederic Bremer of the University of Brussels, but payment was interrupted by the war. This year the Foundation made an appropriation of \$15,000 for a four-year period, toward Professor Bremer's research in neurophysiology. A portion of the grant will be used to repay the Francqui Foundation and the University of Brussels for funds

advanced to this project during 1941-1945; the remainder will be used for the salary of one or more assistants and for the purchase of equipment.

During the German occupation Professor Bremer was able to continue his work in secret, and descriptions of the work carried out have been published in the *International Archives of Physiology* and the *International Archives of Pharmacodynamics*; others are forthcoming in *Reports of the Belgian Society of Biology*, the *International Archives of Physiology*, and the *Bulletin of the Academy of Medicine*. These papers concern thermal paralysis of the nerve, the mechanism of contractions caused by the drug veratrine, the study of delayed potentials of the muscle, the mechanism of neuromuscular contracture and the meaning of Richet's generalized inhibition.

Professor Bremer and his assistants are now conducting research on the general physiology of nerve centers and, in particular, the meaning of intermediary spinal potentials, the mechanism of neuronic synchronization, the processus of Wallerian degeneration of the nerve, the electroencephalographic aspect of hysteria and epilepsy, the pathogenic mechanism of fever, and the role of the nervous system in the pathogenesis of symptoms of intestinal obstruction and paralytic ileus.

UNIVERSITY OF ZURICH  
NEUROPSYCHIATRY

The Rockefeller Foundation has since 1933 been supporting work at the Institute for Brain Research of the University of Zurich, and this year \$18,200 was appropriated for research in nervous and mental disease under Professor W. R. Hess, over a period of three years.

Child Guidance Unit,  
Favistock Clinic,  
England.

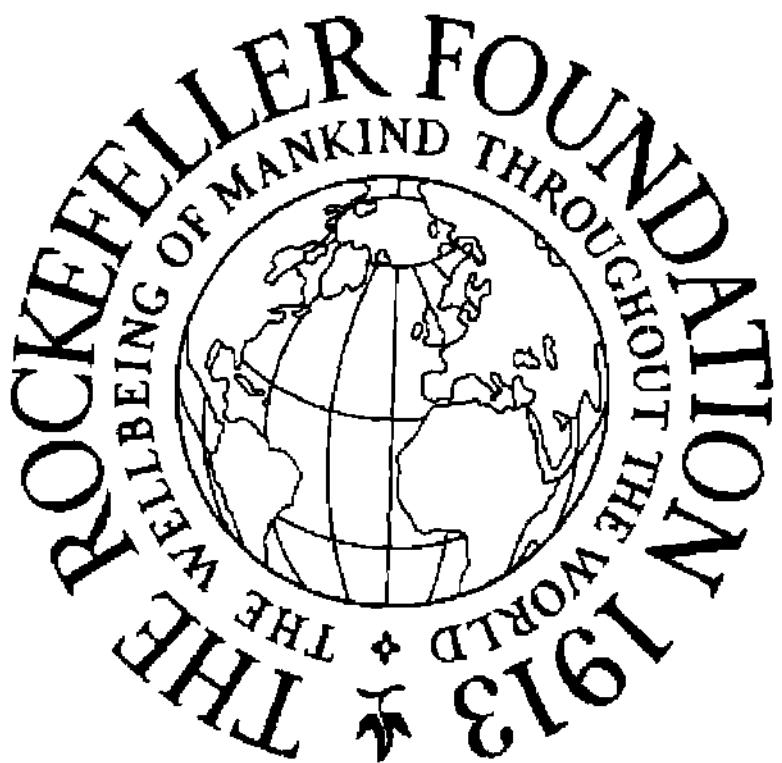


Photograph Excised Here



Photograph Excised Here

New laboratory building, National Institute of Cardiology  
Mexico City



## Photograph Excised Here

- Commission to study the medical and public health situation in China, with Chinese officials.

The Institute for Brain Research combines departments of psychiatry, neuroanatomy, neurosurgery and physiology for a coordinated attack on the problems of nervous and mental disease. The work is principally concerned with evaluating the effect of localized damage or stimulation of the brain on behavior. Meetings at which members of all departments come together are held regularly for the purposes of discussion and coordination of the work.

The Rockefeller Foundation grant will be used for salaries of technical assistants and materials and supplies.

UNIVERSITY OF LONDON  
GALTON LABORATORY

The Rockefeller Foundation in 1946 appropriated \$22,275 for research in problems of human heredity at the Galton Laboratory of the University of London, under the direction of Dr. L. S. Penrose, over a period of four and one-half years.

The Galton Laboratory was founded in 1904 to carry on the work of Sir Francis Galton on the influences which may "improve or impair the racial qualities of future generations, either physically or mentally." At present it is seeking to analyze the specific genetic factors which may contribute to human disease or malformation. This work is of importance since our scientific knowledge of the complexities of human heredity is still very primitive, and many of the principles derived from work on lower animals are difficult to apply without important modifications.

The staff of the Laboratory consists of four professional and three technical workers, all but one of whom are on full time. Besides engaging in teaching and re-

search the Laboratory publishes the scientific journal called *Annals of Eugenics*.

The main research projects are concerned with the following: definition of hereditary characteristics in man which will prove useful for linkage tests, the genetics of fetal malformations such as anencephaly and mongolism, and the identification of genetic factors in two adult diseases, carcinoma of the breast and eclampsia. The group under Dr. Penrose is cooperating with the staffs of University College Hospital and Central Middlesex Hospital in this research. The Foundation's grant will be used to provide some supplementation of salaries and to meet the expenses of a trained social worker in collecting family histories.

#### NATIONAL INSTITUTE OF CARDIOLOGY

The National Institute of Cardiology in Mexico City is devoted to teaching and research in diseases of the heart and blood vessels. Although it has no formal connection with the National University, its clinic and laboratories serve for the teaching of cardiology to university students, and the Director of the Institute, Dr. Ignacio Chavez, is a professor in the Faculty of Medicine of the University. The Division of Pharmacology and Physiology is under the direction of Dr. Arturo Rosenblueth, formerly Assistant Professor of Physiology at Harvard Medical School.

A Mexican donor has recently given \$80,000 for an additional laboratory building, which will make possible a considerable expansion in research on physiology and pharmacology. The Rockefeller Foundation in 1946 appropriated \$18,000 for the purchase of equipment for the new laboratories during the year ending May 31, 1947.

## OTHER SUBJECTS

### MEDICAL PUBLICATIONS — FRANCE

In spite of the lack of apparatus, gas and electricity, and experimental animals, French scientists were able to carry on fruitful research during the war years. The results of this research were published, although the journals in which they appeared were of extremely small circulation and are now in the main out of print. English and American medical publications have been made available to libraries in France and in countries where French is widely used, but a similar distribution of French publications proved more difficult.

It is for this reason that The Rockefeller Foundation appropriated \$8,600, available in the year beginning March 1, 1946, to aid in a wider dissemination of the results of French medical research during the war. A careful selection of the best in clinical and laboratory studies produced in France since 1939 has been made under the direction of Dr. Pasteur Vallery-Radot and his assistant, Dr. Jean Hamburger. In addition to those articles which had already been published, some new articles have been written for a collection to be published in both French and English editions of 2,500 each.

### GRADUATE MEDICAL EDUCATION SCHOOL OF MILITARY NEUROPSYCHIATRY

Beginning in 1943, three grants were made by The Rockefeller Foundation for graduate medical education in the Eighth Service Command of the Army. Featured in this program were visits of civilian physicians to military hospitals where they gave instruction and advice to physicians in the service. This experience has shown the need for providing advanced training in the

various specialties for regular Army medical officers, and nowhere is this need more acute than in the field of psychiatry.

In order to supply the Army in the future with trained specialists, a medical training center has been established at Fort Sam Houston, Texas, directly under the supervision of the Surgeon General. The School of Military Neuropsychiatry occupies the Brooke General Hospital under the immediate direction of Colonel William C. Porter, an experienced teacher in psychiatry. A series of three-month courses are given to groups of about 25 men, most of whom will enter the Army directly from residencies in neurology and psychiatry. Several shorter orientation courses are attended by larger groups of medical officers visiting the center for training in other branches of medicine.

The Rockefeller Foundation in 1946 appropriated \$15,000, available for one year, for this program of graduate medical education in psychiatry, thus providing funds for the director of the Neuropsychiatry Consultants Division to invite competent civilian teachers to spend a week or two each month at the school. In this way valuable instruction by specialists will be provided and a closer liaison established between civilian and military medicine.

#### UNIVERSITY OF MICHIGAN

#### INSTITUTE FOR TEACHERS OF PREVENTIVE MEDICINE

Significant new developments are taking place in the field of medical economics and medical care, with important federal and state legislation pending, and with the American Medical Association sponsoring a nation-wide program of voluntary prepayment for medical services. Medical students must have an under-

standing of the broad social and economic problems underlying these proposals if they are to assume positions of leadership in community planning when they enter practice.

Teachers of preventive medicine can be the most immediate focal point in attacking these problems. Therefore \$10,000 was appropriated by The Rockefeller Foundation for the expenses of holding an Institute for Teachers of Preventive Medicine at the University of Michigan School of Public Health. The Institute, sponsored by the School of Public Health, the Conference of Professors of Preventive Medicine and the Foundation, was held from September 30 to October 4, 1946, and was attended by approximately 100 representatives of medical schools in the United States and Canada, with additional representation from such organizations as the Association of Schools of Public Health and the American Medical Association. The first two days of meetings were devoted to the general subject of preventive medicine and its place in the curriculum; the second two days to the field of health economics. The Foundation's grant was used to pay honoraria and expenses of consultants, to provide syllabi and teaching materials developed in connection with the Institute, and to assist in paying the expenses of the teachers of preventive medicine in attendance.

#### NATIONAL HEALTH COUNCIL, INC.

#### COORDINATION OF VOLUNTARY AGENCIES

The Annual Report of the Foundation for last year contained a description of the findings of a study of voluntary health agencies which was financed by The Rockefeller Foundation and conducted under the direction of the late Selskar M. Gunn. A report was compiled

by Philip Platt, Mr. Gunn's assistant, and published in September 1945.

As a critique of voluntary health work in the United States, this report has created a profound impression upon the executives and trustees of organizations to whose maintenance Americans contribute over \$50,000,000 annually. The National Health Council is consequently receiving a very large number of requests from national, state and local agencies for advice and guidance. To meet this demand and to attempt a much-needed coordination of the whole voluntary health movement, the Council plans to organize a full-time paid staff under a well-qualified director. A field service is available to states and cities where there are urgent problems of coordination of voluntary health agencies. New York has already organized a local health council and provides an ideal field for the demonstration of the best procedures in coordination.

The Rockefeller Foundation in 1946 appropriated \$78,500 to the National Health Council for the expenses of this program of coordination of voluntary health agencies during 1946.

#### MEDICAL ADMINISTRATION SERVICE, INC.

Medical Administration Service is a voluntary association of laymen and physicians providing counsel and information to industries, governmental agencies, labor unions and private agencies which plan or maintain programs of medical care. The Medical Sciences Division of The Rockefeller Foundation has contributed to the expenses of this organization since 1942. Since this Division's program in social medicine has been transferred to the International Health Division of the Foundation, a terminal grant of \$9,700 was made to

Medical Administration Service for expenses during the three-month period ending June 30, 1946.

#### NEW YORK UNIVERSITY

Although traveling fellowships for younger scientists and physicians have been available in adequate numbers for several decades, relatively little has been done to facilitate interchange of persons with administrative experience and responsibilities. Visits to Europe by men at the professorial level should be of benefit both to the visitors, through the stimulation of contact with another professional environment, and to the European institutions through the visiting professors' information and counsel.

One such visit in 1946 which proved of great value was that of Dr. Donal Sheehan, of the Department of Anatomy of the New York University College of Medicine, to the Faculty of Medicine of Prague and to other schools in Czechoslovakia. A grant of \$11,750 was made by The Rockefeller Foundation to cover the expenses of Dr. Sheehan's visit. His varied experience both in the special field of anatomy and the broader one of medical education and administration qualified him to assist in rehabilitating the Faculty, which suffered serious losses of personnel and material during the past five years. Since at present there exist only 5,000 physicians in Czechoslovakia, the need for expansion of teaching staff and facilities in the medical schools of that country is urgent.

#### UNIVERSITY OF SAN MARCOS

##### PATHOLOGY EQUIPMENT

For a number of years The Rockefeller Foundation has been contributing to work in the medical and nat-

ural sciences at the University of San Marcos in Lima, Peru, the oldest university in the Western Hemisphere. Seventeen grants in aid have been made, and 13 fellowships have been granted in the medical sciences. This year, \$20,000 was appropriated for equipment and supplies for the Department of Pathology of the Faculty of Medicine, available for one year.

A number of young teachers from the Faculty of Medicine have come to the United States for additional training through fellowships granted by the University or The Rockefeller Foundation. On their return, several have devoted most of their time to research on problems of high altitude physiology in the Institute of Andean Biology, a dependency of the Faculty of Medicine. All others hold posts in the Faculty. The Government has recently increased the budget to establish several full-time posts of the assistant professor category, to be filled by young men trained in the United States on fellowships.

Plans for a new physical plant adjoining the chief teaching hospital have been worked out, and the first unit, a pathology building, is nearing completion. The Rockefeller Foundation grant this year is for the purchase of modern equipment for this unit.

#### UNIVERSITY OF ZAGREB PUBLIC HEALTH TEACHING

During the occupation and struggle for liberation, Yugoslavia lost 12 per cent of its population, and almost two million people became homeless. The public health problems of the country after liberation were augmented by the outbreak of epidemics of typhus, typhoid and malaria, with insufficient numbers of physicians, nurses and other auxiliary personnel to care for the sick. About

1,500, or 25 per cent, of the physicians living in Yugoslavia in 1941 had lost their lives by the end of the war. The need of the country for trained public health personnel is, therefore, very serious, and the Government is encouraging medical education.

The Faculty of Medicine of the University of Zagreb has 1,400 students, and 1,800 hospital beds are at its disposal. The Faculty is enlarging its Department of Public Health and Social Medicine with special emphasis on field teaching, the classes going into towns and villages where, as physicians and public health officers, the students will later work.

Dr. A. Stampar, who is well known in the field of public health education and administration, is professor of public health and social medicine at the University of Zagreb, and will supervise expenditures under a grant from The Rockefeller Foundation of \$25,000, available over a three-year period, for the transportation and maintenance of students and staff in field work. A small portion of the money will go for stipends of resident fellows, who may later be sent abroad for further training.

#### FELLOWSHIPS

The Medical Sciences Division of the Foundation administered a fellowship fund amounting to \$125,000 in 1946, as compared with \$70,000 in 1945. The sum of \$125,000 has been appropriated for work during 1947. There were 48 fellowships active during the year. Thirty-eight of the fellows studied in the United States, with 3 each in Canada and England, 2 in Sweden, and 1 each in France and Denmark. Subjects studied were allergy, child psychiatry, anesthesiology, biochemistry,

surgery, biophysics, pharmacology, preventive medicine, epidemiology, chest surgery, physiology, nutrition, cardiology, internal medicine, neurosurgery, anatomy, child surgery, neurology, endocrinology, neurophysiology, pediatrics, hematology, neuroanatomy, neuropathology, gastroenterology, experimental medicine, psychoanalysis and otorhinolaryngology. The medical sciences fellows came from the following countries: Brazil, Czechoslovakia, France and Norway, 4 each; Argentina, Denmark and the United States, 3 each; 2 each from Canada, Chile, Lebanon, Mexico, Holland, the Philippines, Uruguay, Venezuela and Yugoslavia; and 1 each from Cuba, Ecuador, Finland, Peru and Sweden. Thirty-nine of the fellowships were new in 1946; 8 were continued from 1945 and 1 from 1944.

A plan was inaugurated in 1943 whereby selected centers of medical teaching were provided with funds, not to exceed \$8,000 each, for the purpose of providing postwar appointments for the further training of medical graduates from the armed services. It was thought that this plan would help cope with the serious losses in numbers and quality of young leaders and investigators caused by the shortening of the period of study and the interruption of many internships and residencies. In 1946, 24 medical schools and hospitals, under grants from The Rockefeller Foundation, appointed 99 young men to assistantships, internships or residencies after their release from military service.

The Medical Research Council of Great Britain received continued support from The Rockefeller Foundation in 1946 for advanced postdoctoral fellowships. Eight such fellowships were awarded this year under a grant of \$50,000 which will be available for two and one-half years.

Ever since 1922, The Rockefeller Foundation and the General Education Board have contributed funds to the National Research Council for medical fellowships. Roughly 60 per cent of 313 former fellows now occupy teaching and research posts in medical schools. The war, of course, sharply reduced the number of suitable candidates for these fellowships, but now many men whose training was interrupted by the war are anxious to resume advanced studies in the medical sciences basic to clinical practice. To meet this increased need for advanced training, The Rockefeller Foundation in 1946 appropriated \$200,000, available over a three-year period, to the National Research Council; under a previous grant 7 fellows were appointed during the year.

#### GRANTS IN AID

The Medical Sciences Division of The Rockefeller Foundation in 1946 awarded 52 grants in aid, ranging in amount from \$300 to \$7,500 and totaling \$149,950. Aid went to institutions in 19 countries, among them, the universities of Amsterdam, Groningen, Leiden, and Utrecht; the American University of Beirut, Syria; the University of Paris; Charles University in Prague; the University of Wroclaw, Poland; the universities of Ljubljana and Zagreb, Yugoslavia; the General Medical Council of Great Britain, the Department of Health for Scotland; the Serafimer Hospital, Stockholm; the University of Helsinki; the University of Copenhagen; the University of the Philippines; the University of Brazil; and the University of San Marcos, Lima, Peru. Institutions in the United States receiving aid included the Jefferson Medical College of Philadelphia, Duke University, the University of Illinois, the Dartmouth Eye Institute, the Emma Pendleton Brad-

ley Home, in Providence, the Massachusetts General Hospital, Boston, and the New York Zoological Society.

Fourteen of the grants extended aid for research and teaching to the following branches: physiological optics, pediatrics, pharmacology, roentgenology, psychiatry, neurosurgery, microbiology, biochemistry, biophysics, psychotherapy, legal medicine, neurology, comparative psychology and industrial hygiene. A grant in aid to Yale University made possible a Conference on Graduate Training in Pharmacology, designed to promote the training of teachers and investigators in the interests of clinical medicine. Funds provided by The Rockefeller Foundation also facilitated a visit to the United States by a delegation on medical education from the General Medical Council of Great Britain.

The most significant feature of the grant-in-aid program this year was the predominating number of awards made for travel of scientists, mainly European, to centers of research in this country and abroad. Out of the 52 grants in aid, 35 were for this purpose. It was felt that such observational visits would be more valuable than any other form of aid in reestablishing contacts broken by the war. In addition, special funds were set aside in two grants in aid to facilitate the distribution of periodicals and textbooks among war-ravaged medical libraries.

The geographical distribution of the grants was as follows: United States, 15; Holland, 4; France, 4; England, 4; Czechoslovakia, 3; 2 each for Denmark, Norway, Finland, Syria, Yugoslavia and the Philippines; and 1 each for Belgium, Sweden, Scotland, Poland, Switzerland, Argentina, Brazil and Peru. The 2 remaining grants covered the expenses of purchasing and shipping periodicals and textbooks to foreign countries.

## **THE NATURAL SCIENCES**

## THE NATURAL SCIENCES STAFF

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## THE NATURAL SCIENCES

INTRODUCTORY STATEMENT	133
EXPERIMENTAL BIOLOGY	
California Institute of Technology: Biology and Chemistry	134
Karolinska Institute: Biochemistry	136
Duke University: Biochemistry	137
University of California: Biochemistry	138
Carlsberg Foundation: Biochemistry	139
Columbia University: Biochemistry	139
University of Upsala	141
Harvard University: Tissue Structure	142
University of Texas: Genetics	143
Amherst College: Biology	144
Roscoe B. Jackson Memorial Laboratory	145
Iowa State College: Genetics	146
University of Oslo: Biology	148
Columbia University: Immunochemistry	149
University of California: Immunochemistry	150
University of Utrecht: Biochemistry	151
Washington University: Physiology and Embryology	152
Eidgenössische Technische Hochschule: Organic Chemistry	153
University of Leeds	153
University of Oxford: Biochemistry	154
University of Utrecht: Spectroscopic Biology	157
University of Wisconsin: Biochemistry	158
Mexican Agricultural Program	160
OTHER GRANTS	
Centre National de la Recherche Scientifique	162
National Academy of Sciences	163
Swarthmore College: Astronomy	164
California Institute of Technology: Astronomy	166
Massachusetts Institute of Technology: Electronic Computation	168

American-Soviet Science Society	169
Brown University: Applied Mathematics	170
New York University: Applied Mathematics	171
FELLOWSHIPS	172
GRANTS IN AID	173

## THE NATURAL SCIENCES

THE program of the Division of the Natural Sciences continues to emphasize research in experimental biology. In 1946, the grants in this principal segment of the natural science program totaled approximately \$1,010,000, and were awarded to 23 organizations.

The techniques of physics, chemistry and biology are, in many of the projects, combined in an attempt to throw light on various fundamental biological problems. Immunochemistry, X-ray structural chemistry, protein chemistry and protein structure, enzyme chemistry, growth and regeneration, genetics, biochemical work on growth-promoting substances in plants, experimental embryology, the organic chemistry of natural products, analysis of biological tissues by physical techniques, studies of penicillin and similar compounds, spectroscopic biology and a study of nitrogen fixation in plants: these are some of the fields of research covered by Rockefeller Foundation grants in experimental biology. The work in genetics includes studies of the wild *drosophilae* found in the United States, research on the effect of temperature on mutations and studies in mammalian genetics, including the breeding of animals especially resistant or susceptible to certain diseases.

Closely allied with the work in experimental biology is the program of agricultural research in Mexico, which attempts to provide improved strains of basic food crops and to aid the Government in developing trained

personnel, research facilities and methods for the effective utilization of the agricultural resources of the country.

Eight organizations received grants totaling \$935,000 for work which is, at least in part, outside the program in experimental biology. These grants will make possible the purchase of equipment for approximately 35 natural science research laboratories in France; the attendance of scientists at a series of informal conferences on current research problems held in France, and at a large international conference in the United States; research in positional astronomy; the completion of the 200-inch telescope on Mount Palomar; research on electronic computation; the exchange of scientific information between the Soviet Union and the United States; and training and fellowships in applied mathematics at two American universities.

### EXPERIMENTAL BIOLOGY

#### CALIFORNIA INSTITUTE OF TECHNOLOGY

#### BIOLOGY AND CHEMISTRY

The Rockefeller Foundation has contributed continuously since 1930 to California Institute of Technology for projects in the natural sciences. The present program of combined research in the fields of biology and chemistry at California Institute of Technology is concerned with such subjects as immunochemistry, serological genetics, chemical genetics and X-ray structural chemistry. A one-year grant of \$50,000 was made in 1946 to provide further support for this combined program.

X-ray diffraction studies of amino acids, peptides, proteins, viruses and related substances have been carried out under the direction of Professor Linus C.

Pauling, and the technique has been developed to the point where it is possible to determine in complete detail the structure of the more simple instances of such substances. Structural determinations of this sort have been made for two amino acids and for two peptides.

Work in immunochemistry under Professor Pauling and Professor Dan H. Campbell has been directed toward the structure of antigens and antibodies and the nature of their reactions. Evidence has been gathered in support of the lattice or framework theory of serological precipitation and agglutination. Preparations showing some of the properties of artificial antibodies have been produced by a process of denaturation and renaturation of proteins in the presence of antigens. These artificial antibodies are stated to be qualitatively similar in their properties to natural antibodies, but are quantitatively inferior. Thus far, they have been shown to have some protective power for mice against pneumococcus pneumonia. Physicochemical studies on antisera are designed to provide information concerning their structure and properties; this research includes investigation of the action of increased temperature and pressure and of the presence of urea and other denaturing agents on the activity of antitoxins and other antibodies.

This work in immunochemistry has developed in close relation to researches in serological genetics carried on by Professors A. H. Sturtevant, Albert Tyler and Sterling Emerson. Professor George W. Beadle has recently been appointed head of the Division of Biology, where such studies are under way. Most biological processes involve reactions in which the components exhibit remarkable specificity, the best known being the antigen-antibody and enzyme-substrate interactions. Those fundamental problems of genetics and embryology

which are characterized by analogous reaction specificities are being studied under their program in serological genetics.

In the field of chemical genetics, it has been found possible with X-ray and ultraviolet treatments to produce mutations in the genes of *Neurospora* and other organisms that direct specific chemical reactions. Studies have shown that the synthesis of such biologically important compounds as vitamins, amino acids, purines and pyrimidines is under direct control of genes. It seems probable that each step in the synthesis, within these living organisms, of these and other substances is under the immediate control of a specific gene. In addition to providing a new approach to the problem of gene action, this knowledge furnishes a way of systematically breaking down metabolic processes into their component parts.

KAROLINSKA INSTITUTE  
BIOCHEMISTRY

The Rockefeller Foundation in 1946 appropriated \$22,500 for research at the Karolinska Institute, Stockholm, under the direction of Professor Einar Hammarsten, of the Institute of Chemistry, and Professor Torbjörn Caspersson, of the Institute for Cell Research, during the period ending December 31, 1947.

For many years Professor Hammarsten has been working intensively in the field of protein chemistry. One of his principal immediate aims is to investigate the formation of polynucleotides, or complex nucleic acids, in an attempt to determine the relation between the synthesis of these substances and proteins. For this purpose he is now using radioactive nitrogen and carbon

isotopes to trace the breakdown products of proteins in the living organism.

Professor Caspersson is working in the broad field of cell organization and function, with particular emphasis on the problem of protein synthesis within the cell, the role of various cellular constituents in regulating this activity, and the evolutionary significance of the mechanisms involved. With the aid of numerous colleagues he has sought to apply all the modern techniques of ultramicroanalysis and microspectrography to studies of protein metabolism in active nerve cells, the interaction of lignine and cellulose chains in plant tissues, and the structure of the nucleus in bacteria and other lower plants.

#### DUKE UNIVERSITY

#### BIOCHEMISTRY

The research program at Duke University under the direction of Professor Hans Neurath has been concerned with three closely interrelated problems: the general aspects of protein structure, the mechanism of protein denaturation, and the relation of normal serum globulins to antibody globulins. Numerous papers reporting the results of this research have been published since The Rockefeller Foundation began supporting the project in 1939. This year \$25,000 was appropriated, to be available over a five-year period.

Growing out of previous research on the characterization by chemical and physicochemical methods of proteins, and on the relation of protein structure to biological activity, the present program is chiefly concerned with proteolytic enzymes, a group of substances which within living organisms govern the detailed chemical

processes whereby proteins are broken up into their constituent parts, and which also presumably govern the synthesis of proteins within the body. With the availability of synthetic substrates specific for certain proteolytic enzymes, it appears feasible to demonstrate enzyme-substrate complex formation and to study the effects of varied external conditions on the complex. Such studies require the isolation in pure form and the characterization of specific enzymes, and will be extended to the effects of activators and inhibitors on the enzyme-substrate complex, and to the effects of enzyme inactivation on the formation and nature of the ensuing complex.

#### UNIVERSITY OF CALIFORNIA

#### BIOCHEMISTRY

A grant of \$15,000, available for three years, was made in 1946 to the University of California for research in enzyme chemistry under the direction of Professor David M. Greenberg, Acting Chairman of the Division of Biochemistry.

While considerable information is available concerning the processes of protein and amino acid degradation, comparatively little is known about protein synthesis. Professor Greenberg is testing the hypothesis that protein synthesis is not brought about merely by the condensation of amino acids, but rather by condensation of keto-acid amides. He is also interested in the activation of certain enzymes by metal ions and by specific reducing agents. Since pure enzyme sources are necessary to obtain valid results on the above problems, work is also going forward on the isolation and purification of certain enzymes.

The Rockefeller Foundation's grant will be used to

pay stipends of assistants and to purchase equipment and supplies.

#### CARLSBERG FOUNDATION

##### BIOCHEMISTRY

The Rockefeller Foundation in 1946 made a five-year grant of \$27,500 to the Carlsberg Foundation for research in biochemistry of K. U. Linderstrøm-Lang and Heinz Holter at the Carlsberg Laboratory.

The work of Dr. Linderstrøm-Lang and his associates has developed along two main lines: the study of enzyme systems in tissues and cells, and research on the constitution of proteins as evidenced by enzyme action. This research program seeks to elucidate the manner in which protein is synthesized within the body, and the mechanism of cell development and function in living organisms.

An outstanding contribution from this laboratory has been the development of many precise microanalytical methods. Among these is an extremely delicate apparatus for studying the metabolism of eggs and single cells, and a method for determining nitrogen in quantities as small as one millionth of a gram.

Dr. Linderstrøm-Lang proposes to share funds under this grant with Dr. Heinz Holter, who was recently named head of the newly created Department of Cytochemistry at the Carlsberg Laboratory.

#### COLUMBIA UNIVERSITY

##### BIOCHEMISTRY

In 1946, \$25,000 was appropriated by The Rockefeller Foundation, of which \$9,000 was made available for one year to Columbia University for research in biochemistry, \$1,500 to be used for the work of Professor Erwin

Chargaff on the chemical mechanisms of cell organization, and \$7,500 for the fundamental clinical application of isotope tracer techniques.

Professor Chargaff is interested in discovering and analyzing the forces which direct the organization of cells and tissues. What, for instance, makes the partly excised liver of an animal regenerate at an incredible speed, to form new liver tissue, and then stop at a prescribed moment? Judging from our knowledge of other biological processes, it would seem that there exists a delicate equilibrium between growth-promoting and growth-inhibiting substances, and between compounds that direct the differentiation of the cell and others that counteract it. The multiplication of viruses and bacteriophages is probably directed by similar mechanisms, and so, perhaps, is the formation of antibodies. It should be remembered that when an invading microorganism or virus grows in a tissue, it not only acts on its surroundings but is also acted upon by the surrounding cells of the host. Three groups of chemical compounds — proteins, nucleic acids and lipids — which are concerned with nuclear division and cell organization are being studied by Professor Chargaff.

The Department of Biochemistry at Columbia has for more than ten years been developing technical methods for the use of isotopes in physiological research, applying these techniques to fundamental problems of metabolism, training students in the necessary special skills, and consulting and collaborating with other similar centers. Now it is believed that the information, experience and skills acquired in this fundamental research have reached a level at which they can profitably be applied to certain clinical problems of disease. Such researches are planned and directed by a special

interdepartmental committee. The Foundation's grant will provide the salaries of a biochemist and a physicist to assist the clinical application of such isotope tracer techniques.

#### UNIVERSITY OF UPSALA

The Institute of Physical Chemistry, which was established at the University of Upsala in 1928, has an outstanding record for research. Its director has since the beginning been Professor The Svedberg, an outstanding figure in the field of physical chemistry in Europe and a Nobel prize winner. The group at the Institute during the academic year 1945-1946 numbered 57 scientists working with Professor Svedberg as students or collaborators. Such numbers account in some measure for the more than 200 articles and monographs written since 1940, but do not sufficiently emphasize the able leadership with which Professor Svedberg has developed this scientific unit and kept it at a high productive level. Today he and his colleagues include the following among their research interests: microanalysis of amino acids and peptides, adsorption analysis of various liquids and gases, chemical study of gramicidin, investigation of such viruses as that causing poliomyelitis, biochemistry of the tubercle bacillus, electrochemistry of blood serum proteins, chemistry of cellulose and its derivatives, and the chemical processes underlying the formation of various synthetic polymers such as polyvinyl compounds and synthetic rubber.

To the original equipment for ultracentrifuge studies of the molecular properties of proteins, hormones and enzymes have been added improved facilities for diffusion, electrophoresis and adsorption analyses, supersonic wave generators, ultrasensitive osmotic bal-

ances and a small neutron generator for experiments in biophysics and biochemistry. In the past year plans have been completed for the installation in a new building of a 90-inch cyclotron for the more intensive production of biologically useful radioactive isotopes.

Foundation aid to this project began in 1931 and continued through the war years. The Foundation is proud of its long association with the work of this distinguished Institute of Physical Chemistry; and in 1946 made an outright grant of \$50,000 to be used toward the expenses of research in the physical-chemical properties of proteins and other substances of biological and medical importance. This grant is intended to cover the remaining period of leadership of Dr. The Svedberg.

#### HARVARD UNIVERSITY

##### TISSUE STRUCTURE

For the past few years the work of the Department of Anatomy at Harvard Medical School has centered on the development of histochemical methods; and considerable progress has been made in the identification of various cellular constituents. Under the direction of Dr. George B. Wislocki, the research program has the following objectives: exploration of the normal tissues and organs of the body with a variety of histochemical procedures; the study of organs normally having functional cycles, such as liver and intestinal epithelium, by cytochemical methods; exploration of the cytochemical reactions of the endocrine glands with reference to functional changes; definition and characterization of growth and aging processes by histochemical means; investigation of the staining properties of pure proteins by acid and basic dyestuffs and the correlation of these findings with histological staining

observed in tissue sections; discovery of new histochemical reactions for the identification and localization of enzymes, hormones, lipoids, carbohydrates, etc., in cells and tissues.

A six-year grant of \$36,000 has been made by The Rockefeller Foundation to enable Dr. Wislocki to add one younger investigator to the staff, and to provide additional research facilities for the staff and for fellows and visitors who may be accepted for training in the department.

UNIVERSITY OF TEXAS  
GENETICS

In 1938 Professor John T. Patterson, of the Department of Zoology at the University of Texas, began to trap wild drosophilae for his studies in genetics. These flies have been more thoroughly studied by geneticists than any other animal, because they are small enough for economical housing and feeding, and yet are varied enough in the differentiation between species to present contrasts for study. In coloration, wing structure, bristles and many other features the species vary in striking ways; in size there are some adults 100 times larger than adults of the dwarf species. In addition, the cells of their salivary glands contain giant chromosomes marked by a series of light and dark bands, presumably associated with genes or groups of genes, which can be clearly seen under a high-power microscope. Maps have been drawn of the chromosomes, and it is possible to identify certain bands with certain characteristics of the fly. Different species have chromosomes differing in size or shape, or even in the number contained in each cell. These data indicate that new species originate with alterations in chromosome structure. It seems

likely that such alterations are influenced by environmental factors, though there is evidence that in a few instances cross-fertilization between two species is the agency which produces the mutation.

When Professor Patterson began his collecting and study of wild strains of drosophilae, only 30 species of the fly were known to exist within the United States. Now, through the efforts of his assistants and of geneticists in other parts of the country, well over 100 have been described. The purpose of this collecting, analyzing and comparing is to trace the relationship of new species to old and to identify the isolating mechanisms which bring about the observed differences.

The first Rockefeller Foundation grant in aid was made to Professor Patterson's work in 1936. This year, \$30,000 was appropriated for a period of three years.

AMHERST COLLEGE  
BIOLOGY

Continuing its support of research in genetics and embryology at Amherst College, The Rockefeller Foundation in 1946 appropriated \$39,000 to be available over a five-year period.

The research directed by Professor H. H. Plough is concerned chiefly with the effect of temperature on mutations of fruit flies, and on the genetics of natural populations of this species. Temperature shock treatment of drosophilae has been shown to result in as much as a sixfold increase in the visible mutation rate, but only a twofold increase in the lethal mutation rate. The spontaneous lethal mutation rate differs, sometimes strikingly, in stocks of different origin and even in stocks derived from the same locality. There is some suggestion that the mutation rate of different stocks may also differ in its response to temperature shock.

The work at Amherst on the genetic structure of wild populations of *Drosophila melanogaster* was among the earliest research on this species in the United States. In striking contrast to the same species in Russia and in Europe, and to other drosophila species in America, it appears that this species breeds in large rather than small populations. In addition, this species, originally a native of tropical and subtropical areas exclusively, winters in large numbers in temperate regions of the United States and is now a native species of these areas. The concentration of lethal and semilethal genes found in the samples of wild flies analyzed in this study is by far the highest yet reported in natural populations of drosophilae.

Professor Oscar E. Schotté is working on experimental embryology, with particular emphasis on the study of the process by which amphibians are able to regenerate portions of their bodies, such as a whole leg, after removal by accident or surgery. The nature of the skin appears to be of primary importance, since if the wound-healing processes are too rapid, regeneration cannot take place. The nervous system also plays a decisive part. A histological study of the events connected with wound-healing processes is under way.

#### ROSCOE B. JACKSON MEMORIAL LABORATORY

Since 1938, various appropriations have been made by the Divisions of the Natural and Medical Sciences to the Roscoe B. Jackson Memorial Laboratory for general research in mammalian genetics, for the breeding and selling of pure genetic strains of mice for research programs, and for construction of an animal building and research on the genetics of behavior and personality traits of dogs. The Division of the Natural Sciences in 1946 made available \$75,000 for a two-year

period, to be used for the construction and equipment of additional quarters for animals for research.

During the war the laboratory performed an important service by supplying pure genetic strains of mice to other research centers all over the country. Because of growing needs for space both for research and experimental breeding, Dr. C. C. Little, the Director of the Laboratory, has planned construction of three units, connected with the main building, each to furnish a complete setup for housing the animals needed by a group of research workers. The maintenance of such facilities for experimental breeding and testing of new genetic lines forms an essential part of the research program of the laboratory. The continuous development of new genetic strains of mice contributes much to their commercial supply service. Among such special genetic strains now under heavy demand are mice with high incidence of spontaneous skin cancer, hairless mice for experiments with radioactive agents, and mice with various lethal factors.

A technique for the transference of living ova from one mouse to another is used to study the intrauterine influence of the foster mother on the developing embryo, as contrasted with purely hereditary effects. Whole ovaries have also been transplanted with a high degree of success.

#### IOWA STATE COLLEGE GENETICS

The Rockefeller Foundation has since 1940 been contributing toward research in physiological genetics at Iowa State College under the direction of Professors E. W. Lindstrom and J. W. Gowen. In 1946 a three-year grant of \$18,000 was made for work concerned with

the genetic bases of disease resistance and of hybrid vigor.

Six strains of mice have been established with susceptibility to mouse typhoid ranging from 8 per cent survival to 95 per cent survival; the pathogen, *Salmonella typhimurium*, has been divided into three pure-breeding bacterial lines of high, medium and very low virulence. Exposure of the six strains of mice to the three lines of bacteria shows that the ensuing morbidity and mortality are the result of interaction of the genetic constitutions of the host and the pathogen. Resistance to disease is closely associated with the number of leucocytes in the blood and with the number of macrophages in the liver and spleen. The differentiation is deeper than just cell number, since it includes the enzyme system by which the macrophages digest bacteria. The liver cells of resistant strains are, for example, able to carry on vital functions even in the presence of large amounts of toxin.

Studies of genetic resistance of chickens to a virus disease, leucosis, show that it is possible to establish susceptible strains; in addition, males are much more susceptible than females in all strains and their crosses. The female of the resistant strain seems capable of transmitting through her egg something which protects the progeny from the most severe effects of leucosis.

It is well known that inbreeding of plants or animals generally results in a marked loss of vigor, of reproductive ability and of disease resistance; whereas the vigor and productivity which accompany hybridity of inheritance are equally striking phenomena. In drosophilae the crosses between inbred races show egg productions of 20 to 100 per cent more than their parents. Professors Lindstrom and Gowen are attempting to discover why

there are these differences. Results so far clearly show that the vigor of racial crosses is the result of gene combinations, not cytoplasmic dissimilarity. The gene action by which hybrid vigor is accomplished is thus of particular significance, and a technique has been worked out by which this action can be studied more intensively.

UNIVERSITY OF OSLO  
BIOLOGY

The University of Oslo received a one-year grant of \$30,000 from The Rockefeller Foundation in 1946 for reconstruction of its research facilities in the natural sciences.

The occupation of Norway began in April 1940, and by late 1943 all teaching and research activity at the University of Oslo had ceased. More than 1,500 students were in concentration camps and many members of the faculty were in prison or had been denied the use of their laboratories and libraries. The important marine biological station at Drøbak was almost completely ruined; but except for blast damage, which destroyed all of its windows and fragile laboratory equipment, the physical plant of the University escaped serious harm.

Under Rector Otto Louis Mohr the University is attempting to solve the two outstanding problems of the immediate future: the necessity for rapidly educating the four academic generations whose training was interrupted by the war, and the similarly pressing need to give the faculty every material opportunity to continue and expand their research activity. Progress has already been made in solving the student problem even though it has necessitated overcrowding and the diver-

sion of research funds toward the purchase of routine laboratory equipment and supplies. A good beginning has also been made in reorganizing research programs, but the men are handicapped by lack of trained research assistants and of sufficient modern scientific apparatus.

The Rockefeller Foundation's grant will be used primarily for the purchase of specialized scientific equipment to help modernize methods of research in biology, biochemistry, biophysics, physiology and nutrition. A portion will be used for repairing and re-equipping the marine biological experimental station.

#### COLUMBIA UNIVERSITY IMMUNOCHEMISTRY

The science of immunology was originally concerned almost wholly with the resistance of the human body to disease. However, investigators, seeking the extension and perfection of control which could only come with a real understanding of the mechanism of immunity, soon directed their attention to the detailed study of the specific biological and chemical reactions which occur when certain foreign materials are introduced into the body.

Professor Michael Heidelberger of Columbia University has for many years been engaged in the chemical study of problems of serological reaction. He and the expert team working under him have developed techniques for the quantitative measurement of complement, the thermolabile, nonspecific component of normal blood serum which is destructive to bacteria and other cells with which it is brought in contact by the immune body.

A three-year grant of \$25,000 has been made by The

Rockefeller Foundation to Columbia University for research in immunochemistry under the direction of Professor Heidelberger.

UNIVERSITY OF CALIFORNIA  
IMMUNOCHEMISTRY

For some time it has been known that human blood is of four types, but it was not until 1940 that Landsteiner and Wiener found that the red blood cells possess additional substances known as Rh antigens. The name "Rh" comes from the fact that they occur in the blood of Rhesus monkeys, and "antigens" because they have the property of causing the blood of other individuals to form antibodies which destroy the Rh blood cells.

When an Rh-negative individual receives repeated transfusions of Rh-positive blood the first transfusion is normally symptomless, and the transfused cells may survive satisfactorily in the recipient's circulation. Once sensitization has been established, however, it appears to remain permanently.

Approximately one marriage in eight involves an Rh-positive man and an Rh-negative woman, and in about one pregnancy in ten the fetus is Rh-positive and the mother Rh-negative. The same sort of reaction takes place when sensitization occurs in pregnancy as when blood transfusions are made: the fetus may bring about the production of antibodies in its mother. The mother's blood in turn may then destroy many of the developing infant's own blood cells, giving rise to serious and often fatal consequences. It is estimated that this hemolytic disease occurs in one in every 250 to 400 births.

Professor Melvin Calvin, of the Department of Chemistry, University of California, and Dr. Robert Evans,

of the Department of Medicine of Stanford University, are trying to separate the Rh antigen from the body of the red blood cell and to identify it chemically. There is hope that study of the pure antigen may lead to methods of preventing hemolytic disease in newborn infants. The study of the Rh problem is also important because of its general relation to the obscure question of what makes a substance antigenic. Very few such materials have so far been isolated and adequately described.

The Rockefeller Foundation has made a two-year grant of \$22,000 to the University of California for this research under the direction of Professor Calvin. A grant in aid of \$2,000 was also made in support of collaborative work by Dr. Evans at Stanford University.

#### UNIVERSITY OF UTRECHT BIOCHEMISTRY

In 1939 The Rockefeller Foundation made an appropriation to the University of Utrecht for the work of Professor F. Kögl during a five-year period. Since payment on this grant could not be completed, the Dutch Government advanced the balance to the University during the war years. The Foundation has now made a grant of \$15,600 to the University of Utrecht for reimbursement to the Government and for support of Professor Kögl's research during a one-year period.

Professor Kögl is engaged in biochemical studies of growth-promoting substances in plants, notably auxin and biotin. His present investigations of the unexplained photoinactivation of one of the auxins may be of considerable significance for plant physiology. He is also continuing work on an unusual form of glutamic acid, an amino acid occurring as a decomposition prod-

uct of protein, which he found in hydrolysates of tumor proteins. Using deuterium as a tracer, Professor Kögl has demonstrated that the biosynthesis of this form proceeds quite differently from that of the common glutamic acid.

WASHINGTON UNIVERSITY  
PHYSIOLOGY AND EMBRYOLOGY

Aid to research at Washington University was continued this year with a grant of \$30,000 for work in experimental embryology and general physiology, over a three-year period, under the direction of Professor Viktor Hamburger and Professor H. B. Steinbach of the Department of Zoology.

The program in experimental embryology is focused on the early development of the nervous system of vertebrates, using amphibians and chicks as experimental material. The work is mainly directed toward the elucidation of the interaction between nerve centers and the peripheral structure, such as a leg or an eye, to be innervated. The conditions prevailing at the periphery determine what embryonic cells will develop into nerve cells, and how these nerve cells will reproduce. Thus, the removal of a limb bud from the embryo results in underdevelopment of the corresponding nerve center, while the grafting on of extra limb buds results in overdevelopment of the nerve center.

The second phase of the research is more biochemical in nature, and is concerned with the study of the enzyme systems which control the development of the young organism. Professor Steinbach's work is particularly concerned with determining the localization and concentration of these enzymes at various stages in the growth of the embryo.

The Foundation's grant will be used to provide technical assistance, supplies and equipment.

#### EIDGENÖSSISCHE TECHNISCHE HOCHSCHULE

##### ORGANIC CHEMISTRY

Starting in 1938, The Rockefeller Foundation has given continual aid to research in the organic chemistry of natural products under the direction of Professor L. Ruzicka at the Laboratory of Organic Chemistry of the Eidgenössische Technische Hochschule in Zurich. An appropriation of \$150,000 was made this year as an outright grant in support of Professor Ruzicka's work.

Professor Ruzicka's laboratory has grown over the past nine years until now it is one of the largest academic groups in Europe working on the organic chemistry of natural products. Rockefeller Foundation support has been used primarily to enable scientists from other countries to work in this laboratory. In consequence, during the war the staff of 70 included 20 scientists from 13 countries other than Switzerland.

The program of research has been developed along the following main avenues: extraction and isolation of hormone preparations from various animal organs; investigation of metabolic products of molds, including penicillin; synthetic chemistry of various steroids related to the male hormone; study of heart-activating substances; elucidation of the structure of a group of compounds known as triterpenes; and structural studies on strychnine.

#### UNIVERSITY OF LEEDS

Continuing support begun in 1934, The Rockefeller Foundation has made a one-year appropriation of \$10,000 to the University of Leeds for research on the

analysis of biological tissues by physical techniques under the direction of Professor W. T. Astbury.

Since 1929 Professor Astbury and his co-workers have been studying the molecular architecture of keratins, muscle, blood, chromosomes, and various proteins and carbohydrates by means of X-ray, electron microscope, ultraviolet and infrared techniques. His early studies on stretched and unstretched wool fibers have recently been valuable in identifying keratins, myosin, fibrinogen and fibrin as belonging to the same group of fibrous proteins. These analyses are now being extended to other complex long-chain proteins.

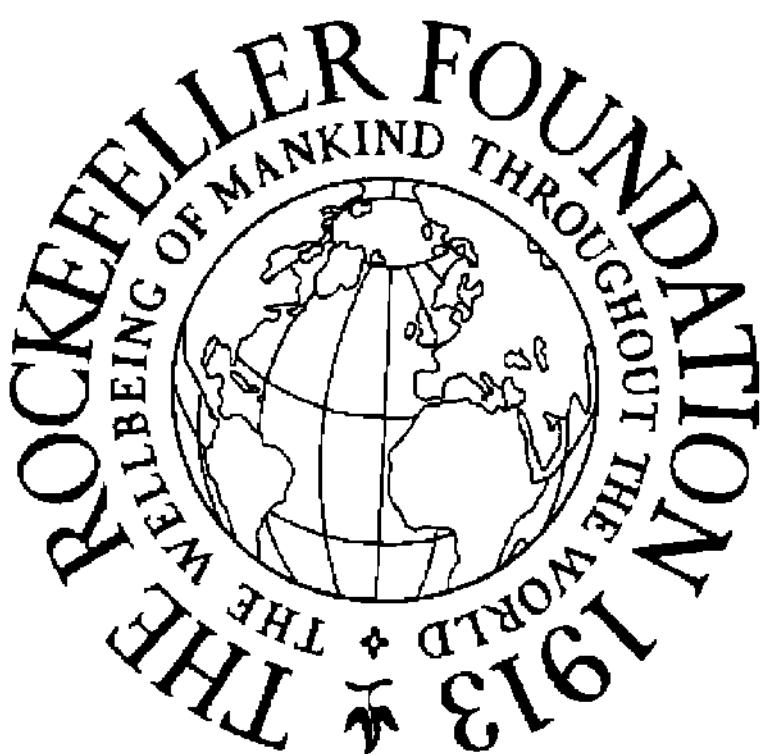
Late in 1945 Professor Astbury was elected by the University of Leeds to the Chair of Biomolecular Structure, created especially for him as recognition of the effective role he has played in uniting the disciplines of biology and physics.

#### UNIVERSITY OF OXFORD

#### BIOCHEMISTRY

Natural Sciences Division aid to research on antibiotics by Sir Howard W. Florey at the Sir William Dunn School of Pathology of the University of Oxford began in 1936, and was continued this year with a grant of \$19,000 to be used for technical assistance and the purchase of supplies and equipment. Sir Howard was knighted in 1944 for his important work on penicillin and related materials, and he and his associate, Professor Ernst B. Chain, the following year shared the Nobel prize for physiology and medicine with Sir Alexander Fleming.

The present program of Sir Howard's group is centered around attempts to improve the yield of penicillin, the search for improved types of this mold and studies of



## Photograph Excised Here

Erecting the 200-inch telescope on Mount Palomar.



Photograph Excised Here

Visit of President Miguel Aleman to cooperative agriculture project, Chapingo, Mexico.

the chemical structure of penicillin and similar compounds. They are also engaged in a broad search for antibiotics, and in determining the best conditions for growth of such materials. Part of the present grant will be used to provide special equipment, such as a refrigerated centrifuge, to deal with the many unstable antibiotics under study.

UNIVERSITY OF Utrecht  
SPECTROSCOPIC BIOLOGY

Rockefeller Foundation support for research in spectroscopic biology primarily at the University of Utrecht began in 1934 and continued until 1940, when payments on the current grant ceased because of the impossibility of transferring funds. The Dutch Government then advanced funds during 1941-1944. This year a grant of \$23,040 was made in order to reimburse the Dutch Government and to support research for another year.

This joint research program in biophysics and biochemistry is under the direction of Professor A. J. Kluyver of the Laboratory for Microbiology of the Technical University at Delft, and of Professor J. M. Milatz of the Institute of Physics at the University of Utrecht. Under their cooperation, the tools and techniques of physics are being used to analyze the fundamental biological problems involved in photosynthesis, photoluminescence and phototropism.

Professor Milatz has been particularly interested in the mechanism of photosynthesis, and has applied quantum statistics to determine curves describing the process. These are tested experimentally by subjecting plants to light of carefully controlled intensity and wave length. New and precise quantitative methods for

measuring the response of plants and animals to directional light have likewise been devised.

Professor Kluyver and his associates at Delft have been studying the agents responsible for absorption of light in living tissues and have shown that, in bacteria and such other lower plants as the algae, the agent is probably the organic pigment beta carotene. Their discovery that the active substance in the production of light by plants and animals is a naphthoquinone has led to attempts at synthesis.

UNIVERSITY OF WISCONSIN  
BIOCHEMISTRY

Nitrogen is a key element of proteins and is vital in the perpetuation of plant and animal life. Animals are unable to utilize the free nitrogen in the air, which must first go through a process of "fixation," in which it is chemically combined with other elements into a biologically usable compound. So-called symbiotic nitrogen fixation results from the cooperative activity of leguminous plants and certain species of bacteria which invade the roots of legumes and form tubercles or nodules which furnish the plant with nitrogen.

Although much has already been accomplished in the way of control over the symbiotic nitrogen fixation process, there is every reason to believe that there are possibilities of even greater utilization when more complete knowledge of this biological-chemical process is available. For several years Professor Perry W. Wilson of the Department of Agricultural Bacteriology at the University of Wisconsin has been conducting basic research on the intimate processes of the responsible living cells; and biochemistry, bacteriology, biophysics and botany have been combined in an attack on the

problem. During the past six years, Professor Wilson and his associates have published 28 papers concerning the enzymatic systems involved, the physiology and nutrition of the relevant plants and bacteria, and the influence of various environmental factors on the fixation reactions.

A grant of \$22,500 has been made by The Rockefeller Foundation for Professor Wilson's research over the next five years in cooperation with Professor R. H. Burris of the Department of Biochemistry.

Studies of the special growth requirements of the root nodule bacteria and of the manner in which the cells obtain energy from different sources are almost completed. These microorganisms must obtain from their host not only carbohydrate for energy and minerals for growth but also two vitamins — B<sub>1</sub> and B<sub>2</sub>. There is strong evidence that biotin, a specific growth factor for yeast, may function in a similar capacity with the root nodule bacteria.

A large part of this program is concerned with the effect of the chemical composition of the host plant on such functions of the fixation system as invasion of the plant, development of nodules and fixation of free nitrogen. These functions are highly sensitive to the supply of nitrogen and carbohydrate. If the concentration of carbon dioxide in the air is increased, this speeds up the rate at which carbon dioxide is converted into carbohydrate. In leguminous plants, nitrogen fixation is likewise accelerated, and it appears that ordinarily the limiting factor for nitrogen fixation is the quantity of carbohydrate furnished the bacteria by the host plant.

A fundamental question in symbiotic nitrogen fixation is the mechanism of the invasion of the plant and development of the nodule. The mode of infection of the

root hair, the development of the infection thread and the proliferation of the host cells are followed by modern cytological methods. A quite unexpected discovery made in this work was that cells in the nodular tissues always have twice as many chromosomes as do ordinary cells of the host plant.

Attempts to determine the over-all process by which the system of plant and bacteria builds the inert nitrogen molecules of the air into living protoplasm have been made by two modes of attack: definition of the responsible enzyme system, and isolation of possible chemical compounds intermediate in the process. The response of the enzyme system to such changes in the environment as the pressure of nitrogen and of oxygen has been determined. Hydrogen gas specifically inhibits uptake of free nitrogen by leguminous plants, although it does not affect assimilation of combined nitrogen; the means by which this inhibition takes place are not yet known.

#### MEXICAN AGRICULTURAL PROGRAM

The Mexican Agricultural Program began with a survey of opportunities in the summer of 1941 by a commission of experts; their recommendations were accepted by the Board of Trustees of The Rockefeller Foundation, and the program was put into operation the next year. This program has two principal objectives: to bring modern scientific methods to bear on the improvement of the quality, yield and production of the basic food crops of Mexico; and to aid the Government in developing the scientific personnel, research facilities and methods essential to the effective utilization of the agricultural resources of the country for an improved society.

The program was adopted by and made an integral part of the organization of the Mexican Secretariat of Agriculture. The Foundation's field director holds the official position of Chief of Special Studies of the Mexican Secretariat of Agriculture, and office and laboratory facilities are provided in one of the Secretariat buildings. The scientific staff supported by the Foundation numbers seven persons, specializing in genetics and plant breeding, plant pathology, botany, entomology, agronomy and soil science. The Mexican Secretariat of Agriculture has commissioned to the program 23 graduates of recent years from the National College of Agriculture, and provides their basic salaries. Assistance is also given by closely related professional personnel in the Government.

The investigations under way include improvement of corn, beans, small grains and a few crops of supplementary interest, by means of selection, testing, breeding and disease and pest control; chemical studies of disease and pest control; studies in crop production, rotation and soil management; surveys of the plant diseases and insect pests of Mexico; maintenance of a plant introduction garden for the testing of legumes, grasses and other forage and soil-improving plants of potential value; maintenance of a seed laboratory in the Secretariat of Agriculture; development of an agricultural experiment station on the grounds of the National College of Agriculture at Chapingo and the improvement of regional substations for testing improved crop varieties; development of a serviceable agricultural library; assistance in the training of young Mexican agricultural scientists through participation in research and through a fellowship program.

The progress of the work has created an urgent need

for greenhouses for such aspects of the program as studies of wheat rusts and smuts and corn root rot, life cycle studies of insect pests, studies of soil salts, production of selected plant materials for genetic studies, and the like. For this reason, in addition to an appropriation of \$225,000 for general expenses of the program during 1947, The Rockefeller Foundation has set aside \$25,000 toward the cost of providing greenhouse facilities.

#### OTHER GRANTS

##### CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE

One of the major Rockefeller Foundation projects during 1946 is represented by two grants to the Centre National de la Recherche Scientifique, the first amounting to \$250,000 for allocation to approximately 35 of the leading natural science research laboratories of France for items of special equipment, and the second involving \$100,000 for expenses of attendance of non-French scientists at a series of small informal scientific conferences. Both grants are available for the period ending June 30, 1949.

The Centre National de la Recherche Scientifique has two functions: to carry on research and to assist research in French universities. It is organized in over 30 sections, covering all the fields of pure and applied science, with a directorate representing the leadership of French science. Many of the leaders are former Foundation fellows who have knowledge of and sympathy for science in other countries. An important phase of the Centre's plan is that of developing research in the provincial universities as well as in Paris.

The grant for equipment is designed to fill the immense need of French scientists for modern equipment

and supplies which, largely unobtainable in France, can be purchased in the United States, Sweden, Switzerland or England. The plan is to allot credits for the purchase of such equipment to about five laboratories each in chemistry, physics, biochemistry, physical chemistry and experimental biology, and to one or two laboratories each in biophysics, microbiology, physiology and geophysics.

The scientific conferences will be organized relative to some modern problem or group of problems, such as chemical genetics, protein structure, enzyme chemistry, cellular physiology, recent advances in statistical techniques, magnetic theories and structure of metals. Such small, informal meetings will give an excellent opportunity for eight or ten French scientists to join with a few non-French colleagues in discussion of their fields of interest, and to bring themselves up to date on work done during the war, as well as to plan the most fruitful lines along which work can now proceed. Two such conferences, one on the subject of high polymers and the other on the theory of optical images, were held in 1946; and these conferences have been judged most successful.

#### NATIONAL ACADEMY OF SCIENCES

War has a very serious effect on science in that it interrupts the normal training of future scientific leaders and shuts off the free exchange of ideas on which scholarship must depend. It is for this reason that one of the most important activities of the Natural Sciences Division during this postwar period is the stimulation and support of international gatherings of scientists, in order to reestablish lines of scholarly communication between different parts of the world.

One such conference was held in October 1946, under the joint auspices of the National Academy of Sciences and the American Philosophical Society. The Rockefeller Foundation and the Carnegie Corporation each pledged \$50,000 toward expenses. Thirty-eight scientists representing Italy, England, France, Sweden, Denmark, Belgium, Czechoslovakia, Switzerland, Australia, Hungary, Holland, Norway, Rumania, New Zealand, Poland, South Africa, Canada, Mexico, Peru, Finland, Brazil, Chile, Greece, China, India and Argentina attended the autumn meetings of the two sponsoring organizations, heard addresses on present-day scientific and cultural problems, and visited universities, research institutes and museums. The travels of these scientists in the United States took them to scientific centers throughout the country where special programs were arranged for them.

It was felt that both the foreign visitors and their American hosts profited from the discussion of the present status and future needs of those fields of science which are specially dependent on international collaboration or which have a significant influence on international affairs.

#### SWARTHMORE COLLEGE

#### ASTRONOMY

Over the past quarter of a century there has been a great growth of interest in astrophysics. Important as are these newer phases in which physical techniques, notably spectroscopy, are applied to stellar problems, the older and more classical interests in positional astronomy remain fundamental and of modern interest.

The Sproul Observatory at Swarthmore College is

one of the important United States observatories particularly emphasizing positional astronomy; and it is equipped with a visual refractor of 24-inch aperture and 36-foot focal length, the third largest in the country. The photographic plate collection numbers about 22,000 and is increasing at the rate of over 1,000 every year.

When Professor Peter van de Kamp assumed direction of the Observatory in 1937, a program was initiated to make a systematic survey of the motions of the nearer stars, for the purpose of discovering and studying irregularities in the motion of these stars. Such deviations point to unseen companion objects which reveal themselves because of their gravitational pull on the primary star. Since the irregularities are generally small, a high accuracy of observation is required. This is done by accumulating many photographic plates on as many nights as possible.

A parallel investigation has been carried out by Professor Kaj Aage Strand on double stars. This project provides accurate relative locations in wide double star systems. Recent work has led not only to precise determinations of the orbital characteristics of established "classical" double stars, but has yielded irregularities in the orbits of several of the doubles, thus proving the presence of faint, unseen companion objects in these systems.

There is evidence that the state of multiplicity of stars is high and that probably every other star is double or triple. This fact has important bearings on the status among the stars of our sun, which appears to be unique in the absence of a companion star, which, however, is made up for by an abundance of planets and other attendants.

An outright grant of \$50,000 has been made by The Rockefeller Foundation toward support of an enlarged program of research in astronomy at Swarthmore.

**CALIFORNIA INSTITUTE OF TECHNOLOGY  
ASTRONOMY**

The large telescopes of the world have increased our understanding of the architecture of the universe and of the structure and behavior of matter, for matter exists outside the earth in physical states which cannot be produced in terrestrial laboratories. Astrophysics is a partner with physics and chemistry in deriving basic knowledge which has for its fundamentals the structure of atoms, the laws of their interaction and combination, the regularities of behavior of aggregations both inorganic and organic, together with the concepts of space, time and energy.

Construction of the 200-inch telescope on Mount Palomar necessitated many radical departures from past practice. A ribbed structure was chosen for the great reflector instead of a solid block of glass. To avoid deformation by gravity as the orientation of the reflector changed, a set of 36 supports was provided over the back of the disk, each support being a complicated mechanism automatically adjusting its force according to the orientation of the disk. The whole mass of the telescope, some 530 tons, which must rotate about a polar axis to follow the stars, is floated almost without friction on a film of oil fed to the bearing surfaces under pressure. The observer may sit within the tube of the telescope and be carried along with its motion. The dome rotates automatically to follow the motion of the telescope. Research on vacuum coating of glass by metal led to a process for aluminizing the mirror disk to form

its reflecting surface, a surface greatly superior to silver and much more permanent. The thermal insulation of the dome is so effective that the temperature at the observing floor is held constant over the day to within one degree, thus avoiding distortion of the mirror.

The 200-inch telescope is in effect an exceedingly fast camera to photograph dim celestial objects and to resolve the light from them into spectra of fine detail. By virtue of its great aperture and short focus its theoretical range into space is over twice that of the 100-inch one at Mount Wilson, so that the volume of space which can be studied is eight times that previously studied. But the field of the sky which is sharply focused at one setting is minute in extent. After the project was under way a new type of telescope was proposed by Bernhardt Schmidt. These Schmidt telescopes are great wide-angle cameras that can photograph a broad area of the sky at one exposure. They are thus ideal supplements to the 200-inch, serving to find the objects most important for detailed study. The construction of two such auxiliary telescopes has been added to the original 200-inch program.

Construction of the observatory buildings began in 1928. The glass disk for the 200-inch telescope was delivered in Pasadena, and the work of grinding it to its figure went on continuously until the war; work is now in the delicate stage of final polishing to bring it to a true paraboloid to within a millionth or two of an inch. The buildings at the observatory site are now complete, and it is hoped that all telescope parts will be assembled during the summer of 1947.

Dr. Ira C. Bowen, present director of the Mount Wilson Observatory and a past member of the Physics Department of the California Institute of Technology,

has consented to serve as director of the combined observatories. Graduate training will be under the administration of California Institute of Technology and will have the cooperation of the Mount Wilson staff.

The Rockefeller Foundation in 1946 appropriated \$250,000, available during a three-year period, for completion of this telescope project.

#### MASSACHUSETTS INSTITUTE OF TECHNOLOGY ELECTRONIC COMPUTATION

Among the most striking scientific and technical advances during the war was that related to devices and techniques that can be used in the construction of mathematical computing devices of unprecedented power and flexibility. It is generally realized that the next five or ten years will bring mathematical computers so powerful and so rapid that they will make possible a theoretical approach to many problems which in the past have been too complex for analysis.

These new engines will be able to handle many more variables than such powerful computers as the differential analyzer, will be entirely unrestricted as to the type of mathematical operation they can perform, will be capable of indefinitely higher accuracy, and will operate at such speeds that studies can be made in minutes which previously would have required years, if, indeed, they could have been done at all.

The Rockefeller Foundation has made a two-year grant of \$100,000 to the Massachusetts Institute of Technology for research on electronic computation, which will include a systematic study of the various types of units which could be utilized in such a machine, for the purpose of arriving at a greatly improved understanding of what a modern mathematical computing

engine could and should be. The study involves work along seven main lines: mathematical research, electron tube design and engineering, computing components and circuits, number-storage units, input-function equipment, output (result-handling) equipment, and system control studies and corresponding circuit design.

This program is under the direction of the Center of Analysis, the group which has already developed, built and operated the differential analyzers toward which the Foundation has made appropriations; and which is also in charge of a considerable battery of all present types of computing equipment. Specialized problems relating to existing or new electronic tubes are handled by the Research Laboratory of Electronics under Professor J. A. Stratton. Professor Norbert Wiener and others in the Mathematics Department are collaborating on the difficult mathematical aspects of the program.

#### AMERICAN-SOVIET SCIENCE SOCIETY

The American-Soviet Science Society was established in 1943 as a liaison agency serving the interests of American scientists by helping to keep them informed of scientific developments in the Soviet Union, and aiding Soviet scientists in their correspondence with American scientists and through the interchange of scientific publications. The Society makes available to American abstracting journals and to American scientists the periodicals and books which it receives regularly from the Soviet Union. It edits and where necessary translates the manuscripts submitted by Russian scientists for publication in American scientific journals. The Society also publishes a bulletin which is distributed to all members and is sent without charge to scientific institutions and libraries. This bulletin con-

tains scientific news from the U. S. S. R., extensive bibliographies of Russian scientific journals, and other relevant and useful information.

The Society is an accepted agency through which Soviet and American scientists may correspond and exchange reprints, manuscripts and books. It regularly receives from the Soviet Union about 25 periodicals in various fields which, after abstracting, are deposited in suitable permanent libraries.

The Executive Committee of the Society, of which Professor L. C. Dunn of Columbia University was chairman when the grant was made, includes Doctors E. U. Condon, Th. Dobzhansky, M. Heidelberger, D. A. MacInnes, W. M. Stanley, S. A. Waksman and V. K. Zworykin.

The Rockefeller Foundation has made a one-year grant of \$25,000 to this organization so that the information and exchange services of the Society may be enlarged, and so that the bulletin, which is now published in mimeographed form, may be further developed. The new journal will carry abstracts of general importance and digests of special fields, and will list all Soviet scientific literature received.

BROWN UNIVERSITY  
APPLIED MATHEMATICS

Through grants for fellowships, The Rockefeller Foundation has over the past four years given support to Brown University for its work in applied mathematics. This program of study and research was inaugurated in 1941 to improve a sector of science in which America was lagging dangerously. War ensued shortly thereafter, and a large part of the Brown staff gave time to urgent problems proposed by the Army and

Navy. The school has had considerable influence on the development of applied mathematics in this country; several other institutions are now establishing new programs with similar objectives. In 1946, a Graduate Division of Applied Mathematics was set up by Brown University as a formal recognition of its place in the general university plan.

Since the program in applied mathematics was begun, more than 325 persons have been given training for a term or more. Over 150 of these subsequently engaged directly in war work through mathematical research, and most of the others taught Army and Navy students in the colleges. The fellows came from 34 states and seven foreign countries. Several books and 14 sets of mimeographed lectures have been issued, thus making recent research material available to a wide audience. A new journal, *Quarterly of Applied Mathematics*, is now entering on its fourth year, and has proved outstanding in its field.

Continuing its support to this training program, The Rockefeller Foundation in 1946 made a grant of \$50,000 to Brown University for scholarships, assistantships and fellowships in advanced applied mathematics, available over a five-year period.

NEW YORK UNIVERSITY  
APPLIED MATHEMATICS

Another institution which did outstanding work in applied mathematics during the war was New York University. The group in the Department of Mathematics, under the leadership of Professor Richard Courant, is now developing an institute for advanced training and research in applied mathematics. This plan involves further additions to the faculty, including guest profes-

sors, development of library resources, funds for scholarships, assistantships and fellowships, and provision for research publication. A Rockefeller Foundation grant of \$60,000 will be used over a five-year period for the training of advanced students in applied mathematics, and for equipment and literature.

When the war started the New York University group became the nucleus of an extensive research project under the auspices of the Office of Scientific Research and Development. Apart from a consulting service for divisions of the National Defense Research Committee, for industrial laboratories engaged in war work and for establishments of the Army and Navy, a wide program in basic research was pursued, comprising the fields of acoustics, wave propagation, fluid dynamics, explosion theory and jet propulsion.

The institute for advanced training and research in applied mathematics will perform the important task of raising standards of scientific training and securing a reservoir of scientific personnel. It will provide advanced courses and seminars in basic and applied mathematics, mathematical physics and mechanics, including dynamics of fluids and gases, in addition to becoming a regional center for the exchange of scientific information and advice.

### FELLOWSHIPS

A fellowship fund of \$95,000 was administered by the Division of the Natural Sciences of the Foundation during 1946; \$125,000 was appropriated for this work in 1947. During the year there were 44 fellows, whose main fields of study were as follows: genetics, soil physics, physics, plant physiology, mathematics, geology, botany, virus research, entomology, veterinary pharma-

cology, agricultural economics, irrigation methods, soil science, physiology, biochemistry, agronomy, physical chemistry, plant pathology, cytogenetics, soil conservation, rice breeding, cell chemistry, biology, biophysics and geophysics. Forty of the fellows studied in the United States, 2 in Sweden, 1 in Brazil and 1 in England.

There were 11 fellows from Mexico, 6 from Brazil, 5 from Colombia, 4 each from Denmark and the United States, 3 from Chile, 2 each from Argentina, China, France, Great Britain and Venezuela, and 1 from Peru. The new fellowships totaled 23, with 19 carried over from 1945 and 2 from 1944.

The National Research Council has for many years administered fellowships supported by The Rockefeller Foundation; in 1946 there were 22 regular fellowship awards in the natural sciences. In addition, a grant of \$250,000 was made to the National Research Council for continuation of the program of temporary, emergency predoctoral fellowships in the natural sciences which was begun with a Foundation grant in 1944. Eighty-seven fellowship awards were made in 1946 under this program, which aims to enable outstanding men whose training was interrupted by the war to go back to their universities and complete their training.

Under the grants to Brown University and New York University described above, 39 fellowship appointments were made in 1946 for training in applied mathematics.

#### GRANTS IN AID

The Natural Sciences Division of The Rockefeller Foundation in 1946 made 41 grants in aid totaling \$149,428.67 and ranging in amount from \$900 to \$7,500.

Twenty-five of the grants in 1946 were for research in the following fields: biochemistry, genetics, surface chemistry, geodesy, comparative physiology, muscle physiology, radioactivity, paleontology, plant genetics, immunochemistry, plant embryology, crystallography, molecular biology, organic chemistry and biometry. Other grants in aid were made to the National Institute of Sciences in India, Calcutta, for the support of scientific journals in India; the American Mathematical Society, toward expenses of the Policy Committee for Mathematics and the Office of Scientific Personnel, supported jointly by the American Institute of Physics, the Geological Society of America and the American Mathematical Society.

Six of the grants provided travel and maintenance expenses, making possible visits to the United States by representatives of the National College of Agriculture and the Secretariat of Agriculture, Mexico; the visit of a Danish specialist in insect physiology to the Harvard University School of Public Health; observational trips by two Greek engineers from the Athens National University of Engineering Science; visits of representatives of the Norwegian Royal Department of Church and Education, Oslo, and the Norges Tekniske Høiskole, Trondheim — members of a committee set up to study problems of technical education and the reorganization of Norwegian research centers, and the improvement of university-industry interrelations. Two special funds were allocated, one to cover the expenses of individuals invited to New York for purposes of consultation by the Director for the Natural Sciences, and the other to provide miscellaneous emergency funds for individual scholars, other than those from Latin American countries.

Six grants in aid from The Rockefeller Foundation in 1946 helped to defray administrative and travel expenses incurred for the following international meetings: preliminary reorganization meeting of the International Astronomical Union, in Copenhagen; a nuclear science symposium at Princeton University; the International Conference on Perspectives in Growth and Development at Rhode Island State College; the annual meeting of the Indian Science Congress Association, at Delhi; the Symposium on the Biology and Biochemistry of Nucleic Acid, Society for Experimental Biology, Cambridge, England; and the 1946 summer symposium of the Long Island Biological Association.

Grants in aid in 1946 were distributed among the following countries: United States, 20; England, 6; Mexico and Sweden, 3 each; 2 each to Denmark, Norway and Finland; 1 each to Switzerland, Greece and India.

## **THE SOCIAL SCIENCES**

## THE SOCIAL SCIENCES STAFF

During 1946

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JOSEPH H. WILLITS

*Assistant Director*

ROGER F. EVANS

*Acting Assistant Directors*

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# THE SOCIAL SCIENCES

<b>INTRODUCTORY STATEMENT</b>	<b>181</b>
<b>INTERNATIONAL STUDIES</b>	
The Brookings Institution	182
Canadian Institute of International Affairs	183
Centre d'Études de Politique Étrangère	184
Christian Michelsen Institute, Norway	185
Council on Foreign Relations	186
Council on Foreign Relations: World War II History	188
Geneva Graduate Institute of International Studies	189
Institute of International Affairs, Sweden	189
Institute of Pacific Relations	190
Royal Institute for International Affairs: League of Nations History	192
United Nations Information Office, New York	192
<b>SOCIAL IMPLICATIONS OF ATOMIC ENERGY</b>	
Cornell University: Study of American Public Opinion	193
University of Chicago: Commercial Atomic Power	194
<b>ECONOMIC RESEARCH</b>	
Dutch Economic Institute	195
Institute of Economics and History, Copenhagen	196
Institute of Economic and Social Research, Paris	199
Nankai University, Institute of Economics	200
Stanford University: History of Food and Agriculture	201
University of California, Bureau of Business and Economic Research	202
University of Cambridge, Department of Applied Economics	203
University of Chicago: History of Sears, Roebuck and Company	204
University of Manchester, Economics Research Section	205
University of Oslo, Institute of Economics	206
University of Oxford, Nuffield College	207
University of Pennsylvania, Industrial Research Department	208
Yale University, Labor and Management Center	209

<b>THE FUNCTIONING OF AMERICAN POLITICAL DEMOCRACY</b>	
University of Alabama: Electoral Process in the South	210
University of Minnesota: Research in Intergovernmental Relations	211
University of Virginia, Bureau of Public Administration	211
<b>MORAL AND POLITICAL PHILOSOPHY</b>	
Institute for Advanced Study	212
<b>RESEARCH AND TRAINING AGENCIES AND ACTIVITIES</b>	
Canadian Social Science Research Council	213
Johns Hopkins University: Research Training	214
Miami University, Scripps Foundation for Research in Population Problems	215
Social Science Research Council: Books for Europe	215
Social Science Research Council: Fellowships	216
Social Science Research Council: Grants in Aid	217
University of Wisconsin: Housing	218
<b>FELLOWSHIPS AND GRANTS IN AID</b>	219

## THE SOCIAL SCIENCES

**G**RANTS in the social sciences are usually made for any of the following purposes:

- To improve the methodology of the social sciences as instruments of social issues.
- To extend knowledge through fundamental research.
- To increase the supply of qualified personnel through advanced training, research or experience.
- To aid in applications of knowledge either through education or in concrete practical situations.

Pursuant to these ends, grants totaling \$2,633,677 were made in 1946. Grants fell under six main fields, as follows:

- International Studies
- Social Implications of Atomic Energy
- Economic Research
- The Functioning of American Political Democracy
- Moral and Political Philosophy
- Research and Training Agencies and Activities

In international relations, support went to agencies which conduct research and engage in educational activities and which, thereby, help to strengthen foundations for a more enlightened public opinion and more consistent public policies. These agencies were informed that general support was voted to help them continue their work in full vigor in the first critical years after the end of hostilities; but that general support was not contemplated beyond a period agreed on in each case. Such action was designed to put each agency under the necessity of extending its own support at a time when the interest in the problems of their concern is so wide-

spread. This leaves The Rockefeller Foundation free to focus its support upon new problems of strategic importance in international relations.

Closely related to these grants in international relations is the financing of trips by scholars between Europe and the United States. These scholarly errands are a quiet and constructive force that knits together the cultures of the world in understanding and sympathy.

The grants for studies in the social utilization of atomic energy were first steps in the long task of finding out what the social effects of atomic energy are likely to be. The grants for the support of economic research recognized the basic importance of wisdom in managing the world's economics, that such wisdom cannot come by rhetoric or force and that the slow processes of reason, of deepening understanding and of training competent experts must go forward at many centers in many lands.

The grants for studies in the functioning of American political democracy were a recognition of the importance of understanding the internal problems of our own political life. The studies supported in moral and political philosophy were an attempt to clarify some of the central issues in morals and politics.

### INTERNATIONAL STUDIES

#### THE BROOKINGS INSTITUTION

The developing foreign policies of the United States as one of the major powers sharing world leadership are to be appraised under the new international relations program of The Brookings Institution. Each of the studies is an integral part of a research plan geared to those international relations problems with which the

United States either is, or will be, concerned. This problem approach is intended to aid in formulating enlightened public opinion, in training specialists in international affairs, and in aiding governmental agencies dealing with foreign relations. An annual seminar will endeavor to train specialists and aid teachers of international relations. A one-year grant of \$75,000 was made by the Foundation in support of this program.

Two annual surveys will be published. One of these will examine American foreign policies, but with particular attention to the problems directly ahead and to the factors likely to determine their solution. The second survey will consider the foreign policies of other nations, especially the major powers, and how these are being harmonized through the United Nations and its related agencies.

Five major studies are in progress: the United Nations Charter and its effect on the powers, duties and functions of the U.N.; the foreign policy objectives of the five major powers; the general effectiveness of international organizations and conferences as methods of diplomacy; present-day factors making for economic war or for economic peace in international relations; and changes in international security concepts resulting from technological and strategic developments.

Dr. Leo Pasvolsky, who has been in government service since 1934, has now returned to The Brookings Institution as director of these studies.

#### CANADIAN INSTITUTE OF INTERNATIONAL AFFAIRS

The Institute has continued to encourage research in Canada in international affairs and to promote through study, publications, discussion, lectures, broadcasts, public addresses, libraries, public information services

and other means an understanding by its members, and by the Canadian public, of international questions and problems. The Institute serves as the Canadian Council of the Institute of Pacific Relations and is also a member of the International Studies Conference, exchanging materials between the Canadian Institute and the other institutes of international affairs, in England, North and South Africa, India, Australia, New Zealand, Sweden and the United States.

The program of the Canadian Institute has expanded so that it now has 23 branches from Halifax to Victoria, including a French-speaking branch at Quebec City, two bilingual branches and four women's branches. The recent increase in membership, in volume of inquiries to the Information Department and Library, and in the total sales of publications is indicative of the growing demand for dependable information on world affairs. A quarterly, *International Journal*, first appeared in December 1945. Studies recently published or nearing publication include: *Bretton Woods; Immigration Policies — Canadian and American; Canada and the Pacific; Canada and Air Transport in the Pacific after the War; National Interests in the British Commonwealth; India Today; Canada in the Old League and the New; Canadian Minerals and World Politics; The Newfoundland Survey*.

In the future, greater attention will be devoted to correlating the research with the conferences, study groups and library work. The Foundation in 1946 made a five-year grant of \$42,500 in support of its work.

#### CENTRE D'ÉTUDES DE POLITIQUE ÉTRANGÈRE

In the face of great difficulties, the Centre d'Études de Politique Étrangère, organized in 1935 to provide a

center in France for research on international problems, has reestablished a program by which it hopes to make its contribution to the knowledge of international affairs.

The Centre resumed its activities late in 1944, after an interval of almost five years, when its officers and staff were dispersed and its building occupied. During the remainder of 1944 and in 1945 more than 40 lectures were given by distinguished scholars and government officials. Study groups were organized for discussion and research on German problems, international organization, foreign relations of France outside Europe, foreign relations in the Pacific and the constitution of the French Union. Publication of the review, *Politique Étrangère*, and of a chronology of international relations has been resumed. Experimentation with the radio and cinema to disseminate research results is also under way. The Centre hopes to broaden its scope and increase participation by teachers, trade union leaders and leaders of French youth.

The role of France among the nations is unique and so important that the development of the Centre as a vigorous and objective institution for study and discussion of international affairs should have significance beyond the boundaries of France. Support provided by the Foundation in 1946 amounted to \$53,100 and is for use over a period of three years.

#### CHRISTIAN MICHELSEN INSTITUTE, NORWAY

A three-year appropriation of \$16,500 was made in 1946 to the Christian Michelsen Institute for the development of a program of research and popular education in international relations in Norway, which the war interrupted just as the plans were taking shape.

The results of its limited studies in national problems

were given a very restricted circulation during the war, but every effort was made to secure immediate publication after the liberation. Articles on broad economic and social problems have either been printed or are ready for the press.

Since 1943 the Institute groups have taken over planning in the economic field for Norway as their chief subject of study. An official central coordinating committee is responsible for the preparation of plans for the postwar needs of Norway and the reabsorption in civil employment of the dislocated labor supply. After the liberation the scientific study by this group was the foundation for the official policy in these spheres, although it was financially independent of the Government.

A new daily nonpartisan paper endeavors to interpret the implications of studies in the social and other sciences for the average citizen.

After the occupation the Institute reestablished conferences with the Swedish, Danish and Finnish groups studying international relations, and held a meeting in Oslo in December 1945. Study subjects were reviewed and arrangements proposed for circulation of the publications of each group in all the Scandinavian countries.

At the request of the Norwegian Committee on International Studies, the Institute has assumed responsibility for the publication of *Internasjonal Politikk*.

#### COUNCIL ON FOREIGN RELATIONS

The Council on Foreign Relations, through its studies, its publication *Foreign Affairs*, its meetings and membership, and through its close liaison with many government departments, has worked steadily toward a

maturing of the foreign policy of this country. The Rockefeller Foundation aid in support of its general research program continued in 1946 with an appropriation of \$60,000.

From 1939 to 1945 the Council undertook, with the approval and participation of the State, War and Navy Departments, a confidential program of "War and Peace Studies." These studies formed one of the largest wartime research and analysis undertakings of the kind. Nevertheless, the work was done without formal assignment of responsibility and without restriction of independent action.

The year 1946 was a period of reconversion to peacetime studies for the Council. However, members of the State, War and Navy Departments as well as other government agencies have now been included in the newly formed groups. Results of the studies, as well as discussion digests, will continue to be available to government departments.

The Council is continuing the study-group method of research. During 1946 the subjects under discussion were:

The Organization of Peace

United States Foreign Policy, Its Formulation and Implementation

National Power and Foreign Policy

Economic Aspects of Foreign Policy

United States Relations with Russia

In addition, four regional groups will follow developments in the British Empire, Western Europe, the Far East and Latin America.

The Council resumed publication of its annual survey entitled *The United States in World Affairs*, which was suspended during the war. Other activities include

periodic conferences on the training of foreign service officers and on the teaching of international relations.

#### COUNCIL ON FOREIGN RELATIONS

##### HISTORY OF WORLD WAR II

The Committee on Studies of the Council on Foreign Relations is concerned that the debunking journalistic campaign following World War I should not be repeated and believes that the American public deserves a clear and competent statement of our basic aims and activities during the second World War. What is contemplated is not nationalistic treatment, but rather a history, with the issues and problems presented by an American historian for an American public.

The history, essentially a study of our relations with other nations and with world problems altered or developed by the war, will subordinate actual operations and military aspects.

The three volumes planned will cover roughly the following periods:

- I. From the outbreak of the war in Europe in 1939 to the entry of the United States in December 1941
- II. From December 1941 to the invasion of Normandy in June 1944
- III. The concluding year of the war, followed by the peace settlements

The author, Professor William Langer of Harvard University, during the war was Director of the Research and Analysis Section of the Office of Strategic Services, where he had exceptional access to materials bearing on foreign relations. On a leave of absence, Professor Langer will establish headquarters at Cambridge, Massachusetts. He will go to England to consult with Professor Arnold Toynbee, who is presently writing a his-

tory of the war and peace settlements based primarily on records available in Britain.

The Rockefeller Foundation provided \$139,000 for expenses over a four-year period for the preparation of this history.

#### GENEVA GRADUATE INSTITUTE OF INTERNATIONAL STUDIES

The former Laura Spelman Rockefeller Memorial and The Rockefeller Foundation have aided the Geneva Graduate Institute of International Studies since its establishment early in 1927. In 1946 aid was continued with an appropriation of \$70,000 for a two-year period. The Institute is an autonomous graduate school of the University of Geneva, whose eminent faculty in history, government, economics and law is drawn from various countries of Europe and the United States. Research rather than teaching has been emphasized. The proximity of the League of Nations Library and other international centers in Geneva has provided excellent research facilities and has resulted in high research productivity.

Interest in the Geneva Institute is steadily growing, for, in spite of the fate of the League of Nations, the comparative isolation of Switzerland, the reduction of the Institute's teaching staff and Switzerland's high cost of living, students have come in ever-increasing numbers. Registration has grown from 118 in 1938-1939 to 200 in 1945-1946. Most of the students come from Central Europe, many from France, some from America.

#### INSTITUTE OF INTERNATIONAL AFFAIRS, SWEDEN

The Swedish Institute of International Affairs is the recognized center in Sweden for information regarding

foreign policy and for research in the field of international relations.

A four-volume history of the war from 1939-1945 is being published, and the results of its studies on postwar organization for peace and security have appeared in Swedish and English. Other studies on the economic and foreign policy of the Soviet Union, the German political and economic situation, current Chinese political problems, France after the liberation and the Near East are under way.

In the series *International Topics* appeared such subjects as Finland's economy, the European population question, Europe's food situation, the United Nations Charter, and the trial of Quisling. The Calendar of Events and the Press Service, under which nearly a hundred articles were distributed to approximately 100 provincial newspapers and trade union periodicals, have continued to perform an essential dissemination function. The Institute's program presently reaches members of the Riksdag and government employees, teachers, students, urban workers, farmers and other groups throughout Sweden. The Foundation's 1946 grant of \$33,750 is for general support for approximately three and one-half years.

#### INSTITUTE OF PACIFIC RELATIONS

The Institute of Pacific Relations, an unofficial international organization with a number of constituent national bodies or councils, aims to increase knowledge of economic, social, cultural and political problems of the Pacific area. Training personnel, stimulating language teaching as well as curriculum attention to the Far East in general, and publishing research studies are the Institute's chief means of spreading knowledge. The

distribution of educational materials to secondary schools and to the armed forces increased significantly during the past several years.

*The Pacific Council.* — This international governing body as well as over-all research body of the Institute has planned the following projects for the next few years: Collective Security in the Pacific; Progress Towards Self-Government in Dependent Areas; Reconstruction Policies and Programs in Pacific Countries; Public Administration and Recruitment and Training of Administrative and Technical Personnel; Japan; Effects of Military Government on Economic and Political Conditions in Occupied Countries. The Foundation appropriated, in 1946, \$173,000 over a five-year period toward the work of this Council.

*The American Council.* — As a national member council, it uses *The Far Eastern Survey* as the chief channel for presenting the results of its research. The American Council also makes available to the public, including teachers, writers and adult education groups, printed materials embodying the results of studies.

Recent publications of the American Council: *The Future of Japan*; *Governing of Men* (a sociological research study of the Japanese War Relocation Center at Poston, Arizona); *Peoples of Southeast Asia*; *Labor in the Philippine Economy*. Recent monographs deal with China as a postwar market, Pacific Northwest trade with Far East Pacific nations, aviation in the postwar Pacific, collective security in the Pacific, international monetary stabilization and China's relief needs. For its program in 1946, the Foundation granted \$60,000 over a five-year period.

(NOTE: The name of the American Council was officially changed to American Institute of

Pacific Relations at the November 1946 meeting of its Board of Trustees.)

ROYAL INSTITUTE OF INTERNATIONAL AFFAIRS  
LEAGUE OF NATIONS HISTORY

A critical, scholarly, readable history of the pioneering efforts of the League of Nations over the period from 1919 to 1939 has not been available despite the importance and value of such a document for the successor United Nations organization.

A history of the League is now being prepared by Mr. Frank Walters, who was Arthur J. Balfour's secretary during the negotiations preceding the Treaty of Versailles, subsequently a member of the League staff and finally its Deputy Secretary General. He thus has intimate knowledge and familiarity with the basic documents in Geneva, where he will be working.

The author plans to include treatment of such topics as background and objectives; chronological development from 1919-1939; the history of League relations with leading world powers; principal problems and political disputes; the international service center; the League's own organization, methods, etc. A two-year grant of \$17,500 was made in support of the League of Nations history. This grant will be administered by the Royal Institute of International Affairs.

UNITED NATIONS INFORMATION OFFICE, NEW YORK

The importance of preventing possible serious misinterpretations of actions of international bodies due to unavailability of actual documents on transactions was recognized when the Foundation early in 1946 appropriated \$16,177 to the United Nations Information Office, New York, toward the cost of reproducing the

documentation of the Preparatory Commission in London and of the sessions of the First General Assembly of the United Nations organization. Preparatory Commission documents were microfilmed in London and the film flown daily from the Interim Organization to the United Nations Office in New York and reproduced here by photo-offset within 24 hours of their arrival. Fifty or sixty copies were sent to the Department of State and to key libraries throughout the country. One thousand other copies were distributed to interested libraries, institutions and societies, and an additional number provided for editorial writers, news commentators and others. This appropriation was an emergency measure to permit the reproduction of these documents and their distribution as promptly as possible.

### SOCIAL IMPLICATIONS OF ATOMIC ENERGY

CORNELL UNIVERSITY

STUDY OF AMERICAN PUBLIC OPINION

The influence of the development of the atomic bomb and atomic energy on the thought and sentiment of the American people may be crucial in the development of international affairs. The Navy's plans for experiment on the destructiveness of the atomic bomb in a brief period beginning May 12, 1946, offered a unique opportunity to study with available socio-psychological tools the impact on mass opinion and attitudes of a predictable event in the military application of atomic energy. The Foundation therefore appropriated \$23,875 to Cornell University to study attitudes and opinions in the United States and abroad immediately preceding and again shortly after the Navy experiment. Comparison of the impact of this dramatic event with that of

educational efforts to provide information and develop attitudes favorable to world amity will be attempted. In addition, new procedural techniques for the study of change in social views may be advanced.

Among the topics being analyzed are the following: the attitudes of the public on American relations with Russia, Great Britain and the United Nations organization, the over-all role of the United States in the world community of nations, public reactions to the atomic bomb and to policies of its control. Anticipations and fears regarding the likelihood of another major war and its potential destructiveness, and factors influencing attitudes are under examination.

In conducting the study, Cornell University has the advice and cooperation of social scientists from Yale, Princeton and Michigan, operating as a subcommittee of the Committee on Social Aspects of Atomic Energy of the Social Science Research Council.

#### UNIVERSITY OF CHICAGO COMMERCIAL ATOMIC POWER

The discovery of atomic energy offers an opportunity to anticipate the problems of social adjustment likely to arise. Most studies of technological change by social scientists have been undertaken after the event. Improved research techniques now permit studies directed to the amount of potential change rather than its mere historical recording.

The University of Chicago is taking a leading role in such investigations. The University has already held conferences on the implications of the release of atomic energy and set up an Office for Inquiry into Atomic Energy. This Office, with the advisory participation of the Cowles Commission for Research in Economics and

the Institute of Nuclear Physics, all of the University of Chicago, is undertaking two studies dealing with the economics of atomic energy.

The first study is concerned with the cost of heat and electricity produced by fission. A world map of costs of energy from non-atomic sources will be prepared, followed by a general review — within the limits imposed by security regulations — of the factors affecting the cost of nuclear energy and possible adaptation of power-generating technology to nuclear energy.

The second project will explore the possible cost reductions for certain products resulting from a new fuel with negligible transportation cost. For certain specific industries this second study will examine the effects of a given energy-cost saving on the price of the finished product, and the effect of the lowered price on the quantity sold.

A summary of the two studies will discuss methods for estimating the net effect of the energy source on national income and also on national wealth from the point of view of preservation of mineral resources.

The sum of \$30,000 provided by the Foundation is for one year, for the completion of exploratory studies and the beginning of a more detailed research program.

### ECONOMIC RESEARCH

#### DUTCH ECONOMIC INSTITUTE

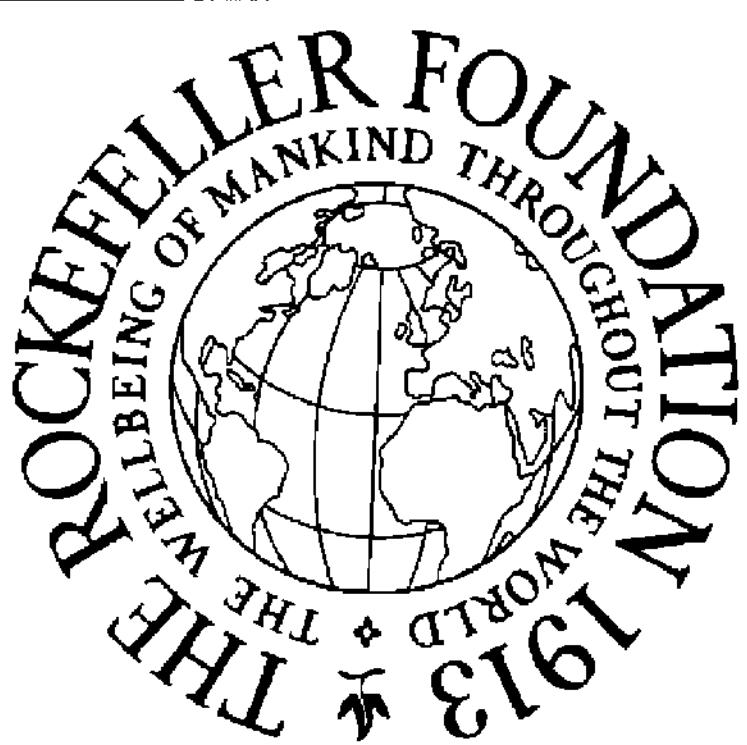
During the war, the Dutch Economic Institute, an important European center for research in the social sciences, managed to continue its activities, although for a time work was officially suspended. Its weekly periodical, *Economisch-Statistische Berichten*, however, was issued monthly. Some research under way in 1940 has been completed, and a new series of studies of Dutch

economic life before the war is ready for publication. One study has already been published.

Soon after the Netherlands' liberation in May 1945, the Institute's reassembled staff began work on its current program, which the Foundation is supporting with a grant of \$12,000 for the period 1946-1948. The major undertaking is an intensive study of the economic problems related to the reconstruction of Rotterdam, with emphasis on the problems of international trade. A study of transportation systems in the Netherlands, France, Belgium, Denmark and Norway has been completed for the Ministry of Transportation. Professor J. Tinbergen, Managing Director of the Institute, is in charge of studies for the economic reconstruction of the Netherlands.

#### INSTITUTE OF ECONOMICS AND HISTORY, COPENHAGEN

The Institute of Economics and History in Copenhagen, an independent institute with an excellent record of achievement in social research both before and during the German occupation, received from the Foundation in 1946 an appropriation of \$35,400 toward general expenses. The Institute's research facilities, which are housed in a building adjoining the University of Copenhagen, are available to faculty and students of the University as well as to the City of Copenhagen. During the war, it continued its studies and the publication of its review, *Economics and Politics*, without serious interference. This publication, together with books and monographs, served to bring results of the Institute's research to a large audience in Denmark and in the future will also reach Norway and Sweden under an agreement with corresponding institutes in these countries.



Photograph Excised Here

Library, Institute of Economics and History, Copenhagen.

In 1945 the Institute published a study of the French Third Republic from 1870 to 1940. Several studies are now ready for printing, including studies of the foreign policy of the Soviet Union since 1917 and of the political and social development of Latin America. Studies are under way on the Balkans, Turkey and the Near East, and the United Nations. Two new studies have been planned in conference with the other Scandinavian institutes on problems of international trade policy and international agricultural problems. In addition to these international studies the Institute has a number of projects in history and economics, some of which are relevant to the field of international relations.

#### INSTITUTE OF ECONOMIC AND SOCIAL RESEARCH, PARIS

In 1931 the Trustees of The Rockefeller Foundation appropriated \$350,000 for the establishment and support of the Institute of Economic and Social Research which was organized in Paris in 1933 with a membership of some of the highest ranking scholars in France. Before the war, under the directorship of Professor Charles Rist, it carried on a research program largely in economics and closely related fields, and became an important training center for teachers and research workers.

During the war the Institute maintained a skeleton staff and continued some of its research. In 1946 the Foundation provided the Institute with \$12,750 for payment of debts already incurred and for general expenses during the calendar year.

The Institute is now engaged in studies of business cycles and of international exchange and French foreign trade. These studies will examine the variations of world trade and its evolution in major countries during the

past 50 years. They will also examine in detail the mechanism by which this trade has been balanced and adjusted between countries. A unique method has been devised for presenting the results of this research study to a wide reading public.

NANKAI UNIVERSITY  
INSTITUTE OF ECONOMICS

The Institute of Economics in Nankai University, China, founded in 1927, has played an important role in the advancement of economic science in China. It has carried on fundamental research resulting in publications on current economic problems, and has developed high-quality personnel for both academic and public leadership. Driven inland to Kunming during the war, the Institute staff assisted the Government with wartime problems and with the formulation of postwar economic plans and programs.

Nankai University reopened at Tientsin in September 1946. The new program of the Institute of Economics is addressed to two of China's major problems — industrialization and democratic government. The first problem will be approached through monographic studies on various aspects of industrialization, studies in economic history, and serial reports on current social, political and economic conditions. The Institute's statistical index services will also be continued and expanded. To promote studies of democratic government, the Institute proposes a series of studies on such subjects as the development of an effective representative government, the reconciliation of traditional institutions with new democratic ideals, and the creation of an adequate civil service system to serve the rapidly expanding and increasingly technical needs of the Government. Training at the postgraduate level will be continued.

To help the Nankai Institute of Economics consolidate its position and initiate its new research program, the Foundation in 1946 provided \$25,000 for its use over a two-year period.

STANFORD UNIVERSITY  
HISTORY OF FOOD AND AGRICULTURE

The effects of World War II on food and agriculture affected the comfort, health and very existence of hundreds of millions. A close historical scrutiny of the wartime food situation would both clarify the record and provide the nations with guiding principles for improved conduct of human affairs whether in war or in peace.

The Rockefeller Foundation has appropriated \$300,000 to Stanford University toward an international history of food and agriculture during World War II to be undertaken by the Food Research Institute during a five-year period. The Institute has a world-wide reputation for its thorough, impartial, accurate and scholarly studies.

Topics are divided into three principal groups. Group A consists of international commodity studies. These will be economic analyses of production, acreage, yield per acre, stocks, total supplies, trade, utilization and consumption, and prices of each commodity or group of commodities, with due reference to the effects of governmental and intergovernmental policies. Each study will analyze prewar situations, international wartime developments, the transition period, and conclude with suggested necessary or desirable adaptations to evolving postwar circumstances.

Group B consists of studies in international organization and control. These will deal with the histories of such organizations as the Combined Food Board, the

United Nations Relief and Rehabilitation Administration, the Combined Civil Affairs Committee, the British-American Blockade and the Middle East Supply Center.

Group C embraces studies in national and regional management of food and agriculture. These will deal, region by region, with government intervention in production, transportation, distribution, exportation, rationing, price control and set-asides of food commodities.

The type of research here contemplated is probably not a feasible undertaking for any government agency at present.

UNIVERSITY OF CALIFORNIA  
BUREAU OF BUSINESS AND ECONOMIC RESEARCH

The Bureau of Business and Economic Research of the University of California encourages and facilitates research by faculty members in the Departments of Economics and Business Administration. While problems of importance to California and the Pacific Coast are of especial interest, problems of wider import are also considered.

Generally speaking, the aid given to the faculty in carrying on studies supported by the Bureau has been in the form of providing research assistants and general administrative aid. The Bureau wishes, however, to supplement this service by appointing full-time research associates and research assistants, providing relief for faculty members from teaching duties for limited periods, providing travel expenses for field investigations and publishing a series of occasional papers.

During the past few years the Bureau's activities included a study of the Pacific Coast petroleum industry, both because of its importance to the West and because

of analytical techniques which could be developed and which are of central interest to economic analysis and policy. Several books have already been published on inflation, monetary policy and employment, national power and foreign trade, and California business cycles, and others are in process. In addition the Bureau has undertaken studies on the financing of small business enterprises and the steel-using industries of California.

To assist the University of California to continue this program over a five-year period, the Foundation provided the sum of \$50,000.

UNIVERSITY OF CAMBRIDGE  
DEPARTMENT OF APPLIED ECONOMICS

Largely as a result of wartime policy and experience, the study of applied economics, as contrasted with economic theory, has been gaining ground in England. This field is developing rapidly, and its value in government circles and in industry is becoming increasingly recognized.

Cambridge University had created a Department of Applied Economics in 1939, but postponed its development until the end of the war. The Department has now resumed activities under the directorship of Richard N. Stone. In its investigation and analysis of economic problems, the Department will attempt a synthesis of three types of study: observation, or the discovery and preparation of data; the theoretical appraisal of problems; and the development of statistical methods appropriate to the special problems of economic information. The initial research program will include a study of the expenditure, output and income of the United Kingdom before 1920; a study of the output of different branches of activity in the United

Kingdom, 1920-1938; the quantitative testing of theories of output as a whole; the development of certain preliminary work on money-flow systems; a study of statistical supply-and-demand functions.

Working relations with similar centers are planned, including visiting members from other institutions. A further feature will be the provision of technical and other services for members of the faculty.

The Foundation has provided the sum of \$95,175 to be used toward the general budget of the Department for five and one-half years.

#### UNIVERSITY OF CHICAGO

#### HISTORY OF SEARS, ROEBUCK AND COMPANY

In 1946, The Rockefeller Foundation gave the University of Chicago the sum of \$36,000 for use over a three-year period for a history of Sears, Roebuck and Company with emphasis on its implications to American society and economy. This is being made under the direction of Dr. Boris Emmet, who from 1937 to 1946 was retail merchandising manager for the Company's 600 retail stores. Previously he was a member of the faculty of Stanford University and Chief Statistician of the Bureau of Labor Statistics.

Sears, Roebuck and Company today represents centralized ownership, centralized policy-making, but independent operation in 900 different towns and cities. Although the Company does less than 2 per cent of the total national retail business (exclusive of food and perishables), its history is significant not only from the point of view of policies pursued and organization developed within the Company, but also in influence on costs to consumers, and profit and stability to suppliers.

Dr. Emmet plans to trace the origin and development

of the business, the organization both in the field and in the home office, and to describe the merchandise structure, buying organization, buying methods, selling methods and personnel policies. A faculty committee appointed by the University of Chicago is advising and criticizing the plan and progress of the study. Representing, as this project does, a small cross section of the economic history of distribution, the results may furnish valuable material for teaching distribution and its history.

UNIVERSITY OF MANCHESTER  
ECONOMICS RESEARCH SECTION

The Economics Research Section of the University of Manchester, England, will be located within a large urban population and a group of varied industries of Lancashire, for carrying out first-hand study of social and industrial problems. Even in the examination of broad economic questions this social and industrial environment constitutes a convenient laboratory for field work designed to throw light upon national and international questions.

The Section, with the confidence and collaboration of employers, trade unionists, local administrators and social workers, was beginning to get results when it was compelled to close down soon after the outbreak of the war. It has now resumed its activities. Greater attention will be given to research in the field of administration in its relation to economic and social problems.

The three main fields of interest in the program now under way are:

- (1) *Studies of Problems of a Full Employment Policy*, which will involve a statistical analysis of the foreign trade of the United Kingdom and other parts of the world, and an attempt to

state the problems involved in the avoidance of depressions in the light of the current full employment theory.

- (2) *Studies in Economics and Administration Based on Lancashire Conditions*, which will include a study of the administrative techniques employed in business, a statistical analysis of the changes in Lancashire's industrial structure, a study of family budgets and a study of local government finance.
- (3) *A Bibliography of British Statistics*, which will provide a guide to British official and unofficial statistics. This may be followed by a set of statistical series on all important aspects of the British economy.

The Foundation has provided \$68,850 over a five-year period toward the expenses of this program.

UNIVERSITY OF OSLO  
INSTITUTE OF ECONOMICS

Since the liberation, the Institute of Economics in the University of Oslo has aided the Norwegian Government in shaping its economic plans and policies. The demand for more economists with research training such as the Institute provides is great, and at present a group of excellent young economists and statisticians is again gathered at the University of Oslo. A considerable number are working at the Institute on an analysis of family budgets collected by the trade unions.

Professor Ragnar Frisch, the Director of the Institute, is resuming his program of research and research training in terms related to current problems. Toward support of his work the Foundation granted \$30,000. Definite answers to many practical economic questions depend on measuring separately the principal tendencies at work simultaneously in the economic system. By its tradition the Oslo Institute furnishes an appropriate

setting for the theoretical part of the program, and through their work in business or in Government the members of the group have contact with many phases of the economic life in Norway.

#### UNIVERSITY OF OXFORD

#### NUFFIELD COLLEGE

Nuffield College was founded by a gift of Lord Nuffield to the University of Oxford in 1937 for post-graduate studies, especially in the social sciences, and to provide a research center stressing cooperation between academic and nonacademic persons. The constitution provides for a society of Fellows of three classes: Official Fellows, or research faculty; Faculty Fellows, or teaching faculty; and Visiting Fellows associated with the College for short periods in order to afford research workers the benefit of their experience.

A most important service that Nuffield College can render to the social sciences is the provision of opportunity for scholars of high standing to carry out their own research and writing without a heavy burden of teaching and administration. The ultimate problems which challenge our times are philosophical, to be resolved by deep analytical thinking. This is a difficult task where, as at present, administrative and teaching duties reflect the severe pressure on universities and government departments.

Nuffield needs ten or twelve Official Fellows, drawn from the more important social and political sciences. With the election of a seventh Official Fellow, the entire resources of the College for this purpose will be absorbed. The Foundation has therefore appropriated the sum of \$162,000 to cover expenses of additional research

faculty during a period of ten years beginning January 1, 1947.

UNIVERSITY OF PENNSYLVANIA  
INDUSTRIAL RESEARCH DEPARTMENT

The full consequences of the absence of generally accepted concepts important to wage determination and wage-scale administration, resulting in widespread use of economic and political pressures as the major determinants, will become evident only over the years ahead. During the war years, inherent strengths and weaknesses of collective bargaining and shortcomings of the national labor policy became evident. A wage stabilization policy, enunciated for the first time, was partially applied on a national basis. New ideas were tried out in the conduct of conciliation, mediation, impartial umpireship and arbitration. To evaluate these factors the Industrial Research Department of the University of Pennsylvania is sponsoring a study of war experience in labor relations by Dr. George W. Taylor.

During this critical period Dr. Taylor served first as impartial umpire under the labor agreement between General Motors and the United Automobile Workers of America and later as a member, vice-chairman and, finally, chairman of the National War Labor Board. The study hopes to provide aid and guidance in the formulation of future policies by government officials, labor unions and management. Emphasis will be on the nature of the wage stabilization program and its effect upon production and price factors; the function of the impartial umpire or chairman in the application and administration of labor agreements; the increasing use of mediation as distinct from conciliation; the growth of industry-wide collective bargaining and the consequences of the union policy of making uniform issues for

an entire industry; changes in the scope of collective bargaining; the place of federal government in the industrial relations field. Dr. Taylor plans also to develop a program for long-term research in industrial relations, emphasizing wage determination.

A one-year grant of \$10,000 was provided in 1946 by The Rockefeller Foundation toward this study.

YALE UNIVERSITY  
LABOR AND MANAGEMENT CENTER

The Labor and Management Center was established in 1944 in affiliation with the Department of Economics and the Institute of Human Relations. Its activities include teaching, research and community service. In its study of basic principles of human relations, particularly industrial relations, and of the structure and forces operating in the labor market, it endeavors to check already formulated hypotheses.

The Foundation has provided \$43,800 for the study of labor market structure and wage determination over a three-year period. Through intensive field work in one city, an attempt will be made to develop hypotheses about the characteristics of labor demand, labor supply and their interaction in the labor market, and to provide a sound basis for reasoning about the effect of particular wage changes.

The main sources of data will be company personnel records; interviews with management officials; interviews with workers; employment service records; and interviews with employment service officials.

The techniques used are expected to be applicable to other cities in other parts of the country. The project is basic to a series of studies on the characteristics of labor supply, labor demand, employment and unemployment,

which are part of the long-range research program of the Center.

THE FUNCTIONING OF AMERICAN POLITICAL DEMOCRACY  
UNIVERSITY OF ALABAMA  
ELECTORAL PROCESS IN THE SOUTH

The events leading to the removal of the poll tax in Georgia in 1944 prompted the Director of the Bureau of Public Administration of the University of Alabama to travel through several Southern states to confer with civic leaders, publishers and educators concerning a proposal for an objective analysis of the poll tax issue. Not only was there enthusiasm for such a study, but many of those interviewed believed that it should be broadened to include the whole electoral process of the South.

This process in the South has many characteristics common to other regions, but it also has many unique features. The study will cover every important aspect of the process, including the one-party system, the system of nominations, the requirements for voting, including the poll tax, election machinery and the processes by which voters are registered, and the fact that in the South less than 20 per cent of the qualified voters go to the polls.

The study is under the direction of Professor V. O. Key. It will have the cooperation of a South-wide commission of from nine to fifteen leading citizens and a panel of consultants, experts in the field of political science and government.

With democracy now on the defensive following World War II, critical examination of its fundamental processes and methods is one way of preserving the vigor of the democratic process.

The Rockefeller Foundation is supporting this study with a two-year grant of \$40,000.

## UNIVERSITY OF MINNESOTA

## RESEARCH IN INTERGOVERNMENTAL RELATIONS

The expansion of governmental activity at all levels makes important the study of intergovernmental relationships and particularly research looking to the effective vertical coordination of major service aspects of government as they relate to the individual citizen. Professor William Anderson of the University of Minnesota is undertaking research which will focus on these aspects of modern government in a single state.

The project has five parts:

- (1) Minnesota and the Nation
- (2) Minnesota and Other States — to be studied in such terms as boundary relations, reciprocal and retaliatory legislation, trade barriers, rendition of criminals, constitutional integrity, etc.
- (3) Minnesota and Local Units of Government
- (4) Functional and Administrative Studies
- (5) Integrating Studies of Methods and Results. This will be undertaken after completion of the descriptive studies of the difficulties and developments, which are planned in order to learn more definitely where the matter of intergovernmental relations stands, and to establish more clearly the meaning and the nature of federalism in our own age.

Professor Anderson will be assisted by selected graduate students in political science and related fields, thus providing a training opportunity for young scholars in this important area. The Rockefeller Foundation has made a five-year appropriation of \$72,700 to the University of Minnesota for this project.

## UNIVERSITY OF VIRGINIA

## BUREAU OF PUBLIC ADMINISTRATION

The Bureau of Public Administration conducts basic research and provides consultative service on problems of municipal government in Virginia. Its activities also

include promotion of cooperation in this field by various universities in Virginia with the planning and advisory agencies of the Commonwealth. From 1943 through 1944 some of the work of the Bureau had to be virtually suspended because of wartime loss of staff and curtailment of transportation; but postwar plans for reorganization and expansion have now been made.

Three features characterize the new program of the Bureau. Traveling representatives, each responsible for one of four regions, will maintain systematic liaison with local, state and federal officials in Virginia; a central technical staff, large enough to permit effective specialization, will collaborate with local governments in the analysis of problems of government in Virginia; and organized short courses and clinics held throughout the State and at the University of Virginia will present and apply the work of the technical staff.

Active cooperation of federal, state, county and municipal officials and their organizations is assured. The basic research and instructional work of the Bureau will continue in cooperation with other state educational institutions. The Rockefeller Foundation has made \$53,600 available toward the general budget of the Bureau for two years.

### MORAL AND POLITICAL PHILOSOPHY

#### INSTITUTE FOR ADVANCED STUDY

Dr. John Lindberg is a Swedish economist with a deep interest in social, political and moral philosophy. He has been searching for the basic causes of social instability in Western society that transcend nations and time.

For five years Professor Lindberg has been preparing a book under the title *Testament to the West*. The Foundation's grant of \$14,000 will enable him to have two

free years to refine his ideas and rewrite the book for American publication.

Professor Lindberg holds that social values are subject to law and analysis, and constitute a legitimate field for scientific inquiry. In the past, scientific progress has been characterized by the extension of the concept of law, and the moral field represents the single remaining aspect of reality which modern man still believes is ruled by arbitrariness and whim. The study involves an analysis of society's structure, the motivations required to maintain social equilibrium and the interrelation between motivation and structure. It seeks to determine the basis of social equilibrium both in static terms and in terms of the dynamics of rapid change.

#### RESEARCH AND TRAINING AGENCIES AND ACTIVITIES CANADIAN SOCIAL SCIENCE RESEARCH COUNCIL

The need for both basic research and competently trained personnel in the social sciences was felt acutely during the war emergency and is even greater since the war. While industrial and government-fostered research have their place, there are projects of great significance, with national and social implications, which even the financially hard-pressed and overworked universities cannot support. It was to help meet this situation that the Canadian Social Science Research Council was founded in 1940 to promote and coordinate research in the social sciences in Canada. The Council has 16 membership bodies, and operates through major committees responsible for publication, grants in aid, library and research facilities and postgraduate training.

During the past six years the Council has assisted in the publication of six volumes and in the bibliographical work of the *Canadian Journal of Economics and Political Science*. Eleven books are in press or about to go to press.

Special Council undertakings include the supervision of two major projects, the Canadian Northland study and the Alberta Social Credit Experiment. A Canadian atlas is in preparation. The Council is endeavoring to build up areas of specialization in Canadian universities. The main future effort will center on the promotion of new projects. In 1946 the Council received an appropriation from the Foundation amounting to \$20,000 for expenses of its program during a two-year period.

JOHNS HOPKINS UNIVERSITY  
RESEARCH TRAINING

Recognizing the present great need of a more scientific development of training in the social sciences, Dr. Robert T. Crane, formerly of the political science faculty of the University of Michigan and until recently Director of the Social Science Research Council, has wished for some years to conduct an experiment in research training in this field. It is generally true, by and large, that social science students receive little intensive training in research methods. The Rockefeller Foundation has made \$21,000 available to Johns Hopkins University for a three-year experiment to be directed by Dr. Crane.

Research is to be made the primary task of graduate students who evidence desire and aptitude for a research career, with adequate, but secondary, attention to formal courses. The field chosen by Dr. Crane is political science, but the results of the experiment are intended to be applicable to any of the social sciences.

In the first year, six graduate students in political science will be given research assignments which will teach them to find and use materials, then other jobs which will take them into the field. In the second year they will be introduced to organized research, and finally

in the third year they will undertake projects entirely on their own.

MIAMI UNIVERSITY

SCRIPPS FOUNDATION FOR RESEARCH IN POPULATION PROBLEMS

The need for basic research on fundamental population problems here and abroad, and for training a new supply of skilled young persons in this underdeveloped field led the Foundation to aid the Scripps Foundation for Research in Population Problems, under the direction of Dr. Warren Thompson and Dr. P. K. Whelpton. A grant of \$82,500 to Miami University will help this Foundation to pursue studies of population redistribution during a five-year period.

Dr. Whelpton will study fertility in the United States and the future growth of population. At present he is concentrating primarily on a study of the social and psychological factors affecting fertility, the data for which have already been gathered.

Dr. Thompson will consider problems of the distribution of population in the United States. At present he is engaged in a study of the growth of metropolitan communities in the United States. This is the beginning of a series of studies of the relation of population density to population growth and the bearing of these on the welfare of the nation and the individual.

SOCIAL SCIENCE RESEARCH COUNCIL

BOOKS FOR EUROPE

Since the outbreak of World War II social scientists in Europe have been unable to maintain normal communication with their United States colleagues through ordinary channels. The cessation of civilian travel stopped

personal contacts and thus checked the growing interchange of ideas, knowledge and research methodologies. Within Europe, social scientists were shunted into war activities which precluded even that reasonable minimum of objective research and training necessary to restore the social sciences to vigor when hostilities ended.

European social scientists from many countries urged that one of the practicable first steps in helping European social scientists to overcome one aspect of their losses of the war years was to provide them promptly with the more recent publications of American social scientists. The Social Science Research Council accepted the responsibility for planning and administering an attempt at helping to fill this need. Shipments to some countries of the books selected were made promptly. In others, shipment must await more favorable internal conditions.

The sum of \$55,000 which the Foundation provided in 1946 made possible the purchase of some 40 sets of from 300 to 350 books each. A special committee of social scientists familiar with European conditions and headed by Dr. Thorsten Sellin of the University of Pennsylvania is conducting the project and has prepared a book list for each discipline which will be sent to recipient libraries. Books were chosen from outstanding works in social fields during the past eight years. The value of the collection sent to each library will exceed \$1,000. Each library will be given opportunity to select additional books to meet special institutional needs.

#### SOCIAL SCIENCE RESEARCH COUNCIL FELLOWSHIPS

The Foundation appropriated \$100,000 to the Social Science Research Council for fellowships and reconver-

sion awards in the social sciences during the year beginning July 1, 1946.

The basic fellowship program of the Council, which aims to improve the research skills of promising young social scientists and has been a major continuing interest of the Council, was superseded in 1944 by the program of demobilization awards to aid persons to resume scholarly work which had been dropped because of government or military service.

The Council has periodically examined its fellowship programs; the experience now gained from the demobilization awards makes feasible a comprehensive review at this time. There is a strong presumption in favor of greater flexibility to permit increased individualization of programs of study, range of stipends, periods of appointment and other considerations for the post-doctoral and predoctoral training fellowships.

The Council wishes to include under its new program a number of promising candidates who would have qualified for demobilization awards had they come earlier to the Council's attention. During the past two years the circumstances of individual demobilization have necessitated prompt investigation and speedy action upon applications. The Committee by meeting at more frequent intervals than previously can now handle the cases of individuals who merit special consideration.

#### SOCIAL SCIENCE RESEARCH COUNCIL GRANTS IN AID

The immediate purpose of the grant-in-aid program is to facilitate the completion of relatively small independent projects undertaken by mature scholars without adequate local support for their work. The primary emphasis is to encourage the diverse studies that stem

from individual interests and capacities. Secondary emphasis is upon efficient utilization of existing research personnel in accordance with the Council's long-continued program of personnel development and maintenance.

The sum of \$75,000 was provided in 1946 for the Council's use in the next three years. From 1937 to 1942 there was a remarkable consistency in the number of applications received, ranging from 104 to 119, with about two out of every five applicants receiving awards. The grants made ranged from less than \$100 to \$1,000. In the prewar years, 55 per cent of the persons receiving awards were less than 40 years of age, 35 per cent were in their forties. Support was thus given predominantly to the age groups where encouragement may have a long-term influence. The number of institutions represented by grantees has continued to increase and 114 widely dispersed institutions have been represented within the last decade.

#### UNIVERSITY OF WISCONSIN HOUSING

In an effort to bring into perspective the complex and urgent problems of housing and to illuminate points at which significant contributions might be made to their resolution, The Rockefeller Foundation in 1944 financed a survey and report on research needs and opportunities in that field. One of the main recommendations, endorsed by the Conference on Social and Economic Research in Housing held at Madison in December 1945, was that centers of fundamental research and training in housing be developed in one or two qualified universities.

The University of Wisconsin met many of the

essential specifications. It had a nucleus of staff with experience and interest in the field. It had a substantial faculty group in related social science fields actively interested in urban problems and particularly in housing, and its administration was prepared to expand and make permanent the University's activity in the field of housing and planning.

Toward a program of research in housing developed and to be directed by Professor Richard Ratcliff, The Rockefeller Foundation in 1946 accordingly made to the University of Wisconsin a grant of \$58,500 for a three-year period. From among the major problems outlined in the initial report, considerations of urgency and staff competence have led the Center to focus first on: Entrepreneurial Incentives in the Production of Rental Housing, a Comparative Analysis of Swedish and American Entrepreneurial Activities in Rental Housing, and the Economics of Slum Housing and "Filtering Down."

Research assistantships and related seminars simultaneously will provide training for prospective workers in the field.

#### FELLOWSHIPS AND GRANTS IN AID

For 1946 the Foundation appropriated \$125,000 for fellowships in the social sciences. The gradual resumption of fellowships for European students has proceeded as conditions abroad permit. Of the 18 fellowships awarded, 12 were active during 1946. By countries the distribution was: Australia, 1; Belgium, 5; the Netherlands, 1; Norway, 5; and Sweden, 1; by fields: economics, 10; sociology, 4; political science, social and economic geography and statistics, international trade, each 1.

The fellowship program of the Social Science Research Council for American students continued its demobilization awards along with the regular fellowships, 118 and 28 respectively being granted in 1946. The demobilization awards program was concluded in 1946 with a total of 164 persons having been appointed over the entire period. Of these, 52 were for postdoctoral and 112 for predoctoral research training. The fields of specialization included the following: anthropology, 19; economics, 51; geography, 4; history, 29; political science, 26; psychology, 10; and sociology, 25.

A fund of \$125,000 set aside in 1945 for allocation during 1946 for research aid grants was supplemented during the year by an additional \$50,000. A grant of \$175,000 was voted in 1946 for allocation in 1947.

During 1946, a total of \$174,881 was allocated for 63 awards. These ranged in amount from \$250 to \$7,500, and averaged approximately \$2,750.

The year 1946 was one of reestablishing and adjusting activity after the war, and a considerable number of important opportunities appeared for the kinds of assistance these grants offered. Many of the grants were made to permit the renewing of contacts by scholars across national boundaries. For example, exchange of scholars between other countries and this country was facilitated by trips to the United States of Professor John Jewkes of the University of Manchester; Professor J. R. Hicks of Nuffield College and Mrs. Hicks; Professor E. L. Woodward of Oxford University; Sir Hector Hetherington, University of Glasgow; Sir Harold Butler, former Warden of Nuffield College; Sir Henry Clay, present Warden of Nuffield College; Dr. Alexander Loveday, formerly of the League of Nations staff; Professors François Perroux and Pierre

Pujade of the French Institute of Applied Economic Science; Professor Heikke Waris of the University of Helsinki. From the United States, Dr. Percy Bidwell, Director of Studies of the Council on Foreign Relations, made a trip to England. A grant to the University of Louvain was given to enable it to invite foreign professors for lectures and discussions. A grant to the Australian-New Zealand Committee on Social Science Fellowships was made to aid in establishing scholarly contacts with another part of the world.

The University of Chicago received a grant for expenses of an Office of Inquiry into the Social Aspects of Atomic Energy. The National Committee on Atomic Information also was provided with a fund for a conference of radio industry officials and atomic scientists.

A number of foreign research institutes which had had to suspend or curtail activities during the war were given aid toward resuming their programs.

# **THE HUMANITIES**

## THE HUMANITIES STAFF

During 1946

*Director*

DAVID H. STEVENS

*Associate Director*

JOHN MARSHALL

*Assistant Director*

CHARLES B. FAHS

# THE HUMANITIES

<b>INTRODUCTORY STATEMENT</b>	<b>227</b>
<b>STUDIES IN LANGUAGE AND FOREIGN CULTURES</b>	
Princeton University: Near Eastern Studies	228
Stanford University: Hoover Research Institute	230
Chinese Institute, University of Leiden	232
University of Stockholm: Far Eastern Studies	233
Institute of Pacific Relations: Chinese History	234
<b>AMERICAN STUDIES</b>	
University of Wisconsin	235
Northwestern University	237
Texas State Historical Association	238
<b>LIBRARIES AND MUSEUMS</b>	
American Library Association: Interchange of Personnel and Materials	241
Massachusetts Institute of Technology: Library Building Plans	243
Woodrow Wilson Foundation: League of Nations Docu- ments	244
National Archeological Museum, Guatemala	245
<b>OTHER GRANTS</b>	
University of Oslo: Humanities	246
American Council of Learned Societies: General Support	248
American Council of Learned Societies: Fellowships	250
American Council of Learned Societies: Pacific Coast Com- mittee	251
<b>FELLOWSHIPS, SPECIAL FELLOWSHIPS AND GRANTS IN AID</b>	<b>252</b>

## THE HUMANITIES

DURING 1946 expenditures of \$1,304,200 for the program in humanities represented support to more individual projects than in previous years, with a reduction in the number of large grants. The grants were to institutions in the United States and in Europe that are active in interpretation of contemporary civilization. Training and research in language, literature, history and philosophy continued to be the formal means of developing personnel for the humanities in area programs, and the areas most emphasized continued to be those of Eastern Asia and North America. Chinese, Japanese and Slavic studies were assisted through institutions in this country and in Western Europe.

Individual projects included those of scholars who deal with specific aspects of these cultures, and those that extended international understanding of methods in humanistic study. Travel of scholars in both directions across the Atlantic became possible, and frequent interchange gave renewed impetus to all aspects of work in the humanities. Such visits to libraries and other institutions soon will be practicable, it is expected, for scholars of the Far East.

Humanistic studies around the Mediterranean basin and as far as India already have begun to profit by the movement of scholars beyond their own physical boundaries, while Latin America maintained interchange during the entire war period. Individual scholars at work on aspects of North American culture have in-

tensified their studies, and critical interpretations of life in the United States have been correspondingly more numerous and more significant.

Fellowships in the Humanities Division for men and women returning from war duties were granted during the year up to the full number originally proposed. There were one hundred awards totaling over the two years a quarter of a million dollars. These fellowships demonstrated again the value of intensive periods of study and writing for academic careers in the humanities. Similar aid, to a lesser degree, was given to critics and writers outside the academic orbit but equally concerned with interpretation of contemporary living from values past and present.

### STUDIES IN LANGUAGE AND FOREIGN CULTURE

#### PRINCETON UNIVERSITY

#### NEAR EASTERN STUDIES

While major American universities have maintained chairs and, in some instances, departments of Arabic studies, research and teaching in this field have been primarily concerned with earlier Arab history and literature. Princeton is the only major university which has shown a clear interest in the development of studies of the more recent phases of Near Eastern life and tradition. Since the establishment 20 years ago of its Department of Oriental Languages and Literatures, with a group of scholars whose mother tongue was Arabic and whose training in Near Eastern and American universities fitted them to understand both East and West, Princeton has departed from the traditional practice of American universities and has treated Arabic

as a living rather than a dead language. In 1935 this Department, in collaboration with the American Council of Learned Societies, started a series of summer seminars in which, for the first time in the history of American education, the three major Islamic languages — Arabic, Turkish and Persian — were made the core of a regional program which embraced religion, culture, history and art.

In 1941, in anticipation of government need, the Department, with cooperation from the Department of History and the School of Public and International Affairs, organized an undergraduate course on the Near East to which the Army first assigned a group for special training for service in Arabic countries, and later a second group for service in Turkish-speaking countries. In connection with this wartime course, the University acquired an unusual collection of books, magazines and maps relating to the contemporary situation in the Near East. The library also has a collection of Near Eastern manuscripts of first importance.

The Department of Oriental Languages and Literatures has now assumed primary responsibility for the study of the Near Eastern area, in much the same way that the Department of Classics has responsibility for the study of all phases of the ancient world of Greece and Rome. Other departments of the University, particularly those of history and politics, and the School of International Affairs will collaborate, both by assigning students for the study of the Near East and by providing training in their respective disciplines for students whose major interest lies in Near Eastern studies.

The eventual aim is to develop a program of study comparable to that offered by the School of Oriental

and African Languages of the University of London and the École Nationale des Langues Orientales Vivantes in Paris. Under this broader program the Department will offer undergraduates an opportunity to elect Near Eastern studies as an upper-class field of concentration, requiring the study of at least one Near Eastern language and courses in the culture, religion, history and political institutions of the area; and a two-year graduate course designed as training for government, business or educational service in the Near East, requiring mastery of at least one Near Eastern language, thorough understanding of the religious and cultural background of the people of the area, and knowledge of its current political and economic problems. It is expected that new ways will be worked out of introducing Oriental studies into other departments and integrating them with the study of philosophy, art, history, politics, economics and related subjects.

The Foundation's appropriation of \$42,500 will be used in support of this program, under the leadership of Professor Philip K. Hitti, for a period of five years.

STANFORD UNIVERSITY  
HOOVER RESEARCH INSTITUTE

Early in World War I, Mr. Herbert Hoover saw the need of preserving contemporary documents relating to the war. As chairman of the Commission for Relief in Belgium, as the United States Food Administrator, and as Director General of Relief for the Allied and Associated Powers, he brought together the Hoover War Collection, which became the Hoover Library on War, Revolution, and Peace at Stanford University. Greatly extended by gifts and purchases, the collection

now covers all classes of documentation on the currents of history in European and Asiatic countries for the past 30 years. The gathering of materials continued all during World War II. Purchasing agents are now systematically increasing these resources. Over \$2,000,000 has been used since 1918, in purchases and for a library building. Publication of books and monographs by the Library gives evidence of the potential value of these collections for advanced research.

The war increased greatly the demands upon the Hoover Institute, as the instructional unit of the Library, for direction of advanced training and research in Slavic subjects. Government demands continue in a current training program for the Navy on backgrounds of the present cultures in the Western Pacific, but temporary staff appointments under war emergency assistance are ended. Meanwhile returning service men, introduced to Slavic studies in Army or Navy schools, are looking in increasing numbers for means to continue advanced study. At the same time, scholars from this country and abroad desire a share in co-ordinated research plans at the Institute, and in directing younger workers during periods of resident study.

The five-year grant of \$200,000 from The Rockefeller Foundation makes it possible for the Hoover Research Institute, directed by Professor H. H. Fisher, to award fellowships for research in the Slavic materials in the fields of the humanities and social sciences, in the Hoover Library. These fellowships will furnish opportunities to complete significant research and to complete or extend training for an academic career or public service, and will be awarded only to applicants for whose investigations the materials in the Library offer special advantages. They will help make the

resources of the Library effective to the advantage of present and future scholarship in Slavic fields. Paralleling the fellowship appointments will be grants to scholars who, on temporary duty, can assist with research training while advancing their personal programs of investigation in the Hoover Library.

**CHINESE INSTITUTE  
UNIVERSITY OF LEIDEN**

Interest in Chinese studies in Holland dates back to the time when Dutch navigators discovered the route to the Indies, coming into contact with Chinese trading in Java and soon establishing trade relations on the coast of China. Writings of the embassies sent by the Dutch East India Company to the Court of Peking were translated into all the principal European languages and contributed much to the general knowledge of China during the seventeenth century. An interesting proof of an early effort to study Chinese is a manuscript dictionary of Dutch and Chinese, dated 1628. Since the middle of the nineteenth century, Chinese has been taught at the University of Leiden by a series of distinguished scholars. A collection of Chinese books, some of which arrived in Holland as early as the seventeenth century, has been gradually assembled. Now the Chinese Institute at the University of Leiden is a leading center for Far Eastern studies in Western Europe. It is directed by Professor J. J. L. Duyvendak, internationally recognized student of the Far East, particularly of China.

Despite the closing of the University during the German occupation and the exile from Leiden of Professor Duyvendak under the German order excluding from the University all members of its faculty who had

resigned in protest at German efforts to dominate it, a small group of advanced students succeeded in carrying on their own work. They also continued a project begun before the war, to produce an analytical catalog of the Institute library. Thus at the end of the war there were in the Institute some six students virtually ready for their examinations for the doctorate and with their dissertations well toward completion.

The first and foremost need of the Institute is to give these students a direct acquaintance with Far Eastern studies in other countries, particularly in the United States, and as opportunity allows, in the Far East. With the present lack of such personnel in Europe, the final training of these advanced students takes on special importance. A second urgent need is for books to bring up to date the holdings of the Institute library. The grant of \$20,000 made by The Rockefeller Foundation in 1946 will be available for these two purposes for approximately three years.

**UNIVERSITY OF STOCKHOLM  
FAR EASTERN STUDIES**

There is at present in Sweden one highly qualified scholarly interpreter of the Far East, Professor Bernhard Karlgren, formerly Professor of Far Eastern languages and culture in the University of Gothenburg and now Director of the Museum of Far Eastern Antiquities in Stockholm. He is responsible for courses on the Far East in the University of Stockholm.

A sum of \$12,200 was given to this University so that the universities of Sweden, Norway and Denmark may select one younger scholar from each country for training under Professor Karlgren's direction. Candidates chosen must have had some previous experience in

linguistic and historical studies, they must have passed their first examination for their doctorate, and must from the time of their appointment devote their entire time to Far Eastern studies.

Since the courses offered in the University of Stockholm did not provide for sufficiently intensive training, Professor Karlgren has organized special work which will lead rapidly into advanced study. If at the end of two years the candidates selected give promise of qualifying for university research and teaching on the Far East, plans will be made for a third and fourth year of study, the third presumably to be outside of Scandinavia and preferably in the Far East, the fourth year including study at some of the principal western centers. The students would then return to Stockholm to complete the requirements for the doctorate at the University of Stockholm.

This plan typifies the revival of such collaborative effort among the three countries. It is believed that the three younger scholars will, in their training, lay the basis for future collaboration among them.

INSTITUTE OF PACIFIC RELATIONS  
SOURCE MATERIALS, CHINESE HISTORY

Since May 1939, the Foundation has appropriated a total of \$112,800 to the American Council of the Institute of Pacific Relations for production of English translations of source materials on Chinese history. In 1946, an additional one-year grant of \$25,000 was made for the continuation of this work.

Chinese and American specialists under the direction of Dr. K. A. Wittfogel have advanced systematically the preparation of annotated texts and translations of certain parts of the dynastic histories of China. The

selected passages reveal social and cultural changes during these four dynastic periods: Ch'in and Han (221 B.C.-220 A.D.); Liao (907-1125); Chin (1115-1235); and Ch'ing (1616-1912). Materials covering the evolution of China within these time limits are in advanced stages of preparation for printing. The manuscript on the Liao Dynasty has been put into type and shortly will be published under the joint auspices of the American Philosophical Society and the Macmillan Company. Work on the Ch'in and Han Dynasty, a period of crucial importance for the crystallization of Chinese institutions and culture, is nearing completion, and that on the Chin Dynasty is well advanced.

These works will be the first in a western language to present the essential elements of Chinese history from original texts. They will be source books for all persons depending on translation and on scholarly interpretation of meanings. Chinese readers, as well, will find the original texts, translations and notes valuable for reference and study. A further important product of the work will be a comparative study of Oriental society, prepared by Dr. Wittfogel. At the end of the project the staff that has been recruited in the United States and China will be highly serviceable for similar tasks and for training others in methods of scholarly research. The processes of coordinated research which have been developed and demonstrated will have long-term influence on Chinese studies at other institutions.

#### AMERICAN STUDIES

UNIVERSITY OF WISCONSIN

AMERICAN STUDIES

An evident need in the development of American studies is for university centers where research will

yield materials of value both for teaching and for better general understanding of American life and tradition. At the University of Wisconsin, as elsewhere, studies of American language, literature and history have been developed largely through the initiative of individual scholars. Work in historical and cultural studies there has now advanced to a point where those concerned are ready to join with their colleagues in other fields on broad planning which will give new scope and direction to their work.

Under the direction of Professor Merle Curti, member of the Department of History and author of *The Growth of American Thought*, the University began the serious consideration of its particular opportunities for teaching and research in this field. A plan was formulated in 1945 for studies in the economy and culture of Wisconsin to be administered by the Graduate School Research Committee in consultation with a special committee of which Professor Curti is chairman. The plan was introduced as follows:

"The development of Wisconsin is, to a large extent and in a very real way, the story of American civilization. Only little more than a century ago, Wisconsin was but a wilderness, lightly tied to Western civilization in two corners by frontier mining settlements and fur-trading centers. Today, Wisconsin is a highly developed and integrated segment of modern America — the home of over three million people, the location of important industrial cities, and the source of a significant portion of the nation's food supply. The process by which this transformation took place in Wisconsin is more typical than unique in relation to the evolution of American society. The similarities lie in the fact that Wisconsin's development encompasses the exploitation of primary resources, the conversion of a publicly owned wilderness to privately owned family farms, the mingling of diverse ethnic groups, the rise of corporate industry, the commercialization of agriculture,

the spread of urbanism, and the accompanying ferment in political affairs. . . . Wisconsin's uniqueness in this great transition process and in its present social pattern lies mainly in the variety and intensity in which the common elements in American civilization occur in the state. Into but few areas of comparable size have nature and history poured a larger or more diverse quantity of the stuff out of which America has been fashioned."

Personnel for studies of the rural, social and business life of the State were available. Work in other fields will be carried out by such scholars as Professor Curti (history of American thought), Professor Henry A. Pochmann (the German element in American life), Professor Harry Hayden Clark (American literature), Professor Miles Hanley (American language), and Professor Robert Gard (native tradition in folklore). The Foundation is assisting in the development of the program with a three-year grant of \$75,000.

#### NORTHWESTERN UNIVERSITY

#### AMERICAN CULTURE

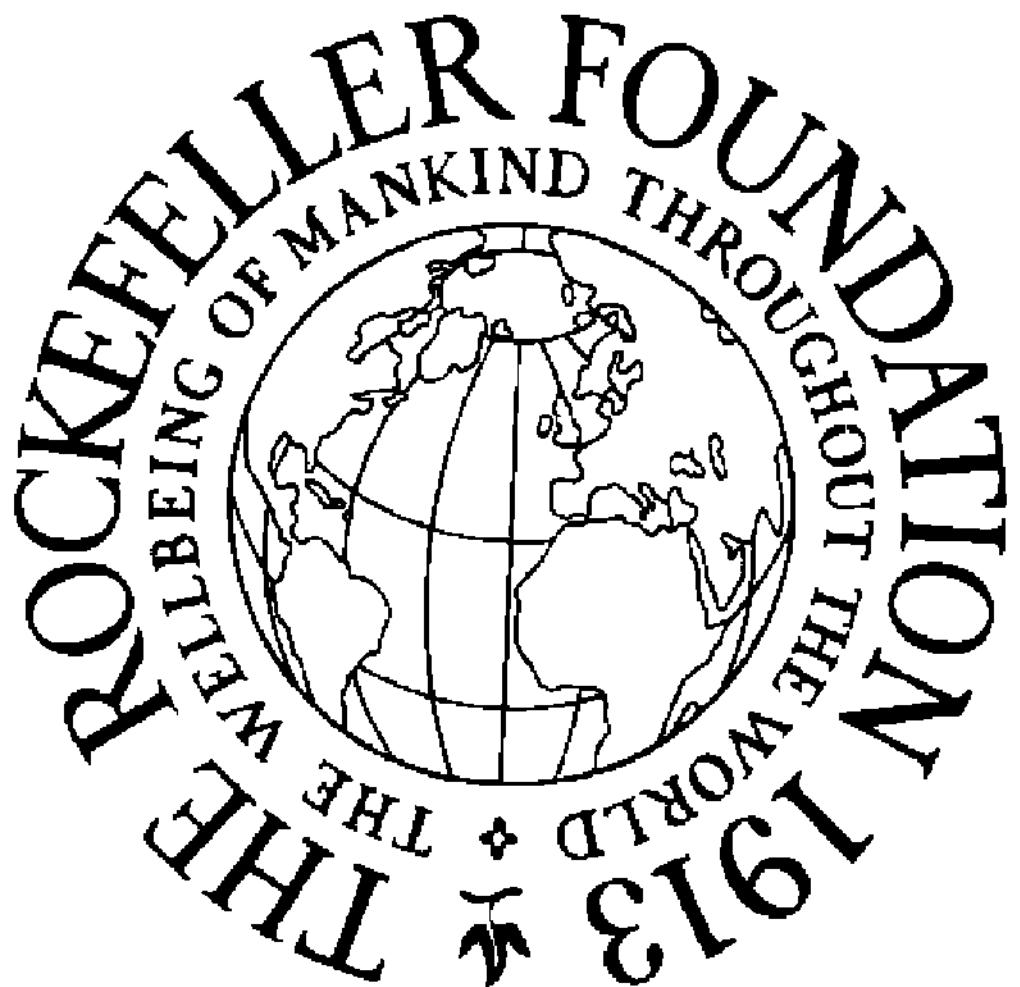
Toward a program of teaching and field studies in American culture under the direction of Professor Baker Brownell, during a five-year period, an appropriation of \$25,000 was made in 1946 to Northwestern University. Training courses for advanced students in the humanities are being developed at Northwestern to supply teachers and interpretive writers on American life who can guide intensive research on fact and tradition and develop possibilities for use of the materials in a given area. Largely as a result of regional studies at the University of Montana, also directed by Professor Brownell, requests for such personnel have come from nearly all the states west of the Mississippi. Plans based on the work in Montana are now under way in Washington, Oregon, Colorado and New Mexico.

The pattern of Professor Brownell's program has been developed during the past two years of his work in Montana. Through its six state institutions, Montana proved to be admirably suited for demonstrating a plan to reach all communities and organizations in a region.

It is Professor Brownell's belief that instead of an individual-centered culture, education and philosophy, there is possible a community-centered culture, education and philosophy which would be far more adequate in dealing with modern problems. His work aims to show that the community — meaning the small, face-to-face, primary community — is not only essential to our cultural welfare and survival, but may also be made central in educational and philosophical theory. The emphasis is on an integrative, human-centered life in small groups, rejecting both the extreme individualism and the mass totalitarianism that are concomitant and reciprocal characteristics of the contemporary era.

#### TEXAS STATE HISTORICAL ASSOCIATION

The Texas State Historical Association carries on its work under the direction of leading Southwestern historians, with Professor Walter Prescott Webb serving as director. Though located at the University of Texas, its administration is independent of the University. Its regular activities include the publication of the *Southwestern Historical Quarterly*; the *Junior Historian*, written by and for young people in the secondary schools; and the preparation of the *Handbook of Texas*, scheduled for publication in 1949. The *Handbook* will be an authoritative, comprehensive encyclopedia of Texas history, biography and culture, the product of the combined literary and scholarly ability of the people of



Photograph Excised Here

Hoover Library on War, Revolution, and Peace, Stanford  
University.



Photograph Excised Here

League of Nations Room, Woodrow Wilson Foundation.

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Texas. After six years of operation, the plan for the *Handbook* has been worked out, 13,000 subjects to be treated have been agreed upon, about half of them have been assigned to writers, and of these about 3,000 have been completed.

Following a previous grant, The Rockefeller Foundation in 1946 provided \$18,000 over a three-year period to the Texas State Historical Association for studies of Southwestern history. The earlier appropriation was used to finance 17 individual studies, to encourage younger writers whose work was published in the *Junior Historian*, and to help pay for editorial expenses involved in the preparation of the *Handbook of Texas*. Most of the individuals receiving assistance are in Texas colleges other than the University, and a number are included who have no connection with any educational institution. Grants were made only to those who had studies already well under way.

Typical of the subjects dealt with are "Gib Morgan, Minstrel of the Oil Fields"; "Maverick Town, The Story of Old Tascosa"; "Charles Goodnight, Cowman and Plainsman"; a study of Jeff Milton based on his recollections of his life as cowboy, frontier sheriff, member of the Texas Rangers, Wells Fargo agent, both before and after the coming of the railroads; "Cattle Trails of Texas and the Men Who Made Them"; and "I'll Die Before I'll Run: The History of Feuding in Texas."

#### LIBRARIES AND MUSEUMS

AMERICAN LIBRARY ASSOCIATION

INTERCHANGE OF PERSONNEL AND MATERIALS

With the end of the war, exchanges of library personnel and materials between the United States and

Europe and the countries of the Far East, similar to those already undertaken between the Americas by the International Relations Board of the American Library Association, again became possible. Leading librarians abroad who participated in international library activities before the war have little or no knowledge of developments in library work outside their own countries since the war began. In many instances, librarians with earlier international experience have now been replaced by younger men without knowledge of international library service. This lack of contact and acquaintance is particularly serious at a time when the international circulation of materials in print involves questions of unusual urgency.

The Foundation has contributed to the work of the International Relations Board since 1942 with grants totaling \$142,250, including two current grants for exchanges of library personnel within North and South America and for general support of the Board. Additional funds amounting to \$30,000 have now been given to enable the Board to maintain, though on a more limited scale, the exchanges of personnel between North and South America, and to extend these exchanges to other sections of the world. The money will be used for such purposes as inviting representative European librarians to this country, undertaking a survey of the libraries of India, and establishing as soon as possible direct contacts between librarians in this country and those of the Soviet Union.

Aside from the general benefit of these exchanges, they will have special value for the work of the International Relations Board of the Association at a time when it is concerned with the allocation to libraries abroad of the stocks of American books and periodicals

published during the war and purchased with help from The Rockefeller Foundation for distribution after the war.

MASSACHUSETTS INSTITUTE OF TECHNOLOGY  
LIBRARY BUILDING PLANS

The Cooperative Committee on Library Building Plans is an informal committee formed in 1944 for the purpose of improving the planning of university library buildings through a pooling of experience, ideas and knowledge. Its membership is made up for the most part of librarians, including representatives from Massachusetts Institute of Technology, Harvard, Princeton, Pennsylvania, North Carolina, Duke, Chicago, Wisconsin, Iowa and the Claremont Graduate School. Architects and engineers have been invited to the discussions, each of which has lasted several days, to deal both with major policy questions facing anyone about to build a university library building, as well as with detailed problems concerning relation of parts or current best practices, materials and techniques.

The Committee will make available to other librarians in mimeographed form verbatim transcripts of its discussions and will prepare a manuscript, suitable for publication, presenting the conclusions reached in its deliberations. This report will focus the best opinion now available on such matters as the effect of present educational trends on research libraries, technological trends as they apply or may be applied to library and scholarly uses, questions of library administration which affect and in turn are affected by library buildings, engineering data, and the relationships of librarians and architects in the preparatory steps leading to the planning of a library building. Editorial responsibility

will be vested in three members of the Committee: its chairman, Dr. Julian P. Boyd, Librarian of Princeton University; its secretary, Dr. Charles W. David, Director of Libraries in the University of Pennsylvania; and Professor John E. Burchard, Director of Libraries at the Massachusetts Institute of Technology. A final draft of the manuscript prior to publication will have the approval of the full Committee.

Interest in this subject is due to the fact that a number of universities and colleges must as soon as possible construct new library buildings. Scheduled construction will cost in excess of \$25,000,000, and at least an equal additional amount of building is needed and projected. As a result, librarians beyond the small number which can be included in the Committee have been increasingly eager to have the benefit of its findings. A grant of \$8,500 from the Foundation is in support of the work of this Committee.

#### WOODROW WILSON FOUNDATION LEAGUE OF NATIONS DOCUMENTS

Since the end of World War II there has been greatly increased reference to the League of Nations' quarter-century printed record of nation discussing with nation the common interests of man. The most complete collection of League of Nations documents in this country is in the Library of the Woodrow Wilson Foundation, an institution established after World War I with gifts both large and small from some 200,000 Americans. There are 2,700 bound volumes in this Library, containing in some instances several hundred unclassified items. The Library was fortunate in being made beneficiary of "States Member Service" of the League, even though this country was not a member, thereby receiving all the special documents for committees as

well as documents in print. No other library in the United States has such resources; the two other libraries most frequently called on for League materials, the New York Public and the Library of Congress, have only partial and incompletely catalogued collections.

With increasing use of the documents making additional cataloguing imperative, research and cataloguing were begun in October 1945 as a result of a grant in aid from The Rockefeller Foundation. In 1946, when it became evident that demands on the League material required completion of the cataloguing in the shortest possible time, an additional grant of \$21,000 was made.

During the past year two special staff workers have developed a classified system covering all types of material in the collection that will make this library as useful as that of the League of Nations itself. The Library of Congress is printing cards prepared at the Woodrow Wilson Foundation, so that from that source any library in the world can purchase the card collections covering the entire range of material.

#### NATIONAL ARCHEOLOGICAL MUSEUM, GUATEMALA

The Government of Guatemala is converting the National Archeological Museum of that country into a teaching and research center located in a new building. The Rockefeller Foundation has appropriated \$9,000 to the Ministry of Public Education, which will enable an American specialist, Professor Paul Nesbitt, to act as advisor to the Government, taking charge of exhibits and technical services of the federal Museum in Guatemala City, lecturing on the Indian cultures of Latin America and training personnel to continue the operation of the Museum at a high level. Previously fellowships were given by the Humanities Division to the present Director of Historical Studies, Dr. Antonio

Goubaud, and to his assistant, Dr. J. Rosales. Through training at the University of Chicago these men were prepared for special service with their Government in reorganization of research, of education and of institutions.

The contents of the Museum will be chosen mainly from the entire gathering of objects made by the Carnegie Institution over a long period and from special collections recently secured. One collection of special interest to American students of design is a large group of Guatemalan textiles, lately given to the Government, which is the most complete and valuable record of native design in any American country.

#### OTHER GRANTS

##### UNIVERSITY OF OSLO

##### HUMANITIES

In the countries of Western Europe the universities are preparing to assume an even greater importance than before the war. Their humanistic faculties are planning not to resume prewar activities but rather to exemplify in university teaching and research the marked reorientation of outlook which developed among humanists during the war years. There is everywhere a keen awareness of the responsibility to make teaching and research relevant to needs of the present and the future. The presence of large numbers of students who experienced the occupation as members of active resistance groups has emphasized this need.

With the return of its faculties and students from exile, imprisonment and hiding, the University of Oslo reopened its doors in the autumn of 1945. Throughout the occupation, its faculty and students had been active in the resistance movement or in the work of the

Norwegian Government in Exile, and its losses of personnel because of collaboration were unusually small. Despite the fact that members of its faculty were faced with the problem of providing instruction for the accumulation of students who had been unable to attend the University during the occupation, time was found for extended discussion of plans for reform and development of the University. Special attention was given to the need of developing the work of the humanistic faculty in order particularly to make the study of the humanities better serve the needs and interests of the younger people of Norway. Four concrete developments were agreed on, and the Foundation has provided \$33,000 toward their early realization.

First, it was decided that the study of philosophy should have a more important place. Until now the University has had only one chair of philosophy despite the fact that an initial course in the subject is required of all undergraduates. A new chair of Greek and Roman philosophy has now been established. Provision is also being made to extend the teaching of modern philosophy. Part of the Foundation funds will go to building up personnel in philosophy by enabling a small group of carefully selected students to conclude their advanced work by study abroad, particularly in the United States.

Second, the University has established a chair of American literature and has nominated as its first occupant Dr. Sigmund Skard. During the occupation Dr. Skard served in the United States as a consultant of the Library of Congress. Before taking over this chair he will devote approximately a year in the United States and Canada to gaining a more direct acquaintance with the study of American literature and its organization in

the universities. Foundation funds will provide for the expenses of Dr. Skard's final preparation for his professorship and for the purchase of needed materials.

Third, the University is concerned to develop its teaching of modern languages, to keep up with the very considerable advances made in this field. One of the University's younger teachers of language will be sent to the United States for six months to study methods of teaching developed during the war.

Fourth, a need is felt for reform in the administration of the University. Mr. Arne Halvorsen, the General Secretary of the faculty and the only permanent administrative officer of the University, has been given an opportunity to study and compare methods of university administration in Great Britain, France and particularly in the United States. He will not only concentrate upon the technical details of administration but quite as much will devote his attention to the general trends of university life.

#### AMERICAN COUNCIL OF LEARNED SOCIETIES GENERAL SUPPORT

In 1945 the American Council of Learned Societies completed its first 25 years of activity. Its work over this period has been directed by Dr. Waldo G. Leland. Over these years the Council has been a federation, of which 24 academies, associations and societies are the constituent members. These parts include an aggregate membership of about 28,000 — a very large proportion of the persons in the United States who are actively engaged in research and university teaching in the humanistic fields.

Its activities fall into the following general categories:

fellowships, grants in aid of research, assistance to publication, studies of the major areas of the world, Negro studies, musicology, the teaching of modern languages, documentation and the supply of materials for research, education and international relations. The international interests, responsibilities and activities of the Council have increased since its organization until during the war they came to occupy a substantial part of the attention and time of the executive offices.

At first the Council devoted itself to serving the current interests of humanistic studies in the United States. From 1935 to 1941 it developed a measure of leadership in humanistic studies, particularly through encouraging the development of so-called "under-worked fields," notably Far Eastern, Slavonic, Latin American, Middle Eastern and Negro studies. From the beginning of the war until today, the Council has assumed responsibility for a number of wartime services that gave it greater influence nationally and internationally. Most significant in scope and results has been its preparation of materials for intensive language instruction and administration of language-area courses in 55 centers of training for military duty.

Of its purposes and objectives, the following are of major significance: the discovery and development of superior research and teaching personnel; improvement of methods and implements of research; improvement of education; extension of American scholarly interest to subjects, periods and areas not yet sufficiently studied, particularly those important for the United States; encouragement of the study of American culture; promotion, organization and conduct of intellectual relations with other countries; cooperation

with government agencies, with private agencies, and especially with the Council's constituent societies.

Since 1935 the Foundation has appropriated to the Council a total of \$1,280,050, of which \$285,000 has been for general support. An additional five-year grant of \$250,000 for general support has now been made.

#### AMERICAN COUNCIL OF LEARNED SOCIETIES FELLOWSHIPS

The purpose of the fellowship program of the American Council of Learned Societies is to discover and develop superior research and teaching personnel in the fields of the humanities. Special importance is attached at this time to the development of qualified and inspiring teachers in order to meet a major need of humanistic studies. Another major need is for the training of scholars in certain fields of study that are still under-worked or even neglected in the United States.

After an interval of inactivity during the war, the fellowship committee of the Council has developed new plans for awarding fellowships. These plans call for continuous survey of the field by regional advisors, visited regularly by the secretary or his assistant, and for awards under previously determined objectives in training and research. More emphasis will be placed on the *discovery* of personnel. Decisions will be on a much broader base of information, and with definite ends in view for the recipients of awards. Dr. Donald Goodchild, as secretary of the Council for fellowships, will have charge of the national canvass and selection.

Since 1935 the Council has administered fellowships by means of funds supplied by The Rockefeller Foundation, the total amount appropriated to date for fellow-

ships and grants in aid amounting to \$135,000. The additional grant made for this purpose in 1946 amounts to \$150,000 for use over a period of three years.

AMERICAN COUNCIL OF LEARNED SOCIETIES  
PACIFIC COAST COMMITTEE

During the past two years the Pacific Coast Committee of the American Council of Learned Societies has made a survey of scholarship in the humanities on the Pacific Coast and has studied ways of promoting closer contacts among humanists in colleges and universities, from southern California to British Columbia. It has become thoroughly familiar with the special opportunities and obligations of this region for the humanities. The Committee has now been given regional responsibility for aiding work in the humanities along the Pacific Coast. The Rockefeller Foundation is supporting the Committee's activities with an appropriation of \$35,000 to be used over a period of five years.

The Committee will assist the exchange of personnel between institutions on the West Coast and those of the Middle West and East, and will make directly available to humanists of the region small grants in aid for interpretative studies. In addition, it has arranged for publication by the Stanford University Press of a quarterly journal to be known as the *Pacific Spectator*, which will bring to general readers the outcome of interpretative work in the various fields of the humanities.

The present membership of the Committee includes Professor W. A. Nitze, University of California at Los Angeles, as chairman; John W. Dodds, Dean of the Humanities, Stanford University; E. Wilson Lyon,

President of Pomona College; Professor Archer Taylor, University of California at Berkeley; and Dr. Louis B. Wright, Huntington Library.

#### FELLOWSHIPS, SPECIAL FELLOWSHIPS AND GRANTS IN AID

In December of 1944, \$100,000 was appropriated as a Special Fellowship Fund in Humanities to be allocated by the officers during the period ending December 31, 1945, for the purpose of postwar development of personnel in the United States. In June 1945 an additional \$100,000 was appropriated for this purpose to be allocated during the period ending December 31, 1946. It had originally been intended to restrict the total appointments to 80, but return from wartime service during the first months of 1946 resulted in the appearance of an unexpected number of new and promising candidates, in addition to some whose proposals could not be acted upon within the limits of the funds previously provided. As a result, an additional sum of \$50,000 was provided so that the total number of appointments could be increased to 100. All appointments have now been made.

A prerequisite for selection was that a candidate's development must have been seriously interrupted by the war as a result of service in the armed forces, in the work of government departments, or by reason of the preempting demands of wartime teaching in the training program of the armed forces. Apart from this requirement, the primary criterion of selection was the individual promise of the man or woman in question. The attempt was to identify among applicants those of conspicuous intellectual and creative promise without regard to age, academic standing or position. In general, appointments went to candidates whose contribution

will be made in teaching and writing as members of college and university faculties. Some of the subjects for which postwar fellowships were awarded are: American archeology, classics, drama, English, Far Eastern studies, history, Latin American studies, Middle Eastern studies, philosophy, Romance languages, Slavonic studies.

Grants in aid ranged in amount from \$200 to \$7,500, with a majority of grants over \$2,000. The 22 grants in aid listed as "Other grants" cover a wide variety of subjects. Several were for philosophical studies and for development of literary criticism. One was for promotion by the International Federation of Documentation of plans for international information services; another for a conference on the Federal Communications Commission's report, "The Public Service Responsibility of Broadcast Licensees." A grant was made for a study of hand weaving in Guatemala. Three officials of the Netherlands Government received assistance for a study of museum methods in the United States and Canada. Of the 57 grants in aid, 37 were for work in countries other than the United States or for work in the United States on foreign cultures.

The regular fellowships for advanced training and the grants in aid, used largely to encourage development of new fields in the humanities, were distributed in five general fields:

	<i>Grants in Aid</i>	<i>Fellowships</i>
American studies	14	3
Studies in language and foreign cultures	12	14
Drama, film and radio	5	5
Libraries	4	3
Other grants	22	9
	—	—
	\$7	34

## **OTHER APPROPRIATIONS**

## **OTHER APPROPRIATIONS**

<b>PRIVATE FOREIGN COLLEGES IN CHINA</b>	<b>259</b>
<b>COMMISSION TO CHINA</b>	<b>260</b>
<b>GENERAL EDUCATION BOARD</b>	<b>261</b>
<b>COMMITTEE FOR REHABILITATION OF POLISH SCIENCE AND CULTURE, INC.</b>	<b>262</b>
<b>AMERICAN LIBRARY ASSOCIATION: PURCHASE OF JOURNALS</b>	<b>264</b>

## OTHER APPROPRIATIONS

### PRIVATE FOREIGN COLLEGES IN CHINA

**I**N 1946 The Rockefeller Foundation gave \$500,000 to the Associated Boards for Christian Colleges in China towards the restoration and rehabilitation of foreign universities and colleges in China. Sums previously appropriated to the Associated Boards amount to \$425,000.

With the exception of St. John's and Soochow universities, both in Shanghai, the war forced the Christian Colleges to find new locations in Free China. In 1946 they faced the problem of returning to prewar campuses. With the coming of peace, there was a general conviction on the part of the colleges, as well as the Chinese Ministry of Education, that return should be delayed, in some instances for as much as a year. This decision, strategic in character, provided time for a complete analysis of the conditions existing on the various college campuses, and for a careful study of indicated changes in educational programs. The 13 Christian Colleges entered the war with reasonably good, although inadequate equipment. In some instances, equipment has completely vanished; in others, by the sharing process, equipment and supplies have been terribly depleted. Staff members even sold possessions to purchase food.

Since December 1942, the Associated Boards has sponsored a planning committee which has had the advisory services of American educational experts, as well as visitors from China. A planning committee in

Great Britain has collaborated, and a planning commission in China has studied the situation. The result of these investigations was a proposal that the Christian Colleges be reduced by a process of federation and amalgamation from thirteen to eight located at strategic centers, with a combined enrollment limited to 7,350. The creation of eight educational centers involves certain amalgamations of existing colleges. Fukien is expected to combine with Hwa Nan; Nanking with Ginling. One university is contemplated in the Shanghai area instead of four. Improvement in quality is the dominant purpose of this plan, even though it means limitation of the number of institutions and the courses offered. Duplication and overlapping is to be eliminated in so far as possible. The primary emphasis will be on general education, supplemented by professional training in education, social service, medicine, nursing and theology — fields which are of especial value to the Christian Church in China. There will also be developed one outstanding center in agriculture, engineering and commerce. Graduate courses will be concentrated at three widely separated locations: Peiping, Nanking and Canton.

In the development of these institutions special attention will be given to the cultivation of a broader understanding between East and West.

#### COMMISSION TO CHINA

In the first part of 1946, a Commission consisting of Dr. C. Sidney Burwell, Dean of Harvard Medical School, Dr. Harold H. Loucks of the China Medical Board and formerly Professor of Surgery at the Peiping Union Medical College, and Dr. Alan Gregg of The Rockefeller Foundation, was appointed by the Foundation to visit China and study on the ground the problem

of the development of medicine and public health. The Commission was instructed to study the present situation in broad terms, not limited to the Peiping Union Medical College, nor to medical education exclusively, in order to present the needs of China that might properly be the concern of The Rockefeller Foundation and the China Medical Board and to aid in the formulation of an effective program for the future.

The Commission arrived in Shanghai by air from San Francisco on May 15, 1946. Visits were made to Shanghai, Nanking, Peking, Kalgan, Chengtu, Chungking and, on return, Nanking and Shanghai. From Shanghai on July 22, the Commission returned to the United States. Thanks to the constant help and hospitality of Chinese authorities, and with aid from General Marshall's Executive Headquarters, the time available was well employed and a number of otherwise inaccessible places were visited.

The report presented by the Commission gave an estimate of the present situation in China and the major needs of that country, discussed general considerations bearing on the formulation of a program and recommended specific measures.

#### GENERAL EDUCATION BOARD \*

The largest single appropriation made by The Rockefeller Foundation in 1946 was \$7,500,000 to the General Education Board for its work during the five-year period starting in 1947. Founded as an independent organization in 1902, the General Education Board works in the field of education within the limits of the United States. In recent years the program of the Board has been confined almost exclusively to the promotion of education in our southern states. Emphasis

\* See page 44.

has been on better utilization of the South's resources — its agriculture, land tenure and use, forestry, fisheries — as a means of providing a better life for the people; and immediate practical problems such as education, nutrition and housing. Perhaps the greatest single opportunity of the immediate future is in forwarding agricultural, vocational and general education at lower levels among the inarticulate masses of the colored people of the South.

No private agency or foundation is as well known, as influential, or as widely respected in the South as the General Education Board. Perhaps no other area of the nation has been so greatly influenced by a foundation. In a peculiar sense the Board has become part of the web of southern education and of southern life. The job it started out to do 40 years ago is far from completed. While in great ferment, the situation in the South is full of hope and opportunity, and the General Education Board has much in the way of leadership and experience to offer.

Due to its policy of drawing on principal funds in order to support important work, the General Education Board has come practically to the end of its resources, except for the sum of \$10,000,000 which has been set aside as a capital fund for administrative expenses. The grant from The Rockefeller Foundation will enable the Board to continue its activities on a reduced scale.

COMMITTEE FOR REHABILITATION  
OF POLISH SCIENCE AND CULTURE, INC.

Present reports of the losses of printed materials in the countries of Central and Eastern Europe, both by destruction and German expropriation, indicate that

needs there are more urgent than in Western Europe. By comparison the losses of libraries in Western Europe were small, major losses being limited to the few libraries that were destroyed. In the western countries the supply of at least one copy of more important American books and periodicals published during the war years is assured by the Foundation's grant to the American Library Association. Furthermore, in each of the countries in Western Europe the Government has been able to release limited amounts of foreign exchange for the purchase of books and periodicals. But the foreign exchange holdings of the countries of Central and Eastern Europe are so restricted that similar releases there can hardly be effective for meeting their needs for printed materials.

The Committee for the Rehabilitation of Polish Science and Culture, Inc., was recently incorporated in the State of Delaware as a result of a request of the Polish Minister of Education, in order to help meet present needs of educational and scientific institutions in Poland. Losses in ten leading libraries in Poland range from 100 per cent to 30 per cent of holdings, with an average loss among the ten of 66 per cent, or a total of 1,461,000 volumes. In this situation, the need in Poland is not, as in Western Europe, to bring library holdings up to date by the acquisition of materials published in other countries during the occupation, but rather to make available, as rapidly as possible, working collections of books which will give Polish readers some access to recent advances in knowledge. The Foundation has appropriated \$50,000 to the Committee for this purpose. The United States International Book Association is acting for the Committee in placing orders and assembling books, and arrangements for

their prompt shipment to Poland are assured by UNRRA. Purchases will not be limited to books published during the war years, but will include any American books which remain standard. The sum provided is sufficient to purchase approximately 1,000 volumes for each of the following libraries:

National Library, Warsaw  
University of Warsaw  
Curie-Sklodowska University, Lublin  
University of Lodz  
University of Cracow  
University of Poznan  
University of Torun (formerly of Wilno)  
University of Wroclaw (formerly of Lwow)  
Medical School, Gdansk  
School of Business, Warsaw

#### AMERICAN LIBRARY ASSOCIATION

#### PURCHASE OF JOURNALS

Since June 1941, the Foundation has made six appropriations totaling \$370,000 to the American Library Association to provide American scholarly journals to libraries in war areas. In 1946 additional support for this work was provided in the amount of \$19,000. The Association's Committee on Aid to Libraries in War Areas continued in 1946 to purchase periodicals and journals for libraries cut off from normal subscriptions during the war. The major part of its efforts during the year, however, was devoted to distributing its collections to appropriate libraries abroad. This work has required the making of many difficult decisions and the surmounting of innumerable obstacles. By the end of the year, however, shipments had been started toward nearly every country on the list. For some countries the operation has been completed.

Great care has been taken in attempting to place the materials collected by the Committee in libraries which can provide the widest possible circulation. In order to fill some gaps in the collections for which printed copies are unavailable, some photolithographic or microfilm reproduction will be done during 1947.

## **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, 1946:

	<i>Pages</i>
Balance Sheet.....	270-271
Principal Fund.....	272
Appropriations and Payments.....	272-273
Unappropriated Authorizations.....	273
Funds Available for Commitment.....	274
Equipment Fund.....	274
Appropriations and Unappropriated Authorizations.....	275
Appropriations During 1946, Unpaid Balances of Prior Year Appropriations, and Payments Thereon in 1946.	276-309
Refunds on Prior Year Closed Appropriations.....	310
International Health Division — Designations During 1946, Unpaid Balances as at December 31, 1945, of Prior Year Designations, and Payments Thereon During 1946.....	311-324
The Rockefeller Foundation Health Commission — Designations During 1946, Unpaid Balances as at December 31, 1945, of Prior Year Designations, and Payments Thereon During 1946.....	325-327
Transactions Relating to Invested Funds.....	328-334
Schedule of Securities on December 31, 1946.....	335-340

## THE ROCKEFELLER FOUNDATION

BALANCE SHEET — DECEMBER 31, 1946

## ASSETS

SECURITIES (Ledger value).....	.....	8167,609,145.93
(Market value \$236,647,757.80)		

## CURRENT ASSETS

## Cash on deposit

In New York.....	.....	\$1,269,525.03
In London — £14,610-12-0 @ \$3.665.....		53,550.80
In Canada—C\$518,991.05 @ .9065 .....		470,473.55
		<hr/>
		1,793,549.38

Advances and deferred charges.....	.....	\$800,498.39
------------------------------------	-------	--------------

Sundry accounts receivable.....	.....	91,649.80
		<hr/>

## EQUIPMENT

In New York.....	.....	52,283.40
		<hr/>

		\$170,347,126.90
		<hr/>

TREASURER'S REPORT

271

BALANCE SHEET — DECEMBER 31, 1946

FUNDS AND OBLIGATIONS

PRINCIPAL FUND.....	\$138,005,205.64
COMMITMENTS	
Unpaid appropriations.....	\$30,727,897.32
Unappropriated authorizations.....	1,277,210.00
	<hr/>
FUNDS AVAILABLE FOR COMMITMENT.....	221,431.46
CURRENT LIABILITIES	
Accounts payable.....	63,099.08
EQUIPMENT FUND.....	52,283.40
	<hr/>
	\$170,347,126.90
	<hr/>

## PRINCIPAL FUND

Balance, December 31, 1945.....	\$146,473,524.94
<b>Add</b>	
Bequest under Will of Robert Marsh, Jr.....	\$460,946.90
Bequest under Will of William F. Hendry.....	24,033.35
Amount by which the proceeds of securities sold, redeemed, etc., during the year exceeded the ledger value.....	929,700.45
	<u>1,414,680.70</u>
	\$147,888,205.64
<b>Deduct</b>	
Amount transferred to Appropriations Account by action of the Trustees to meet specific appropriations.....	9,883,000.00
Balance, December 31, 1946.....	<u>\$138,005,205.64</u>

## APPROPRIATIONS AND PAYMENTS

Unpaid appropriations, December 31, 1945.....	\$21,774,359.16
Appropriations during the year 1946 (For detail see pages 276 to 309):	
Public Health.....	\$2,450,000.00
Medical Sciences.....	1,395,985.00
Natural Sciences.....	2,510,140.00
Social Sciences.....	2,633,677.00
Humanities.....	1,304,200.00
General Education Board.....	7,500,000.00
Program in China.....	500,000.00
Miscellaneous.....	114,000.00

<b>Administration:</b>		
Scientific Services.....	\$761,652.53	
General.....	287,465.47	
		\$19,457,120.00
Unused balances of appropriations allowed to lapse.....	662,376.92	\$18,794,743.08
		\$40,569,102.24
 <b>Payments on 1946 and prior years' appropriations</b>		
(For detail see pages 276 to 309):		
Public Health.....	\$2,574,057.33	
Medical Sciences.....	1,448,179.76	
Natural Sciences.....	1,440,502.76	
Social Sciences.....	1,810,144.94	
Humanities.....	1,028,298.51	
Program in China.....	515,794.52	
Miscellaneous.....	108,833.22	
 <b>Administration:</b>		
Scientific Services.....	657,979.84	
General.....	257,414.04	9,841,204.92
		\$30,727,897.32

**UNAPPROPRIATED AUTHORIZATIONS**

Unappropriated authorizations, December 31, 1945.....	\$1,252,754.00
Add	
Authorization during 1946 for later appropriation by the Executive Committee.....	24,456.00
Unappropriated authorizations, December 31, 1946.....	\$1,277,210.00

## FUNDS AVAILABLE FOR COMMITMENT

Funds available for commitment, December 31, 1945.....		\$590,697.22
<b>Add</b>		
Income and refunds received during 1946		
Income (including \$36,764.28 from Bequest under the Will of Robert Marsh, Jr.).....	\$8,529,496.64	
Refunds.....	37,436.68	
Amount transferred from Principal Fund by action of the Trustees to meet specific appropriations..	9,883,000.00	
Unused balances of appropriations allowed to lapse.....	662,376.92	19,112,310.24
		\$19,703,007.46
<b>Deduct</b>		
Appropriations during 1946.....	\$19,457,120.00	
Authorizations during 1946.....	24,456.00	19,481,576.00
Funds available for commitment, December 31, 1946.....		\$221,431.46

## EQUIPMENT FUND

	BALANCE DEC. 31, 1945	CHANGES DURING 1946		BALANCE DEC. 31, 1946
		EXPENDITURES	DEPRECIATION	
Library.....	\$12,553.00	\$376.35	\$554.35	\$12,375.00
Equipment .....	36,925.50	3,205.37	222.47	39,908.40
	<hr/> <b>\$49,478.50</b>	<hr/> <b>\$3,581.72</b>	<hr/> <b>\$776.82</b>	<hr/> <b>\$52,283.40</b>

## APPROPRIATIONS AND UNAPPROPRIATED AUTHORIZATIONS

Unpaid appropriations and unappropriated authorizations, December 31, 1945

Unpaid appropriations.....	\$21,774,359.16
Unappropriated authorizations.....	1,252,754.00

Add

Amount appropriated and authorized during 1946.....	\$19,481,576.00
Less: Appropriations lapsed during 1946 .....	662,376.92
	18,819,199.08

\$341,846,312.24

Deduct

Payments on 1946 and prior years' appropriations.....	9,841,204.92
	_____

Unpaid appropriations and unappropriated authorizations, December 31, 1946

Unpaid appropriations.....	\$30,727,897.32
Unappropriated authorizations.....	1,277,210.00

\$32,005,107.32

**APPROPRIATIONS DURING 1946, UNPAID BALANCES OF PRIOR YEAR APPROPRIATIONS,  
AND PAYMENTS THEREON IN 1946**

	APPROPRIATIONS PRIOR YEARS	1946	1946 PAYMENTS
<b>PUBLIC HEALTH</b>			
International Health Division of The Rockefeller Foundation *			
Prior Years (RF 42105, 43092, 44106) .....	\$2,277,227.69		
1946 (RF 45108) .....	2,200,000.00	\$.....	\$2,152,771.28
1947 .....	.....	2,200,000.00	.....
Revolving Fund to provide working capital (RF 29093) .....	200,000.00	.....	.....
The Rockefeller Foundation Health Commission * (RF 42106, 43093, 44107) .....	1,265,501.84	.....	221,286.05
Schools and Institutes of Hygiene and Public Health			
Harvard University, Cambridge, Massachusetts			
General budget (RF 45109) .....	1,000,000.00	.....	100,000.00
Schools of Nursing			
University of Toronto, Canada			
Construction of new building (RF 45037) .....	300,000.00	.....	.....
Health Insurance Plan of Greater New York			
Development and operation of a medical insurance program (RF 46131) .....	....	250,000.00	100,000.00
<b>TOTAL — PUBLIC HEALTH...</b>	<b>\$7,242,729.53</b>	<b>\$2,450,000.00</b>	<b>\$2,574,057.33</b>

**MEDICAL SCIENCES**

**Psychiatry, Neurology and Allied Subjects**

American Psychiatric Association, New York City

Work of Committee on Psychiatric Nursing (RF 43013, 45005) .....

\$27,648.98     \$.....

\* A complete financial statement of the work of the International Health Division and The Rockefeller Foundation Health Commission for 1946 will be found on pages 311 to 327.

Catholic University of America, Washington, D. C.				
Teaching and research in psychiatry and child guidance (RF 44059).....	\$25,000.00	\$.....	\$9,000.00	
Child Research Council of Denver, Colorado				
Psychological studies and studies in child growth and development (RF 44060, 46086).....	8,940.00	27,560.00	15,510.00	
Columbia University, New York City				
Investigation of genetic factors in the incidence of nervous and mental diseases peculiar to old age (RF 45002).....	16,000.00	.....	6,000.00	
Dalhousie University, Halifax, Nova Scotia				
Development of teaching in psychiatry (RF 44058).....	10,701.24	.....	5,879.10	
Dikemark Mental Hospital, Asker, Norway				
Research on mental disease (RF 39044).....	8,802.16	.....	2,856.00	
Duke University, Durham, North Carolina				
Teaching and research in psychiatry and mental hygiene (RF 40005).....	38,664.55	.....	25,000.00	
Graduate Medical Education in psychiatry under the supervision of the Director, Neuropsychiatry Consultants Division of the Office of the Surgeon General of the Army Service Forces (RF 45073).....	.....	15,000.00	1,788.60	
Harvard Medical School, Boston, Massachusetts				
Teaching and research in psychiatry (RF 45033).....	85,000.00	.....	37,000.00	
Harvard University, Cambridge, Massachusetts				
Research in epilepsy at Harvard Medical School and Boston City Hospital (RF 42109).....	72,757.82	.....	16,855.92	
Studies at the Psychological Clinic (RF 40102).....	36,000.00	.....	.....	
Johns Hopkins University, Baltimore, Maryland				
Research and training in psychiatry (RF 43053).....	96,553.86	.....	37,819.39	
Karolinska Institute, Stockholm, Sweden				
Research in neurophysiology (RF 45003).....	35,434.75	.....	10,352.30	

**MEDICAL SCIENCES — *Continued*****Psychiatry, Neurology and Allied Subjects — *Continued***

	APPROPRIATIONS	1946	1946
	PRIOR YEARS	PAYMENTS	
London County Council, England			
Research in psychiatry at Maudsley Hospital (RF 38061) . . . . .	\$37,207.83	\$ . . . . .	\$ . . . . .
McGill University, Montreal, Canada			
Maintenance of Department of Psychiatry (RF 43046) . . . . .	105,488.91	. . . . .	27,134.34
Research in brain chemistry (RF 46069) . . . . .	. . . . .	50,000.00	4,532.58
Medical Research Council, London, England			
Research in endocrinology, psychiatry, neurology and allied subjects (RF 39002) . . . . .	12,545.98	. . . . .	. . . . .
National Institute of Cardiology, Mexico City			
Equipment of new research laboratories for physiology and pharmacology (RF 46072) . . . . .	. . . . .	18,000.00	2,235.29
New York University, New York City			
Teaching and research in Department of Psychiatry (RF 43078) . . . . .	40,000.00	. . . . .	8,838.53
Roscoe B. Jackson Memorial Laboratory, Bar Harbor, Maine			
Studies of genetic factors of intelligence and emotional variation in mammals (RF 45008) . . . . .	210,600.00	. . . . .	71,400.00
Tavistock Clinic, London, England			
Research and teaching in the field of psychiatry (RF 46013) . . . . .	. . . . .	89,100.00	44,398.76
Tufts College Medical School, Boston, Massachusetts			
Research in brain chemistry (RF 44098) . . . . .	35,000.00	. . . . .	6,999.82
University College, London, England			
Research in physiology (RF 45085) . . . . .	72,900.00	. . . . .	12,110.63
University of Brussels, Belgium			
Research in neurophysiology (RF 46015) . . . . .	. . . . .	15,000.00	5,348.07

University of Cambridge, England				
Research in neurophysiology (RF 46014).....	\$.....	\$60,750.00	\$12,108.76	
Psychological Laboratory				
Training and research (RF 46084).....	.....	44,550.00	4,435.90	
University of Chicago, Illinois				
Teaching and research in psychiatry (RF 44024).....	55,000.00	.....	37,500.00	
University of Cincinnati, Ohio				
Research in neurophysiology (RF 43004).....	100.15	.....	Cr. 400.02	
University of Edinburgh, Scotland				
Research in psychiatry, neurology and neurosurgery (RF 45113) .....	20,750.00	.....	20,685.78	
University of Illinois, Urbana				
Research in the biochemical aspects of schizophrenia (RF 45001).....	85,000.00	.....	.....	
University of London, England				
Galton Laboratory				
Research in problems of human heredity (RF 46085).....	.....	22,275.00	2,421.30	
University of Lund, Sweden				
Enlargement of research facilities in neurology (RF 39063).....	14,977.70	.....	.....	
University of Tennessee, Memphis				
Teaching and research in psychiatry (RF 42004).....	5,500.00	.....	5,000.00	
Neurophysiological research in the Department of Psychiatry (RF 45055).....	11,250.00	.....	11,250.00	
University of Zurich, Switzerland				
Research in nervous and mental diseases (RF 46016).....	.....	18,200.00	7,862.70	
Vanderbilt University School of Medicine, Nashville, Tennessee				
Support of a liaison service between psychiatry and surgery (RF 45004).....	9,000.00	.....	5,756.72	
Washington University, St. Louis, Missouri				
Support of Department of Neuropsychiatry (RF 44025).....	60,000.00	.....	39,196.03	
Research in neurophysiology (RF 38017).....	9,195.48	.....	Cr. 4,607.46	

		APPROPRIATIONS PRIOR YEARS	1946	1946 PAYMENTS
<b>MEDICAL SCIENCES — <i>Continued</i></b>				
<b>Psychiatry, Neurology and Allied Subjects — <i>Continued</i></b>				
Yale University, New Haven, Connecticut				
School of Medicine				
Development of psychiatry (RF 42108).....	\$123,925.59	\$.....	\$75,000.00	
Endocrinology				
Columbia University, New York City				
Research in endocrinology (RF 43012, 46026).....	20,560.45	30,000.00	7,825.62	
McGill University, Montreal, Canada				
Research in endocrinology (RF 41074, 46070).....	3,768.80	30,000.00	5,665.73	
Massachusetts General Hospital, Boston				
Research on endocrinology and metabolism (RF 43003, 46071).....	2,000.00	12,000.00	3,865.03	
National Research Council, Washington, D. C.				
Committee for Research in Problems of Sex (RF 44002, 46051, 46134).....	65,071.00	200,000.00	56,424.81	
University of California, Berkeley				
Research on hormones and vitamins (RF 44064).....	30,000.00	.....	13,750.00	
Medical Education				
American Film Center, Inc., New York City				
Developing the use of films in teaching medicine and public health (RF 44065)...	2,150.00	.....	2,150.00	
Association of Honorary Consultants of the Army Medical Library, Washington, D. C.				
General expenses (RF 45006).....	6,964.42	.....	3,964.42	
Bingham Associates Fund of Maine, Boston, Massachusetts				
Developing a program of postgraduate medical education in certain rural areas and towns in Massachusetts (RF 45073).....	250,000.00	.....	50,000.00	

Dalhousie University, Halifax, Nova Scotia			
Teaching facilities for medical students at new Victoria General Hospital (RF 42038).....	\$100,000.00	\$.....	\$50,000.00
Faculty of Medicine of the University of San Marcos, Peru			
Department of Pathology			
Equipment and supplies (RF 46087).....	.....	20,000.00	1,788.88
Graduate Medical Education, Eighth Service Command, Dallas, Texas			
For graduate medical education under the direction of the medical consultant of the Eighth Service Command in Army hospitals of that area (RF 45040)....	22,961.11	.....	591.40
Harvard University, Cambridge, Massachusetts			
Development of legal medicine (RF 43017, 44001).....	70,876.59	.....	7,624.15
Johns Hopkins University, Baltimore, Maryland			
Institute of History of Medicine (RF 38022).....	37,500.00	.....	15,000.00
Massachusetts General Hospital, Boston			
Preparation and distribution of case material for clinical-pathological conferences in various Army hospitals (RF 45030).....	2,375.00	.....	16.48
New York University, New York City			
Expenses of a traveling professorship (RF 46027).....	.....	11,750.00	8,230.24
Postwar appointments for medical graduates from armed services (RF 43103, 44135)	472,016.67	.....	147,427.39
Publication of French contributions to medicine during the war years (RF 46028) .....	.....	8,600.00	325.00
Royal Society of Medicine, London, England			
Expenses of a Central Medical Library Bureau (RF 45115).....	250,000.00	.....	75,086.11
University of Brussels, Belgium			
Teaching and research in social medicine (RF 45090).....	15,000.00	.....	9,467.14
University of Iceland, Reykjavik			
Scientific equipment for School of Medicine (RF 42039).....	989.33	.....	709.98
University of Manitoba, Winnipeg, Canada			
Development of teaching of preventive medicine (RF 40061).....	1,063.13	.....	.....

		APPROPRIATIONS PRIOR YEARS	1946	1946 PAYMENTS
<b>MEDICAL SCIENCES — <i>Continued</i></b>				
<b>Medical Education — <i>Continued</i></b>				
University of Michigan, Ann Arbor				
Expenses of an Institute for Teachers of Preventive Medicine (RF 46030).....	\$.....	\$10,000.00	\$10,000.00	
University of Utah, Salt Lake City				
School of Medicine				
Fluid research fund (RF 43102).....	5,000.00	.....	5,000.00	
University of Zagreb, Yugoslavia				
Teaching public health to medical students (RF 46088).....	.. ..	25,000.00	4,000.00	
Washington University, St. Louis, Missouri				
School of Medicine				
Maintenance (RF 38059).....	110,021.58	.....	38,554.51	
Teaching of preventive medicine (RF 44062).....	12,000.00	.....	5,262.65	
Group Medicine and Medical Economics				
Medical Administration Service, Inc., New York City				
General budget (RF 46031).....	.....	9,700.00	9,700.00	
National Health Council, Inc., New York City				
Study of voluntary agencies in the field of public health (RF 41089).....	22.78	.....	.....	
Program in the coordination of voluntary health agencies (RF 46017).....	.....	78,500.00	78,500.00	
University of Chicago, Illinois				
Research in industrial diseases (RF 43016).....	77,068.61	.....	Cr. 7,488.64	
University of Michigan School of Public Health, Ann Arbor				
Teaching of medical economics (RF 44061).....	16,256.93	.....	10,553.94	
General				
Institute of Biology and Experimental Medicine, Buenos Aires, Argentina				
Support of research (RF 44136).....	5,611.33	.....	3,492.79	

<b>Research Council of the Department of Hospitals, New York City</b>				
Research on chronic diseases (RF 44063, 45056).....	\$33,189.44	\$.....	\$21,824.70	
<b>University of Buenos Aires, Argentina</b>				
<b>Institute of Physiology</b>				
Research (RF 43054).....	25,000.00	.....	1,895.24	
<b>Fellowships and Grants in Aid</b>				
<b>Fellowships</b>				
Administered by The Rockefeller Foundation (RF 43118, 44084, 44139, 45119, 46102, 46135).....	133,568.98	175,000.00	59,111.66	
Medical Research Council of Great Britain, London, England (RF 45042, 46029)	20,000.00	50,000.00	2,804.49	
National Health and Medical Research Council, Department of Health, Canberra, Australia (RF 45074).....	15,000.00	.....	7,500.00	
National Research Council, Washington, D. C.				
Medical sciences (RF 42040, 46133).....	42,789.89	200,000.00	18,487.22	
Welch fellowships in internal medicine (RF 41028).....	135,072.00	.....	12,644.76	
Scholarships for British medical students (RF 42110, 43101).....	30,170.39	.....	8,979.23	
Grants in Aid (RF 42137, 43122, 44143, 45123, 46120, 46139).....	255,970.80	175,000.00	115,041.63	
<b>Special Emergency Grant in Aid Fund</b>				
For scientific equipment to medical science laboratories of universities and tech- nical schools in the Netherlands (RF 45089).....	40,000.00	.....	5,229.28	
<b>TOTAL — MEDICAL SCIENCES</b> .....	<b>\$3,679,984.23</b>	<b>\$1,395,985.00</b>	<b>\$1,448,179.76</b>	

## NATURAL SCIENCES

## Experimental Biology

Amherst College, Massachusetts

Research in genetics, experimental embryology and growth problems (RF 39104)

Research in biology (RF 46095) . . . . .

California Institute of Technology, Pasadena

Research on the structure of antibodies and the nature of immunological reactions  
(RF 45049) . . . . .

Support of combined programs in biology and chemistry (RF 46064) . . . . .

Carlsberg Foundation, Copenhagen, Denmark

Research in biochemistry (RF 46107) . . . . .

Catholic University of America, Washington, D. C.

Research on decomposition and synthesis (RF 40059) . . . . .

Columbia University, New York City

Research on electrical properties of cells and tissues (RF 41093) . . . . .

Research in enzyme chemistry (RF 42044, 45058) . . . . .

Research on problems of metabolism with the aid of chemical isotopes (RF 43926)

Research on vitamins and related substances in relation to plant growth (RF  
40107, 45086) . . . . .

Research on variation in genetic constitution in relation to growth and development (RF 44115) . . . . .

Research in immuno-chemistry (RF 46010) . . . . .

Researches in biochemistry (RF 46098) . . . . .

Connecticut Agricultural Experiment Station, New Haven

Research in genetics and growth in plants (RF 40106) . . . . .

APPROPRIATIONS	1946	PAYOUTS
PRIOR YEARS	1946	PAYOUTS

\$1.16	\$.....	\$.....
	39,000.00	3,500.00
9,500.00	.....	9,500.00
	50,000.00	25,000.00
27,500.00	.....	2,709.00
15,062.73	.....	.....
11,411.13	.....	.....
10,235.27	.....	7,307.26
7,250.00	.....	7,250.00
25,243.81	.....	6,000.00
52,500.00	.....	22,500.00
	25,000.00	9,000.00
	25,000.00	4,500.00
6,021.87	.....	2,775.00

Cornell University, Ithaca, New York				
Research in the field of enzyme chemistry (RF 42050).....	\$11,410.00	\$.....	\$1,000.00	
Research in protein chemistry (RF 45094).....	50,000.00	.....	7,800.00	
Duke University, Durham, North Carolina				
Research on physical chemistry of proteins (RF 43051, 46096).....	3,000.00	25,000.00	4,000.00	
Eidgenössische Technische Hochschule, Zurich, Switzerland				
Laboratory of Organic Chemistry				
Research on constitution and synthesis of physiologically active compounds (RF 44123, 45097, 46099).....	15,987.00	150,000.00	17,337.96	
Harvard University, Cambridge, Massachusetts				
Research on the chemical and electrical behavior of proteins (RF 38038).....	3,693.96	.....	.....	
Basic studies in chemotherapy (RF 45014).....	50,325.00	.....	19,218.08	
Research in the Medical School on the application of physical and chemical meth- ods to problems of tissue structure (RF 46019).....	.....	36,000.00	2,500.00	
Indiana University, Bloomington				
Research in cytogenetics (RF 40001, 45036).....	96,859.58	.....	26,000.00	
Institute of Andean Biology, Lima, Peru				
Studies on animal fertility in Sierra regions (RF 43045).....	500.00	.....	500.00	
Iowa State College, Ames				
Research in genetics (RF 43040, 46032).....	5,406.20	18,000.00	5,385.32	
Johns Hopkins University, Baltimore, Maryland				
Research in infrared spectroscopy (RF 45071).....	32,500.00	.....	12,500.00	
Karolinska Institute, Stockholm, Sweden				
Medical Nobel Institute				
Equipment for Departments of Biochemistry and Cell Research (RF 45068) ..	60,675.00	.....	22,615.73	
Research in biochemistry (RF 44121, 46116) .....	364.00	22,500.00	.....	
Massachusetts Institute of Technology, Cambridge				
Development of biological engineering (RF 40039).....	61,454.08	.....	14,577.71	
Research in the physical chemistry of protein solutions (RF 45107).....	85,000.00	.....	25,000.00	

**NATURAL SCIENCES — *Continued*****Experimental Biology — *Continued***

	PRIOR YEARS	1946	1946 PAYMENTS
Ministry of Public Health, Montevideo, Uruguay Construction and equipment of laboratory for the Research Institute of Biological Sciences (RF 43049).....	\$371.40	\$.....	\$.....
New York University, New York City Research in nutrition (RF 44127).....	11,250.00	.....	7,500.00
Princeton University, New Jersey Research in organic chemistry (RF 40058).....	26,466.72	.....	.....
Research Institute for Physics, Academy of Sciences, Stockholm, Sweden Toward cost of construction of a cyclotron (RF 45062).....	77,257.75	.....	71,612.25
Research with artificially (cyclotron) produced radioactive substances (RF 44120).....	258.45	.....	.....
Roscoe B. Jackson Memorial Laboratory, Bar Harbor, Maine Establishing and maintaining a Mammalian Stock Center (RF 43024).....	18,822.00	.....	7,250.00
Construction and equipment of animal quarters (RF 46062).....	.....	75,000.00	.....
Stanford University, Palo Alto, California Research in biochemistry (RF 45023, 45084).....	25,792.00	.....	12,500.00
University College, London, England Department of Biometry Research in genetics (RF 45063).....	24.30	.....	.....
University of California, Berkeley Construction and installation of cyclotron (RF 42001).....	355,308.42	.....	2,812.09
Research in immuno-chemistry (RF 46033).....	.....	22,000.00	13,000.00
Research in biochemistry (RF 46034).....	.....	15,000.00	5,000.00

University of Cambridge, England				
Institute of Biology and Parasitology				
Research in cellular physiology (RF 44124).....	\$13.95	\$.....	Cr. \$ 1.14	
University of Chicago, Illinois				
Research in molecular spectra (RF 41101).....	19,970.45	.....	7,500.00	
Research in application of spectroscopic methods to biological problems (RF 40021).....	20,470.25	.....		
University of Copenhagen, Denmark				
Research in biophysics (RF 45098).....	38,400.00	.....	32,250.00	
University of Illinois, Urbana				
Research in biochemistry of amino acids (RF 45059).....	15,000.00	.....	10,000.00	
University of Leeds, England				
Equipment and research on analysis of biological tissues by physical techniques (RF 45070).....	10,853.02	.....	9,073.96	
Research on X-ray analyses of biological tissues (RF 44029, 46108).....	19.20	10,000.00	4,980.69	
University of London, England				
Research on vitamins, sterols and related compounds (RF 38070).....	25,452.66	.....	4,238.75	
University of Minnesota, Minneapolis				
Research in biophysics (RF 41062).....	10,500.00	.....		
University of Oxford, England				
Dyson Perrins Laboratory of Organic Chemistry				
Research on hormone synthesis (RF 44090).....	6.50	.....		
X-ray analysis of biologically important large molecules (RF 44088).....	5.70	.....		
Sir William Dunn School of Pathology				
Biochemical investigation of penicillin (RF 44125).....	131.75	.....	84.59	
Research on antibiotics (RF 46021).....	.....	19,000.00	5,577.05	
University of Pennsylvania, Philadelphia				
Research in experimental biology (RF 43038).....	9,733.71	.....	7,395.11	
Research on permeability of the red blood cell (RF 44056).....	9,450.00	.....	2,653.02	

**NATURAL SCIENCES — *Continued*****Experimental Biology — *Continued***

		APPROPRIATIONS PRIOR YEARS	1946	1946 PAYMENTS
University of Rochester, New York	Research in genetics (RF 44031).....	\$3,520.00	\$.....	\$1,540.00
University of São Paulo, Brazil	Faculty of Philosophy			
	Equipment for research in the Department of Physics (RF 45061) .....	74,973.41	.....	8,104.86
University of Stockholm, Sweden	Research in chemical physiology and embryology (RF 44119).....	267.20	.....	.....
University of Texas, Austin	Research in genetics of drosophila (RF 46020).....	.....	30,000.00	5,760.10
University of Toronto, Canada	Research in nutrition (RF 42045, 44117).....	8,258.21	.....	2,266.29
University of Upsala, Sweden	Research on physical-chemical properties of proteins and other substances of biological and medical importance (RF 44118, 45096, 46129).....	6,357.50	50,000.00	5,384.55
	Research in biochemistry of fatty acids, lipoids and proteins (RF 44086).....	87.00	.....	.....
	Research on surface chemistry of the red blood cell and mechanism of gastric acid formation (RF 44122).....	170.75	.....	.....
University of Utrecht, Netherlands	Research in the biochemistry of growth substances (RF 46035).....	.....	15,600.00	11,362.50
	Research in biophysics and biochemistry (RF 46109).....	.....	23,040.00	18,028.80
University of Wisconsin, Madison	Research in biochemistry of symbiotic nitrogen fixation (RF 40071, 46118)....	2,641.39	22,500.00	.....
	Research in nutrition (RF 42046).....	2,667.29	.....	.....
	Research in physical chemistry (RF 45015).....	15,000.00	.....	6,000.00

<b>Washington University, St. Louis, Missouri</b>				
Research in carbohydrate metabolism (RF 45060).....	\$3,500.00	\$.....	\$3,500.00	
Expenses of increased use of its cyclotron (RF 42079).....	10,440.00	.....	10,440.00	
Research in general physiology and experimental embryology (RF 43039, 46097)	3,298.76	30,000.00	8,298.76	
<b>Yale University, New Haven, Connecticut</b>				
Research in enzyme chemistry (RF 45095).....	10,700.00	.....	4,200.00	
<b>Fellowships</b>				
Administered by The Rockefeller Foundation (RF 41114, 42134, 44085, 44140, 45080, 45120, 46110, 46136).....	140,752.55	145,000.00	79,544.70	
Brown University, Providence, Rhode Island				
Support of scholarships, assistantships and fellowships in advanced applied mathematics (RF 45031, 46063).....	10,000.00	50,000.00	3,958.89	
National Research Council, Washington, D. C. (RF 41112, 44112, 46008).....	465,780.00	250,000.00	285,093.45	
New York University, New York				
Development of graduate work in applied mathematics (RF 46009).....	.....	60,000.00	6,000.00	
<b>General</b>				
Agricultural Program in Mexico				
General expenses (RF 44113, 45105, 46126).....	205,408.41	225,000.00	150,873.27	
Construction and equipment of experimental laboratory (RF 44070, 44114).....	45,000.00	.....	22,990.17	
Support of special program of improvement of the Mexican subsidations for agri- cultural research and demonstration (RF 45106).....	50,000.00	.....	12,570.49	
Cost of providing greenhouse facilities (RF 46127).....	.....	25,000.00	.....	
American Institute of Physics, New York City				
Expenses of its War Policy Committee (RF 45072).....	23,150.00	.....	13,000.00	
American Mathematical Society, New York City				
Expenses of International Congress of Mathematicians (RF 37108).....	5,000.00	.....	.....	
American-Soviet Science Society, New York City				
Support of general activities (RF 46100).....	.....	25,000.00	.....	

**NATURAL SCIENCES — *Continued*****General — *Continued***

		<b>APPROPRIATIONS</b>	<b>1946</b>	
		<b>PRIOR YEARS</b>	<b>1946</b>	<b>PAYMENTS</b>
California Institute of Technology, Pasadena		\$.....	\$250,000.00	\$.....
Completion of the 200-inch telescope project (RF 46128).....				
Centre National de la Recherche Scientifique, Paris, France				
Special equipment for natural science research laboratories of France (RF 46048)		.....	250,000.00	14,472.54
Travel of non-French delegates to conferences of scientists (RF 46049).....		.....	100,000.00	2,161.15
China Medical Board, Inc., New York City				
Peiping Union Medical College, China				
Human paleontological research in Asia (RF 36137, 41102, 45024).....	39,994.11	.....	3,233.31	
Grants in Aid (RF 42138, 44144, 45081, 45124, 46106, 46140).....	254,003.37	170,000.00	153,680.35	
Massachusetts Institute of Technology, Cambridge				
Study of electronic computation (RF 46061).....	.....	100,000.00	25,000.00	
National Academy of Sciences, Washington, D. C.				
Expenses of delegates to the international scientific meetings organized in 1946 under the joint auspices of the National Academy of Sciences and the American Philosophical Society (RF 46050).....	.....	50,000.00	25,000.00	
National Research Council, Washington, D. C.				
American Geophysical Union				
General expenses (RF 44053).....	10,500.00	.....	7,000.00	
Royal Society, London, England				
Emergency grant for English scientific journals (RF 44126).....	39.50	.....	.....	
Social Science Research Council, New York City				
Joint Social Science Research Council — National Research Council Committee on the Measurement of Opinion, Attitudes, and Consumer Wants				
Study of the reliability of various methods of sampling (RF 45117).....	21,900.00	.....	6,750.00	

**Special Emergency Grant in Aid Fund**

For scientific equipment to natural science laboratories of universities and technical schools in the Netherlands (RF 45089).....	\$40,000.00	\$.....	\$.....
Swarthmore College, Pennsylvania Toward support of an enlarged program of research in astronomy (RF 46101). . University of Iceland, Reykjavik	.....	50,000.00	50,000.00
University of Leiden, Netherlands Toward the cost of building and equipping an Institute of Experimental Pathology (RF 45048).....	148,235.22	.....	2,103.31
Purchase and endowment of a photographic telescope for the Union Observatory, Johannesburg, Union of South Africa (RF 34100).....	6,575.61	.....	.....
University of Oslo, Norway Toward the postwar reconstruction of research facilities in natural sciences (RF 46117).....	.....	30,000.00	.....
University of São Paulo, Brazil Research in physics (RF 42090).....	1,462.09	.....	282.84
Yale University, New Haven, Connecticut Laboratories of Primate Biology Maintenance (RF 42037).....	46,785.04	.....	30,000.00
<b>TOTAL — NATURAL SCIENCES.....</b>	<b>\$2,946,426.43</b>	<b>\$2,510,140.00</b>	<b>\$1,440,502.76</b>

**SOCIAL SCIENCES**

Association of Land-Grant Colleges and Universities Committee on Postwar Agricultural Policy and Planning General expenses (RF 44052).....	\$1,100.00	\$.....	Cr. \$1,856.57
Brookings Institution, Inc., Washington, D. C. General program (RF 45043).....	37,500.00	.....	37,500.00
Research in international relations (RF 46079),.....	.....	75,000.00	37,500.00

**SOCIAL SCIENCES — *Continued***

	<b>APPROPRIATIONS</b>	<b>1946</b>	<b>1946</b>
	<b>PRIOR YEARS</b>	<b>1946</b>	<b>PAYMENTS</b>
Canadian Institute of International Affairs, Toronto, Canada General budget (RF 44047, 46036).....	\$4,204.81	\$42,500.00	\$6,788.68
Canadian Social Science Research Council, Montreal, Canada Stimulation of social science research in Canada (RF 44078, 46074).....	6,463.40	20,000.00	4,512.20
Expenses of a study of the Alberta Social Credit Experiment (RF 44079).....	16,110.97	.....	13,697.03
Centre d'Études de Politique Étrangère, Paris Toward its general budget (RF 46075).....	.....	53,100.00	9,970.44
Christian Michelsen Institute, Norway Development of research and popular education in international relations in Norway (RF 46076).....	.....	16,500.00	6,075.15
College of William and Mary, Williamsburg, Virginia Study of the impact of war on the Hampton Roads area (RF 45013).....	21,000.00	.....	9,587.47
Columbia University, New York City Exploratory study in the field of group relations and group tensions (RF 45087).. History of American economic thought (RF 45047).....	10,900.00 4,300.00	.....	10,900.00 4,300.00
School of International Affairs Development of the Russian Institute (RF 45034)..... Study of Russian foreign policy with special reference to the Far East (RF 45088) Study of economic aspects of public finance (RF 42031)..... Study of the theory of public utility rates (RF 43034).....	250,000.00 14,500.00 5,137.30 20,650.00	.....	25,000.00 ..... 4,387.19 .....
Cornell University, Ithaca, New York Study of civil liberties in wartime (RF 44049)..... Study of the change in public opinion in the United States resulting from the Cross-roads experiment with the atomic bomb (RF 46043).....	7,500.00 .....	.....	6,000.00 23,875.00
			23,875.00

Council on Foreign Relations, New York City			
History of the foreign relations of the United States during World War II (RF 46002).....	\$.....	\$139,000.00	\$34,750.00
War and peace studies and general research program (RF 46077).....	.....	60,000.00	30,000.00
Dutch Economic Institute, Netherlands			
General budget (RF 46057).....	.....	12,000.00	3,790.30
Escola Livre de Sociologia e Política de São Paulo, Brazil			
Research and training in the social sciences (RF 43081).....	5,000.00	.....	5,000.00
Fellowships			
Administered by The Rockefeller Foundation (RF 38115, 39114, 43120, 45121, 46103, 46137).....	97,217.89	125,000.00	20,887.21
Social Science Research Council, New York City (RF 42078, 44021, 45065, 45118, 46053).....	382,600.87	100,000.00	179,884.01
Foreign Policy Association, New York City			
Research program (RF 45116).....	200,000.00	.....	50,000.00
Geneva Graduate Institute of International Studies, Switzerland			
Maintenance (RF 46078).....	.....	70,000.00	.....
Grants in Aid			
Regular program (RF 43059, 43124, 44145, 45125, 46105, 46113, 46141).....	205,648.48	225,000.00	164,449.20
Special fund for travel, studies and conferences, relating to problems arising from the release of atomic energy (RF 45093).....	25,000.00	.....	483.79
Harvard University, Cambridge, Massachusetts			
Research in social sciences (RF 35086).....	29,149.66	.....	17,777.01
Harvard University and Radcliffe College, Cambridge, Massachusetts			
Research in field of international relations (LS 993).....	18.45	.....	.....

**SOCIAL SCIENCES — *Continued***

		<b>APPROPRIATIONS</b>	<b>1946</b>	<b>PAYMENTS</b>
		<b>PRIOR YEARS</b>	<b>1946</b>	
Institute for Advanced Study, Princeton, New Jersey				
Study of the Law of International Civil Aviation (RF 45046).....		\$32,000.00	\$.....	\$ 8,000.00
Study on the theory of value-formation in society (RF 46083).....		.....	14,000.00	3,500.00
Institute of Economic and Social Research, Paris				
For general expenses (RF 46007).....		.....	12,750.00	12,675.30
Institute of Economics and History, Copenhagen, Denmark				
Toward general budget, and printing of manuscripts now ready for publication (RF 46060).....		.....	35,400.00	15,712.80
Institute of International Affairs, Stockholm, Sweden				
General budget (RF 45012).....	479.75	.....	.....	.....
Research and popular education in international problems (RF 46059).....	.....	33,750.00	11,639.55	
Institute of Pacific Relations				
American Council, New York City				
General expenses (RF 46044).....		.....	60,000.00	15,000.00
Pacific Council, Honolulu, Hawaii				
General expenses and research (RF 46045).....		.....	173,000.00	41,000.00
Johns Hopkins University, Baltimore, Maryland				
Experiment in research training in the social sciences (RF 46055).....		.....	21,000.00	.....
Study of the government of American trade unions (RF 44048).....	41,114.63	.....	.....	18,750.00
League of Nations, Princeton, New Jersey				
Economic, Financial, and Transit Department				
Research programs (RF 45078).....		60,000.00	.....	51,827.16
London School of Economics and Political Science, University of London, England				
Library development (RF 31030).....	9,391.70	.....	.....	.....
Purchase of land for expansion of school plant (RF 31028).....	8,509.95	.....	.....	.....

Massachusetts Institute of Technology, Cambridge				
Development of the teaching of international relations for engineers (RF 45082) . . . . .	\$12,500.00	\$.....	\$5,000.00	
Miami University, Oxford, Ohio				
Studies of population redistribution (RF 46080) . . . . .	.....	82,500.00	5,287.50	
Study by the Scripps Foundation for Research in Population Problems of the influence of population factors upon labor market problems (RF 44110) . . . . .	3,476.00	.....		
Nankai University, China				
Institute of Economics				
General expenses (RF 46005) . . . . .	.....	25,000.00	6,250.00	
National Bureau of Economic Research, New York City				
Support of general programs and special programs of research in finance and fiscal policy (RF 44020) . . . . .	440,000.00	.....	110,000.00	
National Institute of Economic and Social Research of Great Britain, London				
General budget (RF 43082, 44108) . . . . .	121,634.10	.....	24,204.35	
National Institute of Public Affairs, Washington, D. C.				
Training of personnel for the federal services (RF 43055) . . . . .	61,250.00	.....	35,000.00	
Northwestern University, Evanston, Illinois				
Historical studies of experiments in European finance (RF 45079) . . . . .	10,000.00	.....	10,000.00	
Princeton University, New Jersey				
Industrial Relations Section				
Research (RF 44046) . . . . .	11,250.00	.....	7,500.00	
Office of Population Research of the School of Public and International Affairs (RF 44109) . . . . .	190,000.00	.....	20,000.00	
Royal Institute of International Affairs, London, England (Chatham House)				
History of the war and of the peace settlement (RF 45045) . . . . .	129,297.93	.....	22,703.91	
Preparation of a history of the League of Nations (RF 46122) . . . . .	.....	17,500.00	4,112.50	
Research program (RF 45044) . . . . .	119,784.80	.....	24,217.50	

	PRIOR YEARS	APPROPRIATIONS 1946	1946 PAYMENTS
<b>SOCIAL SCIENCES—Continued</b>			
Social Science Research Council, New York City			
Administrative budget (RF 43058).....	\$75,000.00	\$.....	\$30,000.00
Conferences and planning (RF 44077).....	187,500.00	.....	37,500.00
General research projects (RF 31126).....	78,472.84	.....	16,472.30
Grants in aid of research (RF 41077, 46054).....	25,150.00	75,000.00	23,800.00
Joint Social Science Research Council-National Research Council			
Committee on the Measurement of Opinion, Attitudes, and Consumer Wants			
Study of the reliability of various methods of sampling (RF 45117).....	21,900.00	.....	6,750.00
Purchase of social science publications and their distribution to certain European libraries (RF 46046).....	.....	55,000.00	38,000.00
Research in economic history of the United States, the islands and nearby territory (RF 40116).....	198,750.00	.....	16,250.00
Spelman Fund of New York, New York City			
Work in public administration (RF 38049).....	150,000.00	.....	150,000.00
Stanford University, Palo Alto, California			
Food Research Institute			
International history of food and agriculture during World War II (RF 46041)...	.....	300,000.00	30,000.00
Research program (RF 43056).....	15,000.00	.....	.....
State Historical Society of Colorado, Denver			
Study of the western range cattle industry (1865-1895) (RF 44003).....	40,200.00	.....	15,800.00
Tufts College, Medford, Massachusetts			
Experimental program in the psychiatric approach to training and research in sociology (RF 45019).....	25,000.00	.....	10,000.00

United Nations Information Office, New York City				
Reproducing the documentation of the Preparatory Commission and of the sessions of the First General Assembly of the United Nations organization (RF 46006)...	\$.....	\$16,177.00	\$16,177.00	
University of Alabama, Tuscaloosa				
Bureau of Public Administration				
Study of the electoral process in the South (RF 46003).....	.....	40,000.00	20,000.00	
University of California, Berkeley				
Bureau of Business and Economic Research				
Toward its research program (RF 46111).....	.....	50,000.00	15,000.00	
Bureau of Public Administration				
Study of effects of Japanese migration and resettlement in California (RF 45018)	5,000.00	.....	.....	
University of Cambridge, England				
Department of Applied Economics				
General budget (RF 46001).....	.....	95,175.00	4,033.90	
University of Chicago, Illinois				
History of Sears, Roebuck and Company, with emphasis on its implications to American society and economy (RF 46004).....	.....	36,000.00	18,000.00	
Research in the Division of the Social Sciences (RF 45064).....	125,000.00	.....	50,000.00	
Studies of costs of commercial atomic energy (RF 46042).....	.....	30,000.00	.....	
University of Denver, Colorado				
Bureau of Business and Social Research				
General budget (RF 45027).....	7,500.00	.....	.....	
University of Glasgow, Scotland				
Development of research and training in the social sciences (RF 45026).....	46,786.15	.....	4,234.28	
University of Manchester, England				
Economics Research Section				
Research program (RF 46112).....	.....	68,850.00	4,033.75	

	PRIOR YEARS	1946	1946 PAYMENTS
SOCIAL SCIENCES -- <i>Continued</i>			
University of Minnesota, Minneapolis			
Program of training for public service (RF 40035) . . . . .	\$6,082.00	\$.....	Cr. \$127.48
Research in the field of intergovernmental relations (RF 46052) . . . . .		72,700.00	6,150.00
University of Oslo, Norway			
Institute of Economics			
Research program (RF 46058) . . . . .		30,000.00	10,000.00
University of Oxford, England			
Nuffield College			
Additional research faculty in the social sciences (RF 46132) .		162,000.00*	.....
Social Studies Research Committee (RF 45017) . . . . .	26,127.65	.....	15,590.01
University of Pennsylvania, Philadelphia			
Wharton School of Finance and Commerce			
Industrial Research Department. General budget (RF 44111)	140,000.00	.....	35,000.00
Study of war experience in labor relations (RF 46025) . . . . .		10,000.00	10,000.00
Exploratory program of research in distribution (RF 44050) .	22,500.00	.....	15,000.00
Study of comparative economic development (RF 44051) . . . . .	4,500.00	.....	4,500.00
University of Southern California, Los Angeles			
School of Government			
Development of program (RF 40124) . . . . .	6,000.00	.....	4,000.00
University of Virginia, Charlottesville			
Bureau of Public Administration			
General budget (RF 46082) . . . . .		53,600.00	14,300.00
University of Wisconsin, Madison			
Program of research in housing (RF 46081) . . . . .		58,500.00	..

## Yale University, New Haven, Connecticut

## Institute of International Studies

Research program (RF 44022)..... \$87,500.00 \$..... \$25,000.00

## Labor and Management Center

Study of labor market structure and wage determination (RF 46056)..... ..... 43,800.00 7,042.50

TOTAL — SOCIAL SCIENCES..... \$3,888,659.33 \$2,633,677.00 \$1,810,144.94

## HUMANITIES

## Studies in Language and Foreign Culture

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

Activities of the Joint Committee on Latin American Studies and Handbook of Latin American Studies (RF 44072)..... \$5,000.00 \$..... \$5,000.00

Cataloguing American collections of Chinese and Japanese books (RF 37120)..... 9,464.61 ..... .....

Committee on Far Eastern Studies (RF 41029)..... 5,408.15 ..... 4,104.87

Developing personnel and resources in teaching modern languages (RF 43008)..... 9,838.27 ..... 9,838.27

Preparing materials for Slavic studies in the United States (RF 43099)..... 14,605.25 ..... 10,000.00

Toward completing a revised and enlarged edition of Redhouse's English and Turkish Lexicon (RF 45075)..... 16,700.00 ..... 10,000.00

## Brown University, Providence, Rhode Island

Increasing collections of material on early American history and Hispanic culture (RF 40069)..... 12,651.04 ..... .....

## Colegio de Mexico, Mexico City

Expenses of Center for Historical Research (RF 44134)..... 38,857.50 ..... 10,597.50

## Colorado School of Mines, Golden

Recording and reproducing equipment for language instruction (RF 45021)..... 2,500.00 ..... .....

## Connecticut College, New London

Program of instruction in the German language and culture (RF 44014)..... 300.00 ..... 300.00

**HUMANITIES — *Continued*****Studies in Language and Foreign Culture — *Continued***

Cornell University, Ithaca, New York

Development of a Division of Modern Languages (RF 45091).....	\$125,000.00	\$.....	\$30,000.00
	18,000.00	.....	3,362.29

Slavic studies (RF 43097).....

Purchase of books and other documentation in field of Latin American studies (RF 40049).....	5,500.00	.....	.....
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**Grants in Aid**

Special fund for temporary addition of representative Chinese scholars to teaching staffs and projects in United States (RF 44044).....	41,700.00	.....	17,380.88
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Harvard University, Cambridge, Massachusetts

Development of Slavic studies (RF 43098).....	10,956.67	.....	6,724.50
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**School of Education**

Training of teachers in English (RF 44075).....	12,500.00	.....	5,000.00
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**Institute of Pacific Relations**

American Council, New York City

English translations of source materials on Chinese history (RF 45054, 46093)	11,000.00	25,000.00	23,500.00
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Ministry of Public Education, Guatemala

Expenses of an expert to aid in development of National Archaeological Museum (RF 46012).....	.....	9,000.00	6,000.00
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National Institute of Anthropology and History, Mexico City

Development of its program (RF 40130).....	2,205.36	.....	.....
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Development of teaching and research program and reorganization of library resources (RF 43083).....	29,577.50	.....	11,782.67
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National University of Mexico, Mexico City				
Aid to individual research projects in Center of Philosophical Studies and support of library (RF 44073).....	\$5,875.00	\$.....	\$3,375.00	
Oberlin College, Ohio				
Development of Far Eastern studies (RF 43036).....	2,000.00	.....	2,000.00	
Pan American Union, Washington, D. C.				
Expenses of preparing for use its resources of Latin American newspapers and art material (RF 43084).....	5,703.71	.....	4,753.71	
Pomona College, Claremont, California				
Development of Far Eastern and Slavic studies (RF 44131).....	32,300.00	.....	5,000.00	
Princeton University, New Jersey				
Development of Near Eastern Studies (RF 46066).....	.....	42,500.00	4,250.00	
Stanford University, Palo Alto, California				
Development of Far Eastern and Slavic studies (RF 44130).....	67,500.00	.....	10,500.00	
Development of teaching and research in the areas and languages of the Pacific, Eastern Asia and Russia (RF 45009).....	45,000.00	.....	10,000.00	
Hoover Institute for Slavonic Studies				
General expenses (RF 46092).....	.....	200,000.00	15,000.00	
Tsing Hua University, Kunming, China				
Development of its program of teaching in humanities (RF 44076).....	10,271.05	.....	8,750.97	
Tulane University, New Orleans, Louisiana				
Purchase of books and other documentation in field of Latin American studies (RF 40051).....	3,600.00	.....	3,600.00	
University of California, Berkeley				
Development of Slavic and Far Eastern studies (RF 44129).....	75,000.00	.....	15,000.00	
University of Chicago, Illinois				
Analysis and evaluation of methods of teaching modern languages (RF 44100)...	43,700.00	.....	29,851.16	
Development of Chinese studies (RF 41098).....	3,447.04	.....	3,447.04	301

**HUMANITIES — *Continued***

		APPROPRIATIONS PRIOR YEARS	1946	1946 PAYMENTS
<b>Studies in Language and Foreign Culture — <i>Continued</i></b>				
University of Colorado, Denver				
Development of Far Eastern studies (RF 44042).....	\$14,000.00	\$.....	\$4,000.00	
University of Leiden, Netherlands				
Chinese Institute				
Training of personnel and purchase of books (RF 46023).....	.....	20,000.00	6,696.81	
University of New Mexico, Albuquerque				
Materials for Latin American studies (RF 42073).....	5,000.00	.....	5,000.00	
University of Stockholm (Stockholms Högskola), Sweden				
Development of Far Eastern studies in Sweden, Norway and Denmark (RF 46068)	.....	12,200.00	3,600.00	
University of Washington, Seattle				
Development of Far Eastern and Slavic studies (RF 44128).....	69,525.00	.....	10,078.52	
Purchase of materials for Far Eastern and Slavic studies (RF 45111).....	50,000.00	.....	.....	
Yale University, New Haven, Connecticut				
Support of Far Eastern studies (RF 45110).....	100,500.00	.....	11,437.50	
<b>North American Studies</b>				
Colonial Williamsburg, Inc., Williamsburg, Virginia				
Compiling an index to the <i>Virginia Gazette</i> for the years 1736 to 1780 (RF 42028)	1,081.17	.....	1,081.17	
Cornell University, Ithaca, New York				
Studies of the York State region (RF 42074).....	882.08	.....	882.08	
Duke University, Durham, North Carolina				
Expenses of preparing for publication materials in the Brown folklore collection (RF 44101).....	5,300.00	.....	5,300.00	
Henry E. Huntington Library and Art Gallery, San Marino, California				
Regional studies of the Southwest (RF 43096).....	30,000.00	.....	5,410.96	

Library of Congress, Washington, D. C.			
American studies (RF 43095).....	\$57,000.00	\$.....	\$3,000.00
Michigan State College, East Lansing			
Studies of American and Canadian culture (RF 44041).....	3,700.00	.....	3,700.00
Newberry Library, Chicago, Illinois			
Studies in Midwestern culture (RF 44034).....	8,999.10	.....	2,000.00
Northwestern University, Evanston, Illinois			
Teaching and field studies in American culture (RF 46067).....	.....	25,000.00	5,000.00
Princeton University, New Jersey			
Study of program in American civilization (RF 44080, 45092).....	35,122.20	.....	15,094.30
State University of Iowa, Iowa City			
Studies in literary criticism (RF 45076).....	4,000.00	.....	4,000.00
Texas State Historical Association, Austin			
Southwestern history study (RF 42130, 46119).....	2,500.00	18,000.00	5,500.00
University of Alberta, Edmonton, Canada			
Expenses of organizing and utilizing a collection of materials on the life and traditions of the Province of Alberta (RF 44015).....	3,972.99	.....	.....
University of Chicago, Illinois			
Development of a central archive of source materials relating to the early history of the upper Mississippi Valley and Canada (RF 43069).....	3,265.00	.....	3,199.82
University of Minnesota, Minneapolis			
Studies in Northwestern history (RF 43030).....	10,000.00	.....	10,000.00
University of Montana, Missoula			
Studies of the life and traditions of Montana (RF 44016).....	9,000.00	.....	6,500.00
University of New Brunswick, Fredericton, Canada			
Studies of the history of New Brunswick (RF 44040).....	1,564.66	.....	.....
University of Oklahoma, Norman			
Preparation of materials on the history and life of the Southwest (RF 44093)....	15,000.00	.....	5,000.00

		APPROPRIATIONS PRIOR YEARS	1946	1946 PAYMENTS
<b>HUMANITIES — <i>Continued</i></b>				
<b>North American Studies — <i>Continued</i></b>				
University of Saskatchewan, Saskatoon, Canada				
Studies in Western history (RF 43037).....	\$7,569.90	\$.....		\$3,289.29
University of Utah, Salt Lake City				
Collection and use of historical source materials (RF 45022).....	8,000.00	.....		5,000.00
University of Virginia, Charlottesville				
Preparation of a biography of Thomas Jefferson (RF 44033).....	14,000.00	.....		10,196.15
University of Wisconsin, Madison				
Program in research and teaching in the materials of American civilization (RF 46011).....	.....	75,000.00		25,000.00
Washington University, St. Louis, Missouri				
Studies in the history of Western migrations in the United States (RF 45011) ..	3,517.00	.....		2,183.00
Libraries				
American Library Association, Chicago, Illinois				
Canadian Library Council				
Establishing microphotographic and general advisory services for Canadian libraries (RF 42025).....	6,000.00	.....		6,000.00
Development of a library school in São Paulo, Brazil (RF 43006).....	12,000.00	.....		4,235.82
For work of its Board on International Relations (RF 44133).....	48,000.00	.....		22,588.27
Interchanges of library personnel and materials by its International Relations Board (RF 45029, 46022).....	15,000.00	30,000.00		25,000.00
Selection and purchase for libraries in war areas of reference books published during the years 1939-1946 (RF 45038).....	60,000.00	.....		30,000.00
American Library in Paris, Inc., France				
General budget (RF 40042).....	13,541.66	.....		

Association of Special Libraries and Information Bureaux, London, England				
Preparation of a catalogue of periodicals in British libraries (RF 44004).....	\$42,765.92	\$.....		\$4,036.25
Boone Library School, Chungking, China				
General support (RF 44035).....	10,000.00	.....		5,000.00
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).....	78,311.36	.....		420.03
Massachusetts Institute of Technology, Cambridge				
For work of the Cooperative Committee on Library Building Plans (RF 46037) .....	.....	8,500.00	6,000.00	
National Central Library, London, England				
General operations (RF 45010) .....	76.02	.....		
Princeton University, New Jersey				
Index of Christian Art (RF 38100).....	4,000.00	.....		4,000.00
University of Buenos Aires, Argentina				
Expenses of establishing a bibliographical center and an institute of library prac- tice (RF 42128).....	7,879.79	.....		7,706.26
University of Oxford, England				
Development of the Bodleian and other University libraries (RF 31121).....	479,303.66	.....		8,884.29
University Research Fund, São Paulo, Brazil				
Bibliographical information service (RF 45035).....	30,250.76	.....		7,378.00
Woodrow Wilson Foundation, New York City				
Cataloging of a collection of documents of the League of Nations (RF 46094) .....	.....	21,000.00	5,250.00	
Drama, Film and Radio				
American Film Center, Inc., New York City				
General Budget (RF 44092).....	50,000.00	.....		20,250.00
National Theatre Conference, Cleveland, Ohio				
Support of activities and projects (RF 45028).....	155,000.00	.....		40,000.00

	APPROPRIATIONS PRIOR YEARS	1946	1946 PAYMENTS
<b>HUMANITIES — <i>Continued</i></b>			
<b>Drama, Film and Radio — <i>Continued</i></b>			
Play House Foundation, Cleveland, Ohio			
Construction and rehabilitation of the Play House (RF 45083).....	\$25,000.00	\$.....	\$.....
Smith College, Northampton, Massachusetts			
Program in drama (RF 42055).....	1,564.93	.....	.....
University of Nanking, Chengtu, China			
Department of Educational Cinematography			
General support (RF 44043).....	7,125.66	.....	4,625.66
University of Saskatchewan, Saskatoon, Canada			
Work in drama (44017).....	5,350.61	.....	4,415.95
Other Subjects			
American Council of Learned Societies, Washington, D. C.			
Committee on the Protection of Cultural Treasures in War Areas (RF 44081)....	4,800.00	.....	3,000.00
General support (RF 41029, 43100, 44071, 46089).....	42,618.79	250,000.00	64,346.41
Microfilming projects (RF 41083).....	34,514.06	.....	34,514.06
Pacific Coast Committee			
Activities in the humanities (RF 46091).....	.....	35,000.00	3,500.00
Study of the influence of art museums in American life (RF 44094).....	4,000.00	.....	4,000.00
American School of Classical Studies, Athens, Greece			
Museum to house objects excavated in the Agora (RF 37089).....	138,354.94	.....	.....
Humanities Research Council of Canada, Hamilton, Ontario			
Survey of the humanities in Canada and general support of Council (RF 44095)	3,487.80	.....	3,487.80
National Buildings Record, London, England			
Documentation of architectural records (RF 43033).....	26.80	.....	.....
Special microfilming projects in England in connection with the program of the American Council of Learned Societies (RF 43064).....	4,973.35	.....	2,655.32

<b>Stanford University, Palo Alto, California</b>			
School of Humanities			
Development of program (RF 42058).....	\$6,000.00	\$.....	\$6,000.00
University of Birmingham, England			
Awards in literature and for administration expenses (RF 45112).....	56,000.00	.....	17,000.00
University of Oslo, Norway			
Development of work in the humanities (RF 46047).....	.....	33,000.00	8,141.69
Fellowships and Grants in Aid			
Fellowships			
Administered by The Rockefeller Foundation (RF 44083, 44142, 45122, 46104, 46138).....	84,167.24	125,000.00	49,456.95
American Council of Learned Societies, Washington, D. C.			
Fellowships in the humanities (RF 46090).....	.....	150,000.00	.....
Special fellowship fund for postwar development of personnel in the United States (RF 44132, 45052, 46038).....	193,909.77	50,000.00	69,888.33
Grants in Aid (RF 41095, 42141, 43032, 43125, 44146, 45126, 46121, 46142).....	220,616.19	175,000.00	125,248.96
<b>TOTAL — HUMANITIES.....</b>	<b>\$2,974,299.56</b>	<b>\$1,304,200.00</b>	<b>\$1,028,298.51</b>

**PROGRAM IN CHINA**

<b>Associated Boards for Christian Colleges in China</b>			
Restoration and rehabilitation of foreign universities and colleges in China (RF 46065).....	.....	\$500,000.00	\$500,000.00
<b>Fellowships</b>			
Foreign and local (RF 40044, 42041, 44038).....	23,110.95	.....	4,103.16
Grants in Aid (RF 42041, 44038).....	18,035.21	.....	3,691.36
University of Nanking, Chengtu, Szechwan			
Department of Agricultural Economics (RF 45067) .....	4,000.00	.....	4,000.00

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**PROGRAM IN CHINA — *Continued***

	PRIOR YEARS	1946	1946 PAYMENTS
Yenching University, Chengtu, Szechwan	\$4,000.00	\$ .....	\$4,000.00
College of Public Affairs			
General budget (RF 45066).....			
<b>TOTAL — PROGRAM IN CHINA</b> .....	<b>\$49,146 16</b>	<b>\$500,000 00</b>	<b>\$515,794.52</b>

**MISCELLANEOUS**

American Library Association, Chicago, Illinois			
Committee on Aid to Libraries in War Areas			
Purchase of microfilming of American scholarly journals for institutions, chiefly in Europe and Asia (RF 45114, 46018).....	\$50,000.00	\$19,000.00	\$69,000.00
Committee for Rehabilitation of Polish Science and Culture, Inc., New York City			
Providing printed materials for libraries of Poland (RF 46024).....	.. ..	50,000.00	30,000.00
Exchange Fund (RF 46123).....	.. ..	25,000.00	.....
Expenses of a commission to study the problems of the development of medicine and public health in China (RF 46040).....	.. ..	15,000 00	9,499.30
Fund for miscellaneous expenses in connection with the United Nations organization (RF 46039).....	.. ..	5,000.00	333.92
General Education Board			
Support (RF 46125).....	.. ..	7,500,000.00	.....
<b>TOTAL — MISCELLANEOUS</b> .....	<b>\$50,000.00</b>	<b>\$7,614,000.00</b>	<b>\$108,833.22</b>

**ADMINISTRATION AND SCIENTIFIC SERVICES****Scientific Services**

Prior Years.....	\$27,932.37	\$.....	\$14,379.80
1946.....	637,744.80	36,312.53	643,600.04
1947.....	.....	725,340.00	.....
<b>General Administration</b>			
Prior years.....	16,212.55	.....	4,857.46
1946.....	261,224.20	14,817.47	252,556.58
1947.....	.....	272,648.00	.....
<b>TOTAL — ADMINISTRATION</b> .....	<b>\$943,113.92</b>	<b>\$1,049,118.00</b>	<b>\$915,393.88</b>
	<b>\$21,774,359.16</b>		

**LESS****Unused balances of Appropriations allowed to lapse**

The Rockefeller Foundation.....	\$461,972.75		
International Health Division.....	200,404.17	662,376.92	.....
<b>GRAND TOTALS</b> .....	<b>\$21,111,982.24</b>	<b>\$19,457,120.00</b>	<b>\$9,841,204.92</b>
			37

## REFUNDS ON PRIOR YEAR CLOSED APPROPRIATIONS

American Library Association, Chicago, Illinois.....	(RF 44138)	\$1,103.98
British Medical Students — Scholarships.....	(RF 42005)	20.00
Columbia University, New York City.....	(RF 30091)	4.22
Cornell University, Ithaca, New York.....	(RF 42010)	1,091.15
Encyclopaedia of the Social Sciences, New York City.....	(RF 32114)	1,215.84
Fellowships of the China Medical Board, New York City.....	(CM 2387)	100.00
Fellowships — Medical Sciences 1939.....	(RF 38113)	40.00
Grants in Aid — Natural Sciences 1936.....	(RF 36079)	302.92
International Institute of Intellectual Cooperation, Paris, France.....	(RF 37118)	7,500.00
League of Nations, Princeton, New Jersey.....	(RF 44023)	6,827.16
Library of Congress, Washington, D. C.....	(RF 42057)	70.26
National Health Council, Inc., New York City.....	(RF 45007)	2,596.83
National Institute of Health, China.....	(IH 40060)	120.00
National Research Council, Washington, D. C.....	(RF 32010)	157.95
Princeton University, Princeton, New Jersey.....	(RF 42062)	68.99
Stanford University, Palo Alto, California.....	(RF 44116)	233.07
University of Edinburgh, Scotland.....	(RF 44097)	3,173.55
University of Minnesota, Minneapolis.....	(RF 42051)	3.50
University of Rochester, New York.....	(RF 44028)	12,760.86
Washington University, St. Louis, Missouri.....	(RF 44030)	46.40
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		\$37,436.68
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## INTERNATIONAL HEALTH DIVISION

DESIGNATIONS DURING 1946, UNPAID BALANCES AS AT DECEMBER 31, 1945  
OR PRIOR YEAR DESIGNATIONS, AND PAYMENTS THEREON DURING 1946

	PRIOR DESIGNATIONS	1946 DESIGNATIONS	1946 PAYMENTS
<b>CONTROL AND INVESTIGATION OF SPECIFIC DISEASES AND DEFICIENCIES</b>			
Diphtheria			
United States			
Johns Hopkins University, Baltimore, Maryland. School of Hygiene and Public Health			
1944-1948 (IH 43010, 46002).....	\$1,619.53	\$14,400.00	\$8,782.52
Infective Hepatitis			
Near East			
Hebrew University, Jerusalem, Palestine			
1944-1945 (IH 43025).....	3,880.20	.....	3,880.20
Malaria			
Caribbean Area			
Trinidad and Tobago			
1945-1946 (IH 44019).....	16,757.08	.....	12,482.70
Europe, Africa and Near East			
Egypt			
1944-1945 (IH 44013).....	1,297.97	.....	707.55
Far East			
China			
1944-1947 (IH 43058, 44020, 46028).....	17,634.05	28,000.00	7,171.72
Mexico			
1943-1946 (IH 42058, 45050).....	10,967.56	.....	5,711.44

CONTROL AND INVESTIGATION OF SPECIFIC DISEASES AND DEFICIENCIES — *Continued*Malaria — *Continued*

## South America

## British Guiana

1945-1946 (IH 44018, 45024) . . .

PRIOR DESIGNATIONS	1946 DESIGNATIONS	1946 PAYMENTS
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\$1,768 55      \$4,300.00      \$4,057 57

## Colombia

1946 (IH 46011) . . .

5,600.00 . . .

## Peru

1945-1947 (IH 44059, 45055)

11,881 77      16,500.00      5,829 12

## Venezuela

1946-1947 (IH 46021) . . .

25,000.00      108 40

## United States

## Florida

1944-1946 (IH 43027, 44017, 45023) . .

17,951 52      20,220 00      19,063.37

## University of Chicago, Illinois

1944-1946 (IH 43051) . . . . .

3,896 93      1,896.53

## Mental Hygiene

## Johns Hopkins University, Baltimore, Maryland. School of Hygiene and Public Health

1945-1950 (IH 45006, 45047, 46029)

3,900 00      71,505 00      21,501.99

## Nutrition

## Canada

## University of Toronto, Ontario

1944-1947 (IH 43019) . . . . .

8,763 94      7,234 88

<b>Far East</b>				
All-India Institute of Hygiene, Calcutta				
1945-1946 (IH 44024).....	\$4,455.00	\$.....	\$2,798.72	
<b>Mexico</b>				
1944-1946 (IH 43020, 44057).....	9,399.04	.....	4,715.56	
<b>United States</b>				
North Carolina				
1943-1947 (IH 43012, 44001, 44021, 44023, 45025).....	27,422.11	12,055.00	6,027.50	
Tennessee (In cooperation with Vanderbilt University, Nashville)				
1942-1947 (IH 43002).....	29,526.00	.....	27,361.71	
<b>Rabies</b>				
United States				
Alabama				
1945 (IH 44025).....	16,968.38	.....	7,674.42	
<b>Respiratory Diseases</b>				
Influenza				
United States				
California				
1944-1947 (IH 43024, 43030, 44008, 44054, 45027).....	20,551.14	10,000.00	20,364.10	
University of Michigan, Ann Arbor				
1944-1946 (IH 43016).....	3,500.00	.....	3,500.00	
<b>Respiratory Virus Research</b>				
South America				
Argentina				
1945-1946 (IH 45007).....	4,458.39	.....	2,946.96	

PRIORITY DESIGNATIONS	1946 DESIGNATIONS	1946 PAYMENTS
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**CONTROL AND INVESTIGATION OF SPECIFIC DISEASES AND DEFICIENCIES — *Continued***

<b>Syphilis</b>			
United States			
Johns Hopkins University, Baltimore, Maryland. School of Hygiene and Public Health			
1941-1949 (IH 40067-68, 45048-49).....	\$94,674.40	\$10,857.00	\$35,866.79
North Carolina			
1945-47 (IH 44027, 45028).....	7,000.00	7,000.00	3,500.00
<b>Tuberculosis</b>			
United States			
Tennessee			
1945-1947 (IH 44028).....	21,943.50	.....	12,679.50
<b>Typhus Fever</b>			
Far East			
China			
1944-1947 (IH 43022, 44029, 45029).....	11,956.51	8,000.00	7,191.08
Mexico — louse control studies			
1945 (IH 44056).....	3,123.92	.....	2,540.57
United States			
Florida			
1946-1947 (IH 46008).....	.....	6,200.00	6,200.00
<b>Yellow Fever</b>			
Africa			
Central and East Africa			
1945-1946 (IH 44034, 45034).....	29,035.24	38,300.00	30,657.80
West Africa			
1945-1946 (IH 44035, 45035).....	19,820.91	41,000.00	20,099.96

<b>Caribbean Area</b>				
<b>Panama</b>				
1944-1947 (IH 43035, 45031).....	\$1,654.42	\$2,200.00	\$498.81	
<b>South America</b>				
<b>    Brazil</b>				
1945-1946 (IH 44032, 45033).....	21,795.15	75,000.00	76,546.07	
<b>    British Guiana</b>				
1945-1946 (IH 44030, 45030).....	1,444.93	3,870.00	2,806.67	
<b>    Colombia</b>				
Control and investigation				
1945-1946 (IH 44031, 45032).....	13,302.01	56,400.00	27,917.87	
Laboratory construction and equipment				
1946-1947 (IH 44038).....	10,977.15	.....	3,396.92	
<b>    Ecuador</b>				
1945-1946 (IH 44033).....	19,200.00	.....	11,112.89	
<b>    Peru</b>				
1943-1947 (IH 42038, 45056-57).....	33,051.26	19,800.00	14,922.03	
<b>Other Studies</b>				
<b>    Control of Insect Vectors with DDT</b>				
<b>        Mexico</b>				
1946 (IH 45051).....	.....	8,800.00	3,229.89	
<b>        Gastrointestinal Diseases Inquiry</b>				
<b>            All-India Institute of Hygiene, Calcutta</b>				
1946-1947 (IH 45037).....	.....	4,650.00	.....	
<b>        Rodent Ecology and Control</b>				
<b>            Johns Hopkins University, Baltimore, Maryland. School of Hygiene and Public Health</b>				
1945-1948 (IH 45005).....	59,717.96	.....	39,435.13	

	PRIOR DESIGNATIONS	1946 DESIGNATIONS	1946 PAYMENTS
<b>CONTROL AND INVESTIGATION OF SPECIFIC DISEASES AND DEFICIENCIES — <i>Continued</i></b>			
Other Studies — <i>Continued</i>			
Rural Water Standards Study			
All-India Institute of Hygiene, Calcutta			
1945-1946 (IH 44036, 45036) . . . . .	\$6,080 00	\$2,325 00	\$5,349 99
Statistical analyses of records of certain specific diseases			
1940-1945 (IH 39047) . . . . .	434 00	...	
Taxonomic Center			
Johns Hopkins University, Baltimore, Maryland			
Department of Parasitology			
1946-1947 (IH 46018) . . . . .	...	5,000 00	2,300 00
<b>LABORATORIES OF THE INTERNATIONAL HEALTH DIVISION</b>			
Maintenance			
1945-1946 (IH 45017, 45038) . . . . .	60,312 63	135,000 00	151,990 76
Moving and installation expenses			
1946-1947 (IH 45018, 45039) . . . . .	125,000 00	75,000 00	34,438 59
<b>STATE AND LOCAL HEALTH SERVICES</b>			
State Health Services			
Canada			
Manitoba			
Division of Industrial Hygiene			
1944-1947 (IH 43017, 44038, 46004) . . . . .	5,045 76	3,250 00	2,767 70
Division of Local Health Services			
1942-1946 (IH 42002) . . . . .	2,542 37	...	1,253 95
Division of Maternal and Child Hygiene and Nutrition			
1946-1949 (IH 46019) . . . . .	...	12,000 00	....

New Brunswick					
Division of Nutrition					
1945-1947 (IH 43003)	.....	\$11,250.00	\$.....	\$.....	
Prince Edward Island					
Provincial Laboratory					
1944-1948 (IH 38035)	.....	15,300.00	.....	.....	
Quebec					
Division of Health Education					
1943-1945 (IH 42056)	.....	2,330.40	.....	.....	
Caribbean Area					
Dominican Republic					
General Health Survey					
1947-1949 (IH 46020)	.....	13,406.00	.....	.....	
Public Health Laboratory					
1946-1948 (IH 45053)	.....	34,000.00	4,153.70	.....	
Leeward and Windward Islands					
Public Health Engineering Unit					
1945-1948 (IH 44006, 44040, 45042)	.....	4,521.85	11,320.00	6,091.78	
Europe					
Norway					
Statistical Division					
1947-1949 (IH 46027)	.....	6,225.00	.....	.....	
Far East					
China					
Szechwan Provincial Health Administration					
1945 (IH 44041)	.....	1,906.97	.....	1,905.32	

	PRIOR DESIGNATIONS	1946 DESIGNATIONS	1946 PAYMENTS
<b>STATE AND LOCAL HEALTH SERVICES — <i>Continued</i></b>			
<b>State Health Services — <i>Continued</i></b>			
Mexico			
Office of Special Sanitary Service (Cooperative Central Office)			
1945-1946 (IH 44039, 45041).....	\$976.64	\$2,920.00	\$2,909.27
South America			
Bolivia			
Division of Endemic Diseases			
1943-1947 (IH 42043).....	87,705.45	.....	17,745.31
Chile			
Tuberculosis Survey			
1945-1948 (IH 45009).....	51,723.32	.....	7,459.57
Ecuador			
National Institute of Hygiene			
General Support			
1941-1946 (IH 41025, 43006).....	8,004.03	.....	1,813.22
Peru			
National Institute of Hygiene			
General Support			
1945-1949 (IH 44015).....	158,619.11	.....	29,645.32
Division of Study and Development of State Health Services			
1946-1950 (IH 45054).....	.....	18,480.00	586.41
Survey and study of state and local health services			
1944-1945 (IH 44005, 44060).....	379.90	.....	.....

<b>United States</b>				
<b>California</b>				
Virus Laboratory — research and diagnosis				
1944-1947 (IH 43039, 44053, 44055, 45040).....	\$42,500.00	\$32,000.00	\$56,648.79	
<b>Mississippi</b>				
Coordinated School-Health-Nutrition Service				
1944-1948 (IH 43011, 46003).....	11,546.11	23,000.00	10,648.56	
<b>New York City</b>				
Department of Health Statistical Service				
1945-1949 (IH 44014).....	28,800.00	.....	3,593.50	
<b>North Carolina</b>				
Public Health Education and School Health Service				
1944-1947 (IH 43014).....	21,534.40	.....	9,188.10	
<b>Local Health Departments</b>				
<b>Canada</b>				
British Columbia				
1936-1947 (IH 36021, 38024).....	15,270.18	.....	.....	
Manitoba				
1944-1947 (IH 44003).....	9,458.89	.....	4,487.97	
Nova Scotia				
1943-1947 (IH 41077, 42055).....	32,596.21	.....	12,512.37	
<b>Caribbean Area</b>				
El Salvador				
1943-1944 (IH 42062).....	1,985.30	.....	257.31	
<b>Europe</b>				
<b>Finland</b>				
1940-1945 (IH 40012, 40079).....	18,748.85	.....	.....	

**STATE AND LOCAL HEALTH SERVICES — *Continued*****Local Health Departments — *Continued*****Far East**

India — Bengal  
1945-1946 (IH 44046)..... . . . . . \$6,080.00 \$..... \$899 12

**Mexico**

1936-1947 (IH 40026, 43052, 44042-3)..... . . . . . 50,664.73 ..... 10,786.72

**South America**

Bolivia  
1945-1949 (IH 44044)..... . . . . . 45,000.00 ..... 9,447.01

Brazil  
1945-1946 (IH 45008, 46006)..... . . . . . 2,716 67 9,000.00 6,001 65

Chile  
1942-1947 (IH 42013-14)..... . . . . . 29,025.40 ..... 6,121 28

Peru  
1945-1949 (IH 44045, 46030)..... . . . . . 53,996.37 112,200.00 32,124.21

**MEDICAL CARE**

American Public Health Association, Washington, D. C.  
1946-1947 (IH 45059)..... . . . . . 20,000.00 20,000 00

Group Health Cooperative, Inc., New York City  
1946-1947 (IH 46009)..... . . . . . 22,700.00 20,035 00

Study of medical care programs in the United Kingdom and Europe  
1946 (IH 46010)..... . . . . . 2,500.00 13.75

**PUBLIC HEALTH EDUCATION****Schools and Institutes of Hygiene and Public Health****Canada**

University of Toronto, Ontario  
1940-1949 (IH 42053, 43018, 46005)..... . . . . . 28,582.66 21,000 00 13,740 43

Europe				
Turkey				
School of Hygiene, Ankara 1940 (IH 39059).....	\$1,680.61	\$.....	\$.....	
Far East				
China				
National Institute of Health 1944-1946 (IH 43043, 44047, 45043).....	20,539.45	25,000.00	36,123.78	
India				
All-India Institute of Hygiene, Calcutta 1944-1945 (IH 46012).....	.....	2,248.98	2,248.98	
Philippine Islands				
Institute of Hygiene, Manila 1941-1944 (IH 41026).....	10,000.00	.....	.....	
South America				
Chile				
School of Public Health, Santiago 1944-1948 (IH 43055).....	48,030.27	.....	12,674.11	
United States				
Harvard University, Cambridge, Massachusetts				
School of Public Health				
Department of Nutrition 1942-1946 (IH 41070).....	37,565.95	.....	18,143.54	
Department of Sanitary Engineering 1944-1947 (IH 43009).....	9,643.67	.....	5,823.54	

**PUBLIC HEALTH EDUCATION — *Continued*****Schools and Institutes of Hygiene and Public Health — *Continued*****United States — *Continued***

Johns Hopkins University, Baltimore, Maryland

School of Hygiene and Public Health

Developmental Aid

1944-1949 (IH 43049)..... \$120,025.22 \$..... \$25,408.34

Field Training and Study Area

1944-1949 (IH 43050)..... 50,251.14 ..... 24,420.70

**Schools of Nursing****Europe**

Portugal

Escola Técnica de Enfermeiras, Lisbon

1945-1947 (IH 44016)..... 5,000.02 ..... 1,750.00

**Far East**

Ceylon and India

Developmental aid to nursing education

1946 (IH 45058)..... ..... 4,000.00 981.03

**South America**

Brazil

University of São Paulo

1941-1945 (IH 41084)..... 13,556.15 ..... 7,331.16

Colombia

National Superior School of Nursing, Bogotá

1943-1947 (IH 42061)..... 44,774.56 ..... 6,510.75

<b>Ecuador</b>				
School of Nursing, Quito 1943-1947 (IH 42065).....	\$9,509.60	\$.....	\$3,836.44	
<b>Uruguay</b>				
University Nursing School, Montevideo 1945-1947 (IH 44061).....	5,700.00	.....	.....	
<b>Venezuela</b>				
National School of Nursing, Caracas 1942-1949 (IH 41023, 46022).....	2,235.34	23,520.00	1,425.59	
<b>Fellowships, Travel of Government Health Officials and Teachers of Public Health, and Training of Health Workers</b>				
1941-1946 (IH 41021, 42048, 43045, 44048, 45044).....	158,147.79	200,000.00	210,291.17	
<b>Other Training</b>				
<b>Caribbean Area</b>				
British West Indies Training Station, Jamaica 1945-1948 (IH 44050).....	23,006.59	.....	4,007.68	
<b>Mexico</b>				
Training Station, Tacuba 1945-1947 (IH 44049, 44006).....	4,280.79	.....	1,784.91	
Training of health personnel in the states 1943-1948 (IH 43052, 45052).....	4,200.98	17,600.00	4,347.11	
<b>FIELD SERVICE</b>				
<b>Field Staff</b>				
1944-1946 (IH 43046, 44051, 45045)				
Salaries.....	42,512.70	472,000.00	459,408.51	
Commutation.....	11,674.24	63,000.00	54,304.50	
Travel.....	53,046.67	196,000.00	192,877.05	
Medical examinations.....	192.92	1,000.00	830.94	

PRIOR DESIGNATIONS	1946 DESIGNATIONS	1946 PAYMENTS
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324

**FIELD SERVICE — *Continued*****Field Staff — *Continued*****1944-1946 (IH 43046, 44051, 45045) — *Continued***

Field equipment and supplies.....	\$1,858.86	\$3,000.00	\$1,573.89
Pamphlets and charts.....	6,678.76	9,000.00	10,324.29
Express, freight and exchange .....	797.83	1,000.00	881.34
Insurance and retirement.....	24,967.42	56,000.00	47,840.98
Bonding.....	40.00	1,000.00	853.33

**Field Offices****1944-1946 (IH 43047, 44052, 45019, 45046)**

Africa and Asia Minor (Cairo).....	10,000.00	.....	.....
Canada.....	3,647.23	4,500.00	3,985.48
Caribbean (Central Office, Havana).....	1,660.23	8,825.00	8,658.85
Dominican Republic (Ciudad Trujillo).....	.....	3,500.00	2,652.48
Far East (Central Office, Shanghai).....	3,630.99	10,220.00	6,906.55
Mexico.....	683.22	1,500.00	1,650.97
South America			
Argentina (Buenos Aires).....	1,530.85	11,500.00	11,234.76
Bolivia (Cochabamba).....	5,690.20	4,000.00	4,167.78
Brazil (Rio de Janeiro).....	2,030.62	10,000.00	4,462.27
Chile (Santiago).....	1,624.88	6,000.00	4,419.92
Peru (Lima).....	1,865.87	10,400.00	8,819.29
Miscellaneous.....	.....	400.00	.....
Director's Fund for Budget Revisions (IH 41027, 44006).....	7,151.93	.....	.....
Director's Fund for Miscellaneous Expenses (IH 43001, 46007, 46031).....	537.98	3,500.00	473.69
Exchange Fund (IH 33077).....	21,521.44	.....	.....

**TOTAL — INTERNATIONAL HEALTH DIVISION****\$2,277,227.69 \$2,199,696.98\* \$2,152,771.28**

\* The Foundation appropriated \$2,200,000 for the work of the International Health Division during 1946, the undesignated balance of \$303.02 being allowed to lapse as of December 31, 1946.

THE ROCKEFELLER FOUNDATION HEALTH COMMISSION  
DESIGNATIONS DURING 1946, UNPAID BALANCES AS AT DECEMBER 31, 1945  
OF PRIOR YEAR DESIGNATIONS, AND PAYMENTS THEREON DURING 1946

	PRIOR DESIGNATIONS	1946* DESIGNATIONS	1946 PAYMENTS	TREASURER'S REPORT
<b>STUDY AND CONTROL WORK</b>				
Commission on Tropical Diseases of the Board for Investigation and Control of Influenza in the Army (C-3).....	\$9,986.00	\$.....	Cr. \$14.00	
Egypt — Government Gambiac Eradication Service 1946-1947 (HC 46059).....		5,000.00	.....	
Europe — Study and control of typhus, malaria and other diseases 1942-1947 (C-14, C-27, HC 45020).....	76,003.89	.....	8,965.16	
Louse Control Studies in Mexico 1943-1944 (C-25, C-13).....	2,740.82	.....	.....	
Oxford Nutrition Survey in England 1945-1946 (HC 45003).....	26.09	.....	.....	
Peru — Malaria Drug Study 1945-1946 (HC 45004).....	13,178.61	.....	7,924.02	
United States Navy — Study of Infective Hepatitis 1942-1945 (C-21).....	11,126.62	.....	3,320.61	
Yellow Fever Vaccine 1945-1947 (HC 45016).....	32,940.16	.....	12,205.78	
<b>STATE AND LOCAL HEALTH SERVICES</b>				
Norway — Ministry of Health 1946-1951 (HC 46015)..... <i>Munning</i>		15,000.00	1,500.00	✓ 325

\* Designations for which funds were previously authorized.

	PRIOR DESIGNATIONS	1946 DESIGNATIONS	1946 PAYMENTS
<b>STATE AND LOCAL HEALTH SERVICES — <i>Continued</i></b>			
Norway — Ministry of Social Welfare			
1946-1951 (HC 46014).....	\$.....	\$25,000.00	\$2,500.00
Peking First Health Station			
1946 (HC 46017).....	.....	15,000.00	.....
<b>PUBLIC HEALTH EDUCATION</b>			
All-Union Institute of Experimental Medicine and All-Union Institute of Epidemiology, Russia			
1944-1945 (C-29).....	718.95	.....	716.19
Fellowships, Travel and Training Grants			
1945-1947 (HC 45013, 46001, 46058).....	91,166.44	300,000.00	118,219.00
Institute of Hygiene, Zagreb, Yugoslavia			
1946-1949 (HC 46016).....	.....	46,000.00	.....
Journals for European Institutes of Public Health			
(HC 45010, 45012).....	19,353.98	.....	7,851.67
London School of Hygiene and Tropical Medicine			
1945-1950 (HC 45002).....	100,000.00	.....	8,137.76
Ministry of Public Health, France. Centre de Recherches de l'Hôpital Foch, Paris			
1945-1946 (HC 45011).....	12,300.00	.....	5,082.08
Norway State Institute of Public Health			
1946 (HC 45022).....	8,000.00	.....	.....
Pasteur Institute, Dakar, West Africa			
1945 (HC 45015).....	409.41	.....	185.49
Poland — Institute and School of Hygiene, Warsaw			
1946-1947 (HC 46025).....	.....	53,000.00	2,750.00
Purchase of Microfilm Readers for Public Health Institutions in Europe			
1946-1947 (HC 46024).....	.....	2,500.00	.....

School of Nursing, Zagreb, Yugoslavia 1946-1947 (HC 46026).....	\$.....	\$52,000.00	\$32,000.00
State Institute of Public Health, Utrecht, Netherlands 1946-1947 (HC 46013).....	.....	10,000.00	3,675.30
<b>FIELD SERVICE</b>			
Staff Salaries and Travel			
1944 (C 23, 28).....	32,897.84	.....	Cr. 49.50
1945 (C 30).....	15,864.65	.....	353.42
1946 (HC 45021).....	2,700.00	.....	2,283.87
Offices in Paris and London			
1944 (C 22).....	940.17	.....	.....
1945 (C 31, HC 45014).....	2,497.31	.....	2,027.68
1946 (HC 46023).....	.....	5,270.00	1,651.52
Fund for Commitment by Director and Comptroller (C 11).....	9,718.35	.....	.....
	442,569.29		
Unexpended balances of designations allowed to lapse.....	87,841.82	.....	.....
<b>TOTAL — THE ROCKEFELLER FOUNDATION HEALTH COMMISSION</b>	<b>\$354,727.47</b>	<b>\$528,770.00</b>	<b>\$221,286.05</b>

**SUMMARY**

<b>Designations:</b>	
Prior Year.....	\$354,727.47
1946.....	528,770.00
Available for designation in 1947.....	382,004.37
	<b>\$1,265,501.84</b>

## TRANSACTIONS RELATING TO INVESTED FUNDS

## PURCHASED

\$110,000	American Telephone & Telegraph Co. 15 Year Conv. Deb. 2½s/61 @ par and the surrender of 6,600 Rights which were received on account of the ownership of American Telephone & Telegraph Co. Capital Stock and valued at the closing price as of the date of record @ \$1.88 each, or \$12,408.00, or a total cost of the Debentures of 111.28 . . . . .	\$122,408 00
8,499,000	Standard Oil Co. (New Jersey) 25 Year Deb. 2-3/8s/71 @ 98 . . . . .	8,329,020.00
4,000,000	USA Treasury Bonds 2½s/56-58 @ 106.9375 . . . . .	4,277,500.00
2,200,000	USA Treasury Certificates of Indebtedness, Ser. B dated Feb. 1, 1946, 7/8s/47 @ 100.037 . . . . .	2,200,809 51
2,300,000	USA Treasury Certificates of Indebtedness, Ser. C dated March 1, 1946, 7/8s/47 @ 100.0412. . . . .	2,300,947.60
2,000,000	USA Treasury Certificates of Indebtedness, Ser. D dated April 1, 1946, 7/8s/47 @ 100.054. . . . .	2,001,084 30
19,400	Shares International Nickel Co. of Canada, Ltd. Common Stock (No par) @ \$30.427 per share . . . . .	590,278.67
2,000	Shares Philadelphia Electric Co. 3.80% Preferred Stock @ \$102.70 per share . . . . .	205,400.00

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\$20,027,448 08

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## RECEIVED THROUGH EXCHANGE

\$3,000,000	USA Treasury Certificates of Indebtedness, Ser. A dated Jan. 1, 1946, 7/8s/47, received in exchange for \$3,000,000 USA Treasury .90% Notes, Ser. C due Jan. 1, 1946. . . . .	\$3,000,000 00
1,180,000	USA Treasury Certificates of Indebtedness, Ser. D dated April 1, 1946, 7/8s/47, received in exchange for \$1,180,000 USA Treasury Certificates of Indebtedness, Ser. C dated April 1, 1945, 7/8s/46 . . . . .	1,180,000 00

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\$4,180,000 00

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## RIGHTS AND STOCK DIVIDEND RECEIVED

75 American Telephone & Telegraph Co. Rights @ \$1.88 each (The Foundation received a total of 6,675 Rights on account of the ownership of 6,675 shares American Telephone & Telegraph Co. Capital Stock, of which 6,600 Rights were surrendered upon purchase of \$110,000 par value American Telephone & Telegraph Co. 15 Year Conv. Deb. 2 3/4s/61, and the value (\$12,408.00) was added to the cost of the Debentures (see above)).....	\$141.00
6,782.40 Shares The Standard Oil Co. of Ohio Common Stock (Par \$10) received as a stock dividend of 2% on account of the ownership of 339,120 shares of said stock of record November 29, 1946. These shares were taken into the books at no value, thereby reducing the ledger price per share of the total number of shares owned.....	
	\$141.00
	<hr/>
<b>BEQUEST UNDER WILL OF WILLIAM F. HENDRY</b>	
85,000 City of New York Corporate Stock 4 1/4s/60 @ 133.....	\$6,650.00
3,000 Western Maryland R.R. 1st Mtg. 4s/52 @ 110.....	3,300.00
50 Shares General Motors Corp. Common Stock (Par \$10) @ \$75.50 per share.....	3,775.00
50 Shares Pillsbury Mills, Inc., Common Stock (Par \$25) @ \$32.00 per share.....	1,600.00
12 Shares R. J. Reynolds Tobacco Co., Class B Common Stock (Par \$10) @ \$44.00 per share.....	528.00
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	\$15,853.00*
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\* In addition, cash was received under Request of William F. Hendry amounting to \$8,180.35.

TRANSACTIONS RELATING TO INVESTED FUNDS — *Continued*

## BEQUEST UNDER WILL OF ROBERT MARSH, JR.

\$30,000	Anglo-Chilean Nitrate Corp. S.F. Income Deb. 4½s/67 @ 87.5.....	\$26,250.00
£5,000	Compania Salitrera Anglo Chilean, Inc. 1st Mtg. Deb. 4½s (£5,000 @ \$4.00 or \$20,000 @ 101).....	20,200.00
\$20,000	Copenhagen (Denmark), City of, External 5s/52 @ 82.....	16,400.00
20,000	German Government International Loan of June 1, 1930 5½s/65 @ no value.....	.....
20,000	Tokyo Electric Light Co., Ltd. 1st Mtg. Dollar Series 6s/53 @ no value.....	.....
10,000	Western Union Telegraph Co. 5s/60 @ 107.5.....	10,750.00
600	Shares American Telephone & Telegraph Co. Capital Stock @ \$162.375 per share.....	97,425.00
1,000	Shares El Paso Natural Gas Co. Common Stock (Par \$3) @ \$35.75 per share.....	35,750.00
2,000	Shares Kennecott Copper Corp. Capital Stock (No par) @ \$38.00 per share.....	76,000.00
4,000	Shares Potash Company of America Common Stock (Par \$5) @ \$23.50 per share.....	94,000.00
100	Shares Union Pacific R.R. Co. Common Stock (Par \$100) @ \$123.625 per share.....	12,362.50

\$389,137.50\*

## ADDITIONS TO LEDGER VALUE

## Interest increment on USA Savings Bonds, Ser. F (12 year appreciation bonds):

\$67,500	(Maturity value) due May 1, 1953.....	\$1,552.50
67,500	(Maturity value) due Jan. 1, 1954.....	1,282.50
67,500	(Maturity value) due July 1, 1954.....	1,080.00
135,000	(Maturity value) due Jan. 1, 1955.....	1,755.00

		\$5,670.00
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		\$24,618,249.58
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\* In addition, cash was received under Bequest of Robert Marsh, Jr., amounting to \$71,809.40.

		TOTAL PROCEEDS	LEDGER VALUE
<b>SOLD:</b>			
55,000	City of New York Corporate Stock 4 1/4s/60 @ 132.861.....	\$6,643.07	\$6,650.00
3,000	Western Maryland R.R. 1st Mtg. 4s/52 @ 108.047.....	3,241.42	3,300.00
75	American Telephone & Telegraph Co. Rights @ \$1.6832 each.....	126.24	141.00
250	Shares Eureka Pipe Line Co. Capital Stock (Par \$10) @ \$33.22 per share.....	8,305.09	11,250.00
50	Shares General Motors Corp. Common Stock (Par \$10) @ \$73.642 per share.....	3,682.12	3,775.00
10,425	Shares International Harvester Co. 7% Cum. Preferred Stock @ \$195.89 per share.....	2,042,176.32	1,198,875.00
126,481	Shares National Transit Co. Capital Stock (Par \$12.50) @ \$9.836 per share.....	1,244,071.27	1,606,308.70
50	Shares Pillsbury Mills, Inc. Common Stock (Par \$25) @ \$32.736 per share.....	1,636.80	1,600.00
12	Shares R. J. Reynolds Tobacco Co., Class B Common Stock (Par \$10) @ \$43.53 per share.....	522.38	528.00
100	Shares Southern Pipe Line Co. Capital Stock (Par \$10) @ \$13.68 per share.....	1,368.00	625.00
40	Shares South West Pennsylvania Pipe Lines Capital Stock (Par \$10) @ \$38.98 per share	1,559.19	1,371.18
		<hr/> <u>\$3,313,331.90</u>	<hr/> <u>\$2,834,423.88</u>
<b>REDEEMED</b>			
\$15,000,000	Standard Oil Co. (New Jersey) 25 Year Debentures 3s/61 @ 101.....	\$15,150,000.00	\$14,700,000.00
820,000	USA Treasury Certificates of Indebtedness, Ser. C dated April 1, 1945, 7/8s/46 @ par	820,000.00	820,000.00
2,250,000	USA Treasury Certificates of Indebtedness, Ser. D dated May 1, 1945, 7/8s/46 @ par	2,250,000.00	2,250,000.00
		<hr/> <u>\$18,220,000.00</u>	<hr/> <u>\$17,770,000.00</u>

TRANSACTIONS RELATING TO INVESTED FUNDS — *Continued*

## SURRENDERED THROUGH EXCHANGE

		TOTAL PROCEEDS	LEDGER VALUE
\$1,180,000	USA Treasury Certificates of Indebtedness, Ser. C dated April 1, 1945, 7/8s/46, exchanged for \$1,180,000 USA Treasury Certificates of Indebtedness, Ser. D dated April 1, 1946, 7/8s/47.....	\$1,180,000.00	\$1,180,000.00
3,000,000	USA Treasury .90% Notes, Ser. C dated January 1, 1946, exchanged for \$3,000,000 USA Treasury Certificates of Indebtedness, Ser. A dated January 1, 1946, 7/8s/47.. .	3,000,000.00	3,000,000.00
		<hr/>	<hr/>
		\$4,180,000.00	\$4,180,000.00

## LEDGER VALUE REDUCED

As of November 8, 1946, there was issued to the stockholders of record of the American Telephone & Telegraph Co. Warrants representing the same number of subscription Rights as there were shares registered in the name of the stockholder. The Foundation owned 6,675 shares of the said stock and received 6,675 Rights which were valued at \$1.88 each, this being the closing price on the record date, November 8, 1946. The ledger value of the Capital Stock was reduced by the value of the 6,675 Rights received, or \$12,549.00; 6,600 Rights were surrendered upon subscription to \$110,000 par value American Telephone & Telegraph Co. 15 Year Debentures 2½s/61 and the remaining 75 rights were sold.....

		\$12,549.00	\$12,549.00
		<hr/>	<hr/>

**LEDGER VALUE LIQUIDATED**

220 Shares Chehalis & Pacific Land Co. Capital Stock (Par \$10) — final liquidating dividend (\$1,543.43) received July 16, 1946, at which time the nominal ledger value of \$1.00 was written off the books.....

\$.....	\$1.00
<u>\$25,725,880.90</u>	<u>\$24,796,973.88</u>

Amount by which the proceeds of securities sold, redeemed, etc., during the year exceeded the ledger value..... \$928,907.02  
Final liquidating dividend on 220 shares Chehalis & Pacific Land Co., Capital Stock (Par \$10)..... 1,543.43

Less payment of legal fees.....	\$930,450.45
	<u>750.00</u>
	<u>\$929,700.45</u>

**AMORTIZATION OF PREMIUMS PAID ON PURCHASE OF SECURITIES**

52,000,000 USA Treasury Bonds, 2 3/4s/59-62.....	8880.31
2,200,000 USA Treasury Certificates of Indebtedness, Ser. B 7/8s/47.....	404.75
2,300,000 USA Treasury Certificates of Indebtedness, Ser. C 7/8s/47.....	473.80
2,000,000 USA Treasury Certificates of Indebtedness, Ser. D 7/8s/47.....	542.15
6,000,000 USA Treasury Notes, Ser. A 1 3/4s/47 .....	<u>8,768.28</u>
	<u>\$11,069.29</u>

TRANSACTIONS RELATING TO INVESTED FUNDS — *Concluded*

## RECONCILIATION

Ledger value of securities, December 31, 1945.....	\$167,798,939.52
Purchased.....	\$20,027,448.08
Received through exchange.....	4,180,000.00
Rights and stock dividends received.....	141.00
Value of securities received under:	
Will of William F. Hendry .....	15,853.00
Will of Robert Marsh, Jr. ....	389,137.50
Additions to ledger value.....	5,670.00
	24,618,249.58
	<hr/>
Sold.....	2,834,423.88
Redeemed.....	17,770,000.00
Surrendered through exchange.....	4,180,000.00
Ledger value reduced.....	12,549.00
Amortization of premiums.....	11,069.29
Ledger value liquidated.....	1.00
	24,808,043.17
	<hr/>
Ledger value of securities, December 31, 1946..	\$167,609,145.93
	<hr/>

## SCHEDULE OF SECURITIES ON DECEMBER 31, 1946

## BONDS

NAME	PAR	LIADORE VALUE		MARKET VALUE	
		PRICE	TOTAL	PRICE	TOTAL
American Telephone & Telegraph Co. 15 Year Conv. Deb. 2 3/4s, Dec. 15, 1961.....	\$110,000	111.28	\$122,408.00	119.125	\$131,037.50
Anglo Chilean Nitrate Corp. Sinking Fund Income Deb. 4 3/4s, Jan. 1, 1967.....	30,000	87.5	26,250.00	97.125	29,137.50
Canada, Dominion of, 2nd Victory Loan 3s, Mar. 1, 1952-54	C 1,000,000		922,446.39		998,750.00
Canada, Dominion of, Conversion Loan of May 1, 1931, 4 3/4s, Nov. 1, 1948-58.....	C 1,000,000		983,094.91		988,750.00
Chicago City & Connecting Rys. Coll. Trust 5s, Jan. 1, 1927 (C/D).....	\$1,305,000	52.	678,600.00	15.	195,750.00
Chicago Rys. Co. 1st 5s, Feb. 1, 1927 (C/D) (25% paid — 500 bonds @ \$750 each).....	375,000	96.	360,000.00	57.5	215,625.00
Compania Salitrera Anglo Chilean Inc. 1st Mtg. Deb. 4 3/4s, Jan. 1, 1961.....	£5,000 @ \$4 or \$20,000	101.	20,200.00		13,750.00
Copenhagen (Denmark) City of, External 5s, June 1, 1952.....	\$20,000	82.	16,400.00	94.25	18,850.00
Imperial Chinese Government Hu Kuang Rya. S. F. Loan of 1911 5s, June 15, 1975.....	£189,000		321,300.00		144,112.50
Morris & Essex R.R. 1st Ref. 3 3/4s, Dec. 1, 2000.....	\$39,000	82.75	32,272.50	57.25	22,327.50
Northwestern Elevated R.R. 1st 5s, Sept. 1, 1941.....	500,000	70.	350,000.00	25.	125,000.00
Standard Oil Co. (New Jersey) 25 Year Deb. 2-3/4s, May 15, 1971.....	8,499,000	98.	8,329,020.00	98.25	8,350,267.50

BONDS — *Continued*

NAME	PAR	LEDGER VALUE		MARKET VALUE	
		PRICE	TOTAL	PRICE	TOTAL
<b>United States of America Treasury Certificates of Indebtedness <math>\frac{7}{8}\%</math>:</b>					
Series A, due Jan. 1, 1947 . . . . .	\$3,000,000	100.	\$3,000,000.00	100.	\$3,000,000.00
Series B, due Feb. 1, 1947 . . . . .	2,200,000	100 02	2,200,404.76	100 01	2,200,220.00
Series C, due Mar. 1, 1947 . . . . .	2,300,000	100 02	2,300,473.80	100.01	2,300,230.00
Series D, due Apr. 1, 1947 . . . . .	3,180,000	100 017	3,180,542.15	100.018	3,180,572.40
<b>United States of America Treasury Bonds:</b>					
<i>Int.      Dated      Due</i>					
2% — May 15, 1942 — Sept. 15, 1949-1951 . . . . .	380,000	100.	380,000.00	102.25	388,550.00
2% — Apr. 15, 1943 — Sept. 15, 1950-1952 . . . . .	6,000,000	100	6,000,000.00	102.53125	6,151,875.00
2% — Sept. 15, 1943 — Sept. 15, 1951-1953 . . . . .	5,000,000	100	5,000,000.00	102.75	5,137,500.00
2% — June 26, 1944 — June 15, 1952-1954 . . . . .	4,500,000	100	4,500,000.00	102.8125	4,626,562.50
2% — Dec. 1, 1944 — Dec. 15, 1952-1954 . . . . .	6,600,000	100	6,600,000.00	102.875	6,789,750.00
2 $\frac{3}{8}\%$ — June 2, 1941 — Mar. 15, 1956-1958 . . . . .	4,000,000	106 914	4,277,500.00	107.09375	4,283,750.00
2 $\frac{3}{8}\%$ — June 1, 1945 — June 15, 1959-1962 . . . . .	9,000,000	100	9,000,000.00	102.1875	9,196,875.00
2 $\frac{3}{8}\%$ — Nov. 15, 1945 — Dec. 15, 1959-1962 . . . . .	2,000,000	100.58	2,011,619.69	102.1875	2,043,750.00
2 $\frac{1}{2}\%$ — May 5, 1942 — June 15, 1962-1967 . . . . .	6,000,000	100.	6,000,000.00	104.96875	6,298,125.00
2 $\frac{1}{2}\%$ — June 1, 1945 — June 15, 1967-1972 . . . . .	3,000,000	100	3,000,000.00	102.875	3,086,250.00
2 $\frac{1}{2}\%$ — Oct. 20, 1941 — Sept. 15, 1967-1972 . . . . .	500,000	100	500,000.00	106.21875	531,093.75
2 $\frac{1}{2}\%$ — Nov. 15, 1945 — Dec. 15, 1967-1972 . . . . .	2,000,000	100.	2,000,000.00	102.875	2,057,500.00

United States of America Savings Bonds, Defense Series F (12 year appreciation bonds):						
Due May 1, 1953 — Maturity value .....	\$67,500	80.9	\$54,607.50	80.9	\$54,607.50	
Jan. 1, 1954 — " "	67,500	78.6	53,055.00	78.6	53,055.00	
July 1, 1954 — " "	67,500	77.6	52,380.00	77.6	52,380.00	
Jan. 1, 1955 — " "	135,000	76.7	103,545.00	76.7	103,545.00	
United States of America Treasury Notes:						
Series A, due Sept. 15, 1947 — 1 3/4%.....	6,350,000	100.138	6,358,768.26	100.40625	6,375,796.88	
Series C, due Sept. 15, 1947 — 1 3/4%.....	7,000,000	100.	7,000,000.00	100.25	7,017,500.00	
Western Union Telegraph Co. 5s, due Mar. 1, 1960 .....	10,000	107.5	10,750.00	82.5	8,250.00	
						\$86,171,095.53

## 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	\$17,530.00	\$0.00	\$0.00
Consolidated Edison Co. of New York, Inc. \$5 Cum. (No par).....	10,000	\$91.75	917,500.00	\$107.25	1,072,500.00
International Harvester Co. 7% Cum.....	16,275	115.00	1,871,625.00	176.50	2,872,537.50
Philadelphia Electric Co. 3.80%.....	2,000	102.70	205,400.00	102.00	204,000.00
United States Steel Corp. 7% Cum.....	6,600	133.86	883,462.50	146.50	966,900.00
<b>TOTAL PREFERRED STOCKS.....</b>	...	.	<b>\$3,877,988.50</b>	.	<b>\$5,115,937.50</b>

## COMMON STOCKS

NAME	SHARES	LEDGER VALUE		MARKET VALUE	
		PRICE	TOTAL	PRICE	TOTAL
American Telephone & Telegraph Co. Cap.....	6,675	\$174.85	\$1,167,128.50	\$171.50	\$1,144,762.50
The Buckeye Pipe Line Co. Cap. (No par).....	107,763	11.79	1,270,627.60	11.875	1,279,685.63
Chicago City & Connecting Rys. Participation Certificates (No par).....	10,518		1.00		0.00
Chicago, Milwaukee, St. Paul & Pacific R.R. Voting Trust Certificates for common shares.....	20,709.77	32.125	665,301.36	12.75	264,049.58
Consolidated Natural Gas Co. Cap. (Par \$15).....	105,970	26.57	2,815,622.90	54.50	5,775,365.00
Continental Oil Co. (Delaware) Cap. (Par \$5).....	60,627	11.15	676,125.70	41.125	2,493,285.38
El Paso Natural Gas Co. (Par \$3).....	1,000	35.75	35,750.00	52.50	52,500.00
Eureka Pipe Line Co. Cap. (Par \$10).....	12,000	45.00	540,000.00	28.25	339,000.00
International Nickel Co. of Canada, Ltd. (No par).....	50,000	51.67	2,583,532.07	35.50	1,775,000.00
Interstate Natural Gas Co. Inc. Cap. (No par).....	33,763	14.96	505,042.25	20.00	675,260.00
Kennecott Copper Corp. Cap. (No par).....	35,100	58.54	2,054,731.03	52.75	1,851,525.00
Middle West Corp. Cap. (Par \$5).....	68,351.92	7.75	529,729.22	21.50	1,469,566.28
National Fuel Gas Co. Cap. (No par).....	381,018	7.75	2,952,889.50	14.375	5,477,133.75
Ohio Oil Co. (No par).....	94,684	35.37	3,349,446.50	23.875	2,260,580.50
Phelps Dodge Corp. Cap. (Par \$25).....	37,600	52.72	1,982,151.40	42.25	1,588,600.00
Potash Co. of America (Par \$5).....	4,000	23.50	94,000.00	30.00	120,000.00
Southern Pipe Line Co. Cap. (Par \$10).....	24,300	6.25	151,875.00	7.00	170,100.00
South West Pennsylvania Pipe Lines Cap. (Par \$10).....	7,960	34.28	272,866.68	34.25	272,630.00
Standard Oil Co. of California Cap. (No par).....	60,967	17.25	1,051,680.75	57.75	3,520,844.25

COMMON STOCKS — *Concluded*

NAME	SHARES	LEDGER VALUE		MARKET VALUE	
		PRICE	TOTAL	PRICE	TOTAL
Standard Oil Co. of Indiana Cap. (Par \$25).....	691,140	\$28.90	\$19,973,946.00	\$41.00	\$28,336,740.00
Standard Oil Co. (New Jersey) Cap. (Par \$25).....	1,000,000	30.33	30,326,018.02	69.25	69,250,000.00
Standard Oil Co. (Ohio) (Par \$10).....	345,902.40	9.74	3,368,602.52	24.75	8,561,084.40
Union Pacific Railroad Co. (Par \$100) .....	100	123.625	12,362.50	130.125	13,012.50
Union Tank Car Co. Cap. (No par).....	240,000	6.69	1,606,087.97	36.125	8,670,000.00
Wilson Realty Co. Cap. ....	591		1.00		0.00
<b>TOTAL COMMON STOCKS.....</b>	.....	.....	<b>\$77,985,519.47</b>	.....	<b>\$145,360,724.77</b>

SUMMARY	LEDGER VALUE	MARKET VALUE
Bonds.....	\$85,745,637.96	\$86,171,095.53
Preferred Stocks.....	3,877,988.50	5,115,937.50
Common Stocks....	77,985,519.47	145,360,724.77
	<b>\$167,609,145.93</b>	<b>\$236,647,757.80</b>

**LYBRAND, ROSS BROS. & MONTGOMERY**

**CERTIFIED PUBLIC ACCOUNTANTS**

**90 BROAD STREET, NEW YORK**

**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, 1946, and the related statements of transactions for the year then ended, have reviewed the system of internal control and the accounting procedures of the Foundation and, without making a detailed audit of the transactions, have examined or tested accounting records of the Foundation and other supporting evidence, by methods and to the extent we deemed appropriate. Our examination was made in accordance with generally accepted auditing standards applicable in the circumstances and included all procedures which we considered necessary.

Cash on deposit at December 31, 1946, as confirmed directly to us by the respective depositaries, was reconciled with the amounts shown on the balance sheet. Securities owned at December 31, 1946, and held in the Foundation's safe deposit vaults were examined by us and those held elsewhere were confirmed by direct correspondence. We satisfied ourselves that income was properly accounted for and that appropriations and expenditures were duly authorized.

In common with the practice of many nonprofit organizations, the Foundation's accounts are maintained on the basis of cash receipts and disbursements except with respect to appropriations and to adjustments of premiums and appreciation on United States Government bonds.

In our opinion, the accompanying balance sheet and related statements set forth the position of the Foundation at December 31, 1946, and the results of its transactions for the year then ended on a basis consistent with that of the preceding year.

**LYBRAND, ROSS BROS. & MONTGOMERY**  
**NEW YORK, March 27, 1947.**

# INDEX

- ACCOUNTANTS' certificate, 341  
Administration and scientific services  
    appropriations and payments, 273,  
        309  
Adrian, E. D., 111  
*Aedes aegypti*, 20  
*Aedes africanus*, 20  
*Aedes simpsoni*, 20, 87  
Africa  
    yellow fever mosquitoes, 19-21, 87-  
        88, 314  
Agricultural program, *see* Mexico  
Aitken, Thomas H. G., 56  
Alabama  
    rabies study, 313  
Alabama, University of  
    study of electoral process in the South,  
        35, 210, 297  
Alberta Social Credit Experiment, 214  
Alberta, University of, Edmonton,  
    Canada  
    life and traditions of Province of  
        Alberta, 303  
Albright, Fuller, 100  
Aldrich, Winthrop W., viii, ix, 51  
All-India Institute of Hygiene and Pub-  
    lic Health, *see* India  
All-Union Institute of Experimental  
    Medicine and All-Union Institute  
    of Epidemiology, Russia, 326  
American Council of Learned Societies,  
    42, 229, 248-252, 306  
    art museums in American life, 306  
    cataloguing American collections of  
        Chinese and Japanese books, 299  
Committee on Far Eastern Studies,  
    299  
Committee on Protection of Cultural  
    Treasures in War Areas, 306  
completion of Turkish dictionary, 299  
fellowships, 250-251, 307  
Joint Committee on Latin American  
    Studies, 299  
microfilming projects, 306  
modern language teaching, 299  
Pacific Coast Committee, 251-252,  
    306  
Slavic studies materials, 299  
American Film Center, Inc., New York  
    films in medical education, 280  
    general budget, 305  
American Institute of Pacific Relations,  
    *see* Institute of Pacific Relations  
American Institute of Physics, New  
    York, 174, 289  
American Library Association, 11, 263  
Committee on Aid to Libraries in War  
    Areas, 264-265, 304, 308  
interchange of personnel and materi-  
    als, 241-243, 304  
library school in São Paulo, Brazil,  
    304  
services for Canadian libraries, 304  
American Library in Paris, Inc., France,  
    304  
American Mathematical Society, New  
    York  
    expenses of International Congress of  
        Mathematicians, 289  
    expenses of Policy Committee for  
        Mathematics, 174  
American Medical Association, 120, 121  
American Philosophical Society, 164  
American political democracy, function-  
    ing of, 34-35, 210-212  
American Psychiatric Association, New  
    York  
    Committee on Psychiatric Nursing,  
        276  
American Public Health Association,  
    Washington, D. C.  
    medical care, 62, 320

- American public opinion, study of, 193-194
- American Q fever, 84
- American School of Classical Studies, Athens, *see* Greece
- American-Soviet Science Society, New York, 11, 169-170, 289
- American studies, 35-37, 235-241, 249-250, 253, 302-304
- American University of Beirut, *see* Syria
- Amherst College, Massachusetts  
biological research, 144-145, 284
- Amsterdam, University of, *see* Holland
- Anderson, Charles R., M.D., 56
- Anderson, Richmond K., M.D., 56
- Anderson, William, 211
- Annals of Eugenics*, 118
- Anopheles mosquitoes, 89-90  
*Anopheles aquasalis*, 93  
*Anopheles labranchiae*, 18-19
- Appleget, Thomas B., viii, ix, 51
- Applications declined during 1946, 47-48
- Appropriations, 5-6  
account, 53  
and payments, 272-273  
and unappropriated authorizations, 273, 275  
during 1946, unpaid balances of prior year appropriations, and payments thereon in 1946, 276-309
- Argentina  
fellowships, 126, 173  
grant in aid, 128  
Institute of Biology and Experimental Medicine, Buenos Aires, 282  
respiratory virus research, 313  
*see also* Buenos Aires, University of
- Associated Boards for Christian Colleges in China, 259-260, 307
- Associated Hospital Service, 66
- Association of Honorary Consultants of the Army Medical Library, Washington, D. C., 280
- Association of Land-Grant Colleges and Universities
- Committee on Postwar Agricultural Policy and Planning, 291
- Association of Schools of Public Health, 121
- Association of Special Libraries and Information Bureaux, London, *see* Great Britain
- Astbury, W. T., 154
- Astronomy, 25-28, 164-168, 175
- Athens, Greece, 74, 174, 306
- Atomic energy, social implications of, 193-195
- Atomic power, commercial, 194-195
- Australia  
fellowships, 219, 283  
National Health and Medical Research Council, Department of Health, Canberra, 283
- Australian-New Zealand Committee on Social Science Fellowships, 221
- BALANCE sheet, 270-271
- Balfour, Arthur J., 192
- Balfour, Marshall C., M.D., 56
- Baltimore, Maryland, 78
- Barnard, Chester I., viii, ix, 51, 52
- Bartlett, C., 109
- Bates, Marston, 56
- Bauer, Johannes H., M.D., 56
- Beadle, George W., 135
- Beal, George J., viii, ix, 51
- Beirut, Syria, 127
- Belgium  
fellowships, 219  
grant in aid, 128  
public health, 73  
*see also* Brussels and Louvain, universities of
- Belknap, Chauncey, viii, ix, 51
- Best, Charles H., M.D., viii, ix, 52, 56
- Bevier, George, M.D., 56
- Bezanson, Anne, 178
- Bidwell, Percy, 221
- Bingham Associates Fund of Maine, Boston, Massachusetts  
medical care, 15  
postgraduate medical education, 280
- Biochemistry, 137-141, 151-152, 154-160, 175

- Biology, experimental, 133-162, 175, 284-289
- Bion, W. R., 110
- Birmingham, University of, England, 307
- Bishop, Eugene L., M.D., ix
- Bogotá, Colombia, 77, 86
- Bolivia
- Division of Endemic Diseases, 318
  - local health services, 320
- Boone Library School, Chungking, 305
- Bowen, Ira C., 167
- Boyd, Julian P., 244
- Boyd, Mark F., M.D., 56
- Brackett, Elizabeth W., 56
- Brain chemistry, 112-113
- Brazil
- Escola Livre de Sociologia e Política de São Paulo, 293
  - fellowships, 126, 173
  - grant in aid, 128
  - library school in São Paulo, 304
  - local health services, 320
  - University of Brazil, Rio de Janeiro, 127
  - yellow fever control, 86, 315
  - see also* São Paulo, University of
- Bremer, Frederic, 113
- Bretton Woods, 184
- British-American Blockade, 202
- British Columbia, Province of, Canada
- local health department, 319
  - medical care survey, 64-65
- British Department of Colonial Development and Welfare, *see* Great Britain
- British Guiana
- malaria control, 88, 312
  - yellow fever control, 315
- British Medical Association, *see* Great Britain
- British Medical Research Council, London, 42
- postdoctoral fellowships, 126, 283
  - research in endocrinology, psychiatry, neurology and allied subjects, 278
- British Museum, London, *see* Great Britain
- Brooke General Hospital, Fort Sam Houston, Texas, 120
- Brookings Institution, Inc., Washington, D. C.
- general program, 291
  - research in international relations, 33, 182-183, 291
- Brown University, Providence, Rhode Island
- collections on American history and Hispanic culture, 299
  - Graduate Division of Applied Mathematics, 43, 170-171, 289
- Browne, J. S. L., 101
- Brownell, Baker, 37, 237-238
- Brussels, University of, Belgium, 11
- neurophysiology, 113-114, 278
  - social medicine, 281
- Buenos Aires, University of
- bibliographical center and institute of library practice, 305
  - Institute of Physiology, 283
- Bugher, John C., M.D., 56
- Burchard, John E., 244
- Burma Road, 90
- Burris, R. H., 158-159
- Burwell, Sidney C., 260
- Butler, Sir Harold, 220
- CALIFORNIA**
- Department of Public Health, 83
  - Virus Diagnostic Laboratory, 83-84, 313, 319
- California Institute of Technology, Pasadena
- biology and chemistry research, 134-136, 284
  - immunology research, 284
  - Mount Palomar telescope, 26, 166-168, 290
- California, University of, Berkeley
- biochemistry, 138, 286
  - Bureau of Business and Economic Research, 202-203, 297
  - Bureau of Public Administration, 297

- California, University of—*Continued*  
 construction and installation of cyclotron, 286  
 hormones and vitamins, 280  
 immunochemistry, 150-151, 286  
 malaria, 85  
 Slavic and Far Eastern studies, 301
- Calvin, Melvin, 150-151
- Cambridge, England, 175
- Cambridge, Massachusetts, 188
- Cambridge, University of, England, 11, 37  
 Department of Applied Economics, 203-204, 297  
 Institute of Biology and Parasitology, 287  
 Physiological Laboratory, 111-112, 279  
 Psychological Laboratory, 108-109, 278
- Cameron, Ewen, 113
- Campbell, Dan H., 135
- Canada  
 fellowships, 125-126  
 local health services, 319  
 medical care surveys, 65  
 nutrition studies, 288, 312  
 public health education, 320  
 state health services, 316-317  
*see also* separate provinces
- Canada, Humanities Research Council of, Hamilton, 306
- Canadian Institute of International Affairs, Toronto, 183-184, 292
- Canadian Journal of Economics and Political Science*, 213
- Canadian Medical Association, 83
- Canadian Northland study, 214
- Canadian Social Science Research Council, Montreal  
 stimulation of social science research, 213-214, 292  
 study of Alberta Social Credit Experiment, 292
- Canton, China, 260
- Caracas, Venezuela, 77
- Cardiology, National Institute of, Mexico, D. F., 118, 278
- Caribbean Area  
 British West Indies Training Station, Jamaica, 323  
 local health departments, 79-80, 319  
 malaria, 311  
 state health services, 79-80, 317  
 yellow fever, 315
- Carlos Finlay Institute for Special Studies, 86
- Carlsberg Foundation, Copenhagen, Denmark  
 research in biochemistry, 139, 284
- Carnegie Corporation, 164
- Carnegie Institution, Washington, D. C., 246
- Carr, Henry P., M.D., 56
- Carter, Joseph C., 56
- Caspersson, Torbjörn, 136-137
- Catholic University of America  
 research on decomposition and synthesis, 284  
 teaching and research in psychiatry and child guidance, 277
- Causey, Ottis R., 56
- Central Medical Library Bureau, *see* Great Britain
- Central Middlesex Hospital, London, 118
- Centre d'Études de Politique Étrangère, Paris  
 general budget, 184-185, 292
- Centre National de la Recherche Scientifique, Paris, 6  
 natural science research laboratories, 10, 162-163, 290  
 scientific conferences, 162-163, 290
- Ceylon, nursing schools, 77, 322
- Chadwell, H. Marshall, 130
- Chain, Ernst B., 154
- Chapingo, Mexico, 161
- Chargaff, Erwin, 139-140
- Charles University, Prague, *see* Czechoslovakia
- Chavez, Ignacio, 118
- Chemistry, 133-142, 149-160
- Chemotherapy, 70, 84-85, 89
- Chicago, University of, Illinois, 33  
 application of spectroscopic methods to biological problems, 287

- Chinese studies, 301  
 Cowles Commission for Research in Economics, 194  
 industrial diseases, 282  
 Institute of Nuclear Physics, 195  
 malaria studies, 89, 312  
 Mississippi Valley and Canadian history, source materials, 303  
 modern language teaching, 301  
 molecular spectra, 287  
 Office for Inquiry into Atomic Energy, 194-195, 221, 297  
 psychiatry, 279  
 Sears, Roebuck and Company studies, 204-205, 297  
 social sciences research, 297  
 Child Research Council of Denver, Colorado, 106-108, 277  
 Chile  
 fellowships, 126, 173  
 local health services, 320  
 tuberculosis survey, 318  
 University of Chile, Santiago, School of Public Health, 78, 321  
 China  
 appropriations and payments, 272, 273, 307-308  
 Boone Library School, Chungking, 305  
 Chinese history, source materials, 234-235  
 colleges and universities, 6, 40-41, 259-260, 307-308  
 commission to study development of medicine and public health, 260-261, 308  
 fellowships, 173, 307  
 Fukien Christian University, 41, 260  
 Ginling College, 41, 260  
 Hwa Nan College, 41, 260  
 malaria studies, 90-91, 311  
 Nankai University, Tientsin, Institute of Economics, 200-201, 295  
 Nanking, University of, 41, 260  
 educational cinematography, 306  
 agricultural economics, 307  
 National Institute of Health, Nanking, 78, 90-91, 321  
 Peiping Union Medical College  
 human paleontology in Asia, 290  
 St. John's University, Shanghai, 259  
 state health services, 317  
 Soochow University, Shanghai, 259  
 Szechwan Provincial Health Administration, 317  
 Tsing Hua University, Kunming, humanities teaching program, 301  
 typhus fever, 314  
 Yenching University, College of Public Affairs, 308  
 China Medical Board, New York, 261, 290  
 Chinese Institute, *see* Leiden, University of  
 Christian Michelsen Institute, Norway  
 research and popular education in international relations, 185-186, 292  
 Chungking, China, 90, 305  
 Churchill, Winston, 15  
 Cincinnati, University of, Ohio  
 research in neurophysiology, 279  
 Clark, Harry Hayden, 237  
 Clarke, Delphine H., M.D., 56  
 Clay, Sir Henry, 220  
 Colegio de México, Mexico, D. F.  
 Center for Historical Research, 299  
 Colombia  
 Carlos Finlay Institute for Special Studies, 86  
 fellowships, 173  
 malaria, 89-90, 312, 315  
 National Superior School of Nursing, Bogotá, 77, 322  
 Villavicencio Laboratory, 89-90  
 yellow fever, 86-87, 89-90, 315  
 Colonial Williamsburg, Inc., Williamsburg, Virginia  
 index for *Virginia Gazette*, 302  
 Colorado School of Mines, Golden  
 equipment for language instruction, 299  
 Colorado, State Historical Society of, Denver  
 study of western range cattle industry, 296

- Colorado, University of, Boulder  
 Far Eastern studies, 302  
 School of Medicine, affiliation with  
   Child Research Council of Den-  
   ver, 106-108, 277
- Columbia University, New York  
 biochemistry, 139-141, 284  
 development of Russian Institute, 292  
 economic aspects of public finance,  
   292  
 electrical properties of cells and tis-  
   sues, 284  
 endocrinology, 104-106, 280  
 enzyme chemistry, 284  
 exploratory study in group relations  
   and tensions, 292  
 genetic control of growth and devel-  
   opment, 284  
 history of American economic thought,  
   292  
 immunochemistry, 149-150, 284  
 plant growth, 284  
 psychiatry, genetics of mental dis-  
   ease, 277  
 School of International Affairs, 292  
 study of problems of metabolism,  
   284  
 study of Russian foreign policy, 292  
 theory of public utility rates, 292
- Combined Civil Affairs Committee, 202  
 Combined Food Board, 201  
 Commission to China, 260-261  
 Committee for Rehabilitation of Polish  
   Science and Culture, Inc., 262-  
   264, 308  
 Committee on Research in Medical  
   Economics, 15  
 Compton, Karl T., viii, ix, 51  
 Condon, E. U., 170  
 Conferences, international, 162-164, 175,  
   183, 184  
 Connecticut Agricultural Experiment  
   Station, New Haven  
   genetics and growth in plants, 284  
 Control and investigation of specific  
   diseases and deficiencies, 311-316  
   *see also* Disease Control  
 Cooperative Committee on Library  
   Building Plans, 243-244  
 Copenhagen, Denmark, 139, 175, 196  
 Copenhagen, University of, Denmark  
   grants in aid, medical sciences, 127  
   Institute of Economics and History,  
     196  
   research in biophysics, 287  
 Connecticut College, New London  
   instruction in German language and  
     culture, 299  
 Cornell University, Ithaca, New York  
   American public opinion in relation  
     to Crossroads experiment with  
       atomic bomb, 33, 193-194, 292  
   civil liberties in wartime, 292  
   Division of Modern Languages, 300  
   enzyme chemistry, 285  
   New York State studies, 302  
   protein chemistry, 285  
   Slavic studies, 300  
 Corwin, Janet D., 56  
 Council on Foreign Relations, New  
   York  
   history of U. S. foreign relations dur-  
     ing World War II, 33, 188-189,  
     293  
   war and peace studies and general re-  
     search, 186-188, 293  
 Courant, Richard, 171  
 Crane, Robert T., 178, 214  
 Crawford, Porter J., M.D., 56  
 Cuba, 126  
 Curti, Merle, 236-237  
 Czechoslovakia  
   Charles University, Prague, 127  
   fellowships, 126  
   grants in aid, 128  
   rehabilitation of medical schools, 123
- DALHOUSIE University, Halifax,  
   Nova Scotia  
   development of teaching in psychi-  
     atry, 277  
   medical training at Victoria General  
     Hospital, 281  
 Darby, William J., 91  
 Dartmouth Eye Institute, 128

- Dauben, William, 85  
 David, Charles W., 244  
 Davis, William A., M.D., 56  
 DDT, *see* Insecticides  
 Debevoise, Thomas M., viii, ix, 51  
 Delhi, India, 175  
 Denmark, 7  
   fellowships, 126, 173  
   grants in aid, 128, 174-175  
   Institute of Economics and History,  
 Copenhagen, 196-199  
   *see also* University of Copenhagen  
     and Carlsberg Foundation  
 Denver, University of, Colorado  
   Bureau of Business and Social Re-  
 search, 297  
 Dikemark Mental Hospital, Asker, *see*  
   Norway  
 Diphtheria studies, 92-93, 311  
 Disease control, 86-93, 311-316  
   malaria, 88-91  
   yellow fever, 86-88  
 Dobzhansky, Th., 170  
 Dodds, Harold W., viii, ix, 51  
 Dodds, John W., 251  
 Dominican Republic  
   public health laboratory, 317  
   public health survey, 79-80, 317  
 Douglas, Lewis W., viii, ix, 51  
 Downs, Wilbur G., M.D., 56  
 Drama, film and radio  
   appropriations, 305-306  
   grants in aid and fellowships, 253  
 Duke University, Durham  
   Brown folklore collection, 302  
   grants in aid, medical sciences, 127  
   Latin American studies materials,  
 300  
   physical chemistry of proteins, 137-  
 138, 285  
   psychiatry and mental hygiene, 277  
 Dulles, John Foster, viii, ix, 51, 52  
 Dunn, L. C., 170  
 Dutch Economic Institute, 195-196,  
 293  
 Duyvendak, J. J. L., 39, 232  
 Dyer, Brian R., 57  
 Dyer, Rolla E., M.D., ix
- EATON, Monroe D., M.D., 57  
 Elmendorf, John E., Jr., M.D., 57  
 École Nationale des Langues Orientales  
   Vivantes, Paris, 230  
 Economic research, 195-210, *see also*  
   International studies  
 Economics and Politics, Copenhagen,  
 196  
 Economisch-Statistische Berichten, 195  
 Ecuador  
   fellowship, 126  
   National Institute of Hygiene, 318  
   National Yellow Fever Service, 87,  
 315  
   School of Nursing, Quito, 77, 323  
 Edinburgh, University of, Scotland  
   research in psychiatry, neurology and  
     neurosurgery, 279  
 Egypt  
   Government Gambiae Eradication  
 Service, 325  
   malaria, 88, 311  
 Eidgenössische Technische Hochschule,  
   Zurich, Switzerland  
   Laboratory of Organic Chemistry, 6,  
 153, 285  
 Eire, 75  
 Electronic computation, 168-169  
 Elliott, K. A. C., 113  
 El Salvador  
   local health department, 319  
 Embryology, 145, 152-153  
 Emerson, Sterling, 135  
 Emma Pendleton Bradley Home, Provi-  
 dence, Rhode Island, 128  
 Emmet, Boris, 204  
 Encephalitis, 84  
 Endocrinology, 100-102, 104-106, 280  
 England, *see* Great Britain  
 Engle, Earle T., 105  
 English National Health Services Act,  
 1946, 65  
 Entebbe Yellow Fever Research Insti-  
 tute, Uganda, Eastern Africa,  
 19, 87  
 Epilepsy, 112, 113  
 Equipment fund, 274

- Escola Livre de Sociologia e Política de São Paulo, *see* Brazil
- Europe, 6, 99  
diphtheria, 93  
intellectual vitality of, 9  
interest in American culture, 37  
international conferences, 10, 162-164, 175, 183-184  
literature for Europe, 215-216, 262-265, 326  
local health services, 317  
malaria, 311  
public health survey, 70-75  
schools and institutes of hygiene and public health, 321  
schools of nursing, 322  
state health services, 317  
study and control of typhus, malaria and other diseases, 325  
*see also* separate countries
- Evans, Robert, 150-151
- Evans, Roger F., 178
- Exchange Fund, 308
- FAHS, Charles B., 224
- Fair, Gordon M., viii, ix, 52, 56
- Far East  
local health departments, 320  
malaria, 311  
nutrition, 313  
schools and institutes of hygiene and public health, 321  
schools of nursing, 322  
state health services, 317  
typhus fever, 314
- Far Eastern studies, 39-40, 191-192, 200, 232-235
- The Far Eastern Survey*, 191
- Federal Communications Commission, 253
- Fellowships, 13, 41-43  
American Council of Learned Societies, 42, 250-251
- British Medical Research Council, 42, 126
- Brown University, fellowships in applied mathematics, 170-171, 173-
- China, 307  
humanities, 252-253, 307  
medical sciences, 125-127, 283
- National Research Council, 42, 127, 173
- New York University, fellowships in applied mathematics, 171-172, 173
- natural sciences, 172-173, 289
- public health, 69, 323
- Rockefeller Foundation Health Commission, 69
- schools and institutes of hygiene and public health, 79
- Social Science Research Council, 42, 220
- social sciences, 215-216, 219-220, 293
- Field service, 323-324
- Fieser, Louis F., 85
- Finland, 7, 73  
fellowships, 126  
grants in aid, 128, 175  
local health services, 319  
University of Helsinki, 127
- Fisher, H. H., 231
- Fleming, Sir Alexander, 154
- Florey, Sir Howard W., 154
- Florida  
murine typhus survey, 92, 314  
rickettsial infections chemotherapy, 85  
State Board of Health, 88  
State College for Women, 88  
State Hospital, 88  
Station for Malaria Research, Tallahassee, 88-89
- Food and agriculture studies, 201-202  
*see also* Mexico
- Foreign Affairs, 186
- Foreign Policy Association, New York research program, 293
- Fort Sam Houston, Texas, 120
- Fosdick, Raymond B., viii, ix, 51
- Fox, John P., M.D., 57
- France, 6, 7, 10, 73-74  
Centre d'Études de Politique Étrangère, Paris, 184-185

- Centre de Recherches de l'Hôpital Foch, Paris, 326
- Centre National de la Recherche Scientifique, 6, 10, 162-163
- conferences, 162-163
- economic studies, 199-200, 294
- fellowships, 126, 173
- grants in aid, 128
- Institute of Economic and Social Research, 199-200, 294
- medical publications, 119
- natural science laboratories, 162-163
- Francqui Foundation, 113
- Freeman, Douglas S., viii, ix, 51
- Frisch, Ragnar, 206
- Frobisher, Martin J., Jr., 92
- Fukien Christian University, *see* China
- Funds available for commitment, 274
- The Future of Japan*, 191
- GABALDÓN, Arnoldo, 90
- Galton, Sir Francis, 117
- Galton Laboratory, 117-118, 279
- García, Egberto, 87
- Gard, Robert, 237
- Gasser, Herbert S., M.D., viii, ix, 51, 52
- Gastro-intestinal diseases inquiry, 315
- General Education Board, 5, 44-47, 261-262
- appropriations and payments, 272, 308
- expenditures, 45
- fellowships, 127
- General Medical Council of Great Britain, *see* Great Britain
- Genetics, 117-118, 133-136, 143-148
- Geneva Graduate Institute of International Studies, Switzerland, 189, 293
- Geological Society of America, 174
- Germany, 7
- Gifford, Walter S., viii, ix, 51
- Ginling College, *see* China
- Glasgow, University of, 297
- Goldzieher, B., 105
- Goubaud, Antonio, 246
- Goodchild, Donald, 250
- Goodner, Kenneth, 57
- Governing of Men*, 191
- Gowen, J. W., 146-147
- Graduate medical education, *see* Medical training
- Grant, John B., M.D., 57, 64
- Grants in aid
- China, 307
  - humanities, 253, 307
  - medical sciences, 127-128, 283
  - natural sciences, 173-175, 290
  - social sciences, 217-218, 220-221, 293, 296
- Great Britain
- Association of Special Libraries and Information Bureaux, London, 305
  - British Department of Colonial Development and Welfare, 76
  - British Medical Association, 65
  - British Medical Research Council, 42, 126, 278, 283
  - British Museum, London, 305
  - Central Medical Library Bureau, 11
  - economic studies of United Kingdom, 203-204, 205-206
  - fellowships, 173, 283
  - grants in aid, 128, 175
  - General Medical Council of Great Britain, 127
  - medical care, 64-65, 320
  - microfilming projects, 75-76, 306
  - National Buildings Record, London documentation of architectural records, 306
  - National Central Library, 12, 305
  - National Institute of Economic and Social Research, 295
  - see also* separate universities and royal societies and institutes
- Greece
- American School of Classical Studies, Athens, museum of Agora excavations, 306
  - grants in aid, 174-175
  - National University of Engineering Science, Athens, 174
  - Public health survey, 74

- Greece—Continued  
 School of Hygiene, Athens, and schools of nursing, 74  
 Greenberg, David M., 138  
 Gregg, Alan, M.D., viii, ix, 51, 96, 260  
 Groningen, University of, *see* Holland  
 Group Health Cooperative, New York City, *see* Group Health Insurance, Inc.  
 Group Health Insurance, Inc., New York City, 15, 63, 320  
 Guatemala  
*National Archeological Museum*, 245-246, 300  
 study of hand weaving in, 253  
 Gunn, Selskar M., 121
- HACKETT, Lewis W., M.D., 56  
 Haddow, Alexander J., M.D., 57  
*Haemagogus* mosquitoes, 86  
 Hahn, Richard G., M.D., 57  
 Halverson, Wilton L., M.D., viii, 52, 56  
 Halvorsen, Arne, 248  
 Hamburger, Jean, 119  
 Hamburger, Viktor, 152  
 Hammarsten, Einar, 136  
 Hanley, Miles, 237  
 Harvard University  
 chemotherapy, 285  
 Department of Chemistry, 85  
 Department of Sanitary Engineering, 78, 321  
 hygiene and public health education, 276  
 legal medicine, 281  
 Medical School, 142-143, 285  
 Postgraduate School of Engineering, 80  
 proteins study, 285  
 Psychological Clinic, studies, 277  
 research in epilepsy, 277  
 School of Education, 300  
 School of Public Health, 78, 174, 276, 321  
 Slavic studies, 300  
 social sciences research, 293  
 teaching and research in psychiatry, 277 -  
 and Radcliffe College, international studies, 293  
 Hayes, Guy S., M.D., 57  
 Health insurance, *see* Medical care  
 Health Insurance Plan of Greater New York (HIP), 15-16, 65-68, 276  
 Hebrew University, Jerusalem, Palestine  
 infective hepatitis, 311  
 Heidelberger, Michael, 149-150, 170  
 Helsinki, University of, *see* Finland  
 Hendry, William F., 272, 329  
 Henry E. Huntington Library and Art Gallery, San Marino, California  
 regional studies of Southwest, 302  
 Hepatitis, infective, 83-84, 311  
 Hess, W. R., 114  
 Hetherington, Sir Hector, 220  
 Hicks, J. R., 220  
 Hicks, Mrs. J. R., 220  
 Hill, Rolla B., M.D., 57  
 Hirst, Esther M., 57  
 Hirst, George K., M.D., 57  
 Hitti, Philip K., 230  
 Holland, 7, 10  
 economic reconstruction studies, 195-196  
 fellowships, 126, 219  
 grants in aid, 128, 283, 291  
 public health survey, 73  
 school of public health, Leiden, 73  
 State Institute of Public Health, Utrecht, 69  
 Technical University, Delft, research in microbiology, 157-158  
 University of Amsterdam, 127  
 University of Groningen, 127  
*see also* universities of Leiden and Utrecht  
 Holter, Heinz, 139  
 Hoover, Herbert, 230  
 Hoover Institute for Slavonic Studies, *see* Stanford University  
 Housing, research in, 218-219  
 Hovland, Carl I., 178  
 Hughes, Thomas P., 57

- Humanities, 30-32, 39-40  
 appropriations and payments, 6, 11,  
 12, 13, 272, 273, 299-307  
 fellowships, 252-253, 307  
 grants in aid, 253, 307  
 program, 223-253  
 staff, 224
- Humanities Research Council of Canada, Hamilton, Ontario  
*see Canada*
- Hungary, 7, 10
- Hwa Nan College, *see China*
- Hydrick, John L., M.D., 57
- ICELAND, University of, Reykjavik  
 construction of Institute of Experimental Pathology, 291  
 scientific equipment, School of Medicine, 281
- Illinois, University of, Urbana  
 biochemistry of amino acids, 287  
 grants in aid, medical sciences, 127  
 research in biochemical aspects of schizophrenia, 279
- Immigration Politics*, 184
- Immunochemistry, 134-136, 149-151
- India  
 All India Institute of Hygiene, Calcutta, 321  
 gastro-intestinal diseases, 315  
 nutrition studies, 313  
 rural water standards study, 316  
 grants in aid, 174  
 local health department, Bengal, 320  
 National Institute of Sciences, Calcutta, scientific journals, 174  
 schools of nursing, 77, 322
- Indian Science Congress Association, Delhi, 175
- Indiana University, Bloomington  
 cytogenetics, 285  
 human sex behavior studies, 103
- Influenza, 83-85
- Insecticides  
 DDT, 18-19, 74, 315  
 Paris green, 18
- Institute and School of Hygiene, Warsaw, 69, 74, 326
- Institute for Advanced Study, Princeton, New Jersey  
 law of international civil aviation, 294  
 theory of value-formation in society, 212-213, 294
- Institute of Andean Biology, Lima, Peru, 124, 285
- Institute of Biology and Experimental Medicine, Buenos Aires, Argentina, 282
- Institute of Economic and Social Research, Paris, 199-200, 294
- Institute of Economics and History, Copenhagen, 196-199
- Institute of Inter-American Affairs, 87
- Institute of International Affairs, Stockholm, 189-190, 294
- Institute of Pacific Relations, 39, 40, 190-192  
 American Council, 191-192, 234-235  
 294, 300  
 Canadian Council, *see Canadian Institute of International affairs*  
 Pacific Council, 191, 294
- Internasjonal Politikk*, 186
- International Astronomical Union, Copenhagen, 10, 175
- International Federation of Documentation, 253
- International Health Division  
 appropriations, designations and payments, 276, 311-324, 276  
 field service, 323-324  
 laboratories, New York City, 84-85, 316  
 program, 55-93  
 scientific directors, viii-ix  
 staff, 56-57  
*see also* Public health education
- International Journal*, 184
- International studies, 32-33, 182-193
- International Studies Conference, 184
- International Topics*, 190
- Invested funds, transactions relating to, 328-334
- Iowa State College, Ames  
 physiological genetics, 146-147, 285

- Italy  
campaign against mosquitoes and malaria, 16-19, 70, 74
- JAMAICA, 76
- Janney, John H., M.D., 57
- Jefferson Medical College, Philadelphia grants in aid, medical sciences, 127
- Jewkes, John, 220
- Johns Hopkins University, Baltimore, Maryland  
American trade union government, 294  
diphtheria studies, 92-93  
infrared spectroscopy, 285  
Institute of History of Medicine, 281  
murine typhus studies, 92  
psychiatry, research and training, 277  
rodent ecology and control, 315  
School of Hygiene and Public Health, 78, 92-93, 311, 312, 322  
social sciences, research training, 214-215, 294  
syphilis studies, 92, 314  
taxonomic research center, 93, 316
- Johnson, Harald N., M.D., 57
- Junior Historian*, 238
- KARLGREN, Bernhard, 233
- Karolinska Institute, Stockholm, *see* Sweden
- Kendrick, John F., M.D., 57
- Kerr, J. Austin, M.D., 57
- Key, V. O., 210
- Kinsey, Alfred C., 103
- Kitchen, Stuart F., M.D., 57
- Kluyver, A. J., 157-158
- Knipe, Frederick W., 57
- Kögl, F., 151-152
- Kumm, Henry W., M.D., 57
- LABOR in the Philippine Economy*, 191
- Labor relations research  
United Kingdom, 205-206  
United States, 208-210
- Lagos Yellow Fever Research Institute, Nigeria, West Africa, 19, 87-88
- Lambert, Robert A., M.D., 96
- Lancashire, England, 205-206
- Langer, William, 33, 188
- Language and foreign cultures, studies in, 228-235, 249-250, 253, 299-302
- Latin America, 31, 227
- Laura Spelman Rockefeller Memorial, 189
- Leach, Charles N., M.D., 57
- League of Nations, 294  
documents, 244-245  
history of, 33, 192  
library, 189
- Leavell, Hugh R., M.D., 96
- Lebanon, 126
- Leeds, University of, England  
biological tissues analysis, 153-154, 287
- Leeward and Windward Islands  
Public Health Engineering Unit, 317
- Leiden, University of, Holland  
Chinese Institute, 39, 232-233, 302  
grants in aid, medical sciences, 127  
photographic telescope for Union Observatory, Johannesburg, South Africa, 291
- Lennette, Edwin H., M.D., 57
- Libraries and museums, 241-246, 304-305  
American Library Association, Committee on Aid to Libraries in War Areas, 264-265  
American-Soviet Science Society, 169-170  
Cooperative Committee on Library Building Plans, 243-244  
fellowships and grants in aid, 253  
Hoover Library on War, Revolution, and Peace, 230  
interchange of personnel and materials, 241-243  
rehabilitation of Polish libraries, 262-264
- Library of Congress, 245  
American studies, 303
- Lindberg, John, 212-213
- Linderström-Lang, K. U., 139
- Lindstrom, E. W., 146-147

- Lisbon, School of Nursing, 75, 77, 322  
Literature, scientific — distribution and publication  
    American Library Association, 264-265, 242-243  
    American-Soviet Science Society, 169-170  
    applied mathematics, 171  
    Canadian Institute for International Affairs, 184  
    Committee for Rehabilitation of Polish Science and Culture, Inc., 262-264  
    Far Eastern material, 232-233  
    Indian scientific journals, 174  
    League of Nations documents, 244-245  
    medical publications, France, 119, 281  
    Near Eastern material, 229  
    public health literature, 69, 75, 326  
    social science books for Europe, 215-216, 296  
    United Nations documents, 193, 297  
Littoria Province, Italy, 18  
Ljubljana, University of Yugoslavia, 127  
Logan, John Alexander, 57  
London County Council, England  
    research in psychiatry at Maudsley Hospital, 278  
London School of Hygiene and Tropical Medicine, 75, 326  
London, University of, England, 11  
    courses in psychiatry, 110  
    Galton Laboratory, genetics studies, 117-118, 279  
    research on vitamins, sterols and related compounds, 287  
School of Economics and Political Science  
    library development, 294  
    purchase of additional land, 294  
School of Oriental and African Languages, 230  
Long Island Biological Association, 175  
Loucks, Harold H., 260  
Louvain, University of, Belgium, 221  
Loveday, Alexander, 220  
Lund, University of, Sweden, 279  
Luxembourg, Province of, Belgium  
    public health survey, 73  
Lyon, E. Wilson, 251  
  
MACINNES, D. A., 170  
Magic wand theory of medical advance, 21-23  
Magoon, Estus H., 57  
Mahaffy, Alexander F., M.D., 57  
Maier, John, M.D., 57  
Malaria, 16-19  
    appropriations, 311-312  
    chemotherapeutic studies, 70, 84-85, 89  
    control and investigation, 70, 89-91  
    studies of induced malaria, 89  
    studies of malaria organism, 84-85, 89  
    therapy, 88  
Manchester, University of, England  
    Economics Research Section, 205-206, 297  
Manitoba, Province of, Canada  
    Bureau of Maternal and Child Hygiene and Nutrition, 80, 316  
    Division of Industrial Hygiene, 316  
    Division of Local Health Services, 316, 319  
    Division of Vital Statistics, 80  
    medical care survey, 64-65  
Manitoba, University of, Winnipeg, Canada  
    teaching of preventive medicine, 281  
Mann, Albert R., 130  
Mann, Thomas, 7  
Marsh, Robert, Jr., 5, 272, 274, 330  
Marshall, John, 224  
Martin, Roscoe C., 35  
Massachusetts General Hospital, Boston  
    case material for clinical-pathological conferences in various Army hospitals, 281  
    grants in aid, medical sciences, 128  
    research in endocrinology and metabolism, 100, 280  
Massachusetts Institute of Technology, Cambridge  
    biological engineering, 285

- Massachusetts Institute of Technology  
 — *Continued*  
 electronic computation, 168-169, 290  
 international relations for engineers,  
 295  
 library building planning, 243-244,  
 305  
 physical chemistry, 285  
 Mathematics, applied, 170-173  
 McCloy, John J., viii, ix, 51, 52  
 McCoy, Oliver R., M.D., 57  
 McEachern, Donald, 113  
 McGill University, Montreal  
 maintenance of Department of Psychiatry, 278  
 Montreal Neurological Institute, 112-113, 278  
 research in endocrinology, 101-102, 280  
 McIntosh, William A., M.D., 57  
 Medical Administration Service, Inc.,  
 New York, 122-123, 282  
 Medical care, 13-16, 62-68, 320  
 coordination of voluntary health agencies, 121-122  
 Medical Administration Service, Inc.,  
 122-123, 282  
 study of problems of social medicine,  
 120-121  
 study programs in United Kingdom and Europe, 64-65  
 Medical Sciences  
 appropriations and payments, 6, 11,  
 13, 63, 272, 273, 276-283  
 fellowships, 125-127, 283  
 grants in aid, 127-128, 283  
 program, 99-127  
 special emergency grant in aid fund,  
 283  
 staff, 96  
 Medical training, 21-23, 280-282, 308  
 China, 260-261  
 fellowships, 125-127  
 graduate education in neuropsychiatry, 119-120, 277, 281  
 study of social and preventive medicine, 67, 120-121  
 Memorial Hospital, New York, 8
- Mexico  
 Colegio de México, Mexico, D. F.  
 Center for Historical Research, 299  
 control of insect vectors, 315  
 experimental agricultural program,  
 6, 160-162, 289  
 fellowships, 126, 173  
 grants in aid, 174-175  
 local health services, 320  
 malaria studies, State of Veracruz, 89,  
 311  
 National College of Agriculture,  
 Chapingo, 174  
 National Institute of Anthropology and History, Mexico, D. F., 300  
 National Institute of Cardiology, 118,  
 278  
 National University of Mexico, Mexico, D. F.  
 Center of Philosophical Studies, 301  
 Faculty of Medicine, 118  
 nutrition studies, 313  
 Office of Special Sanitary Service, 318  
 public health training programs, 77,  
 323  
 Secretariat of Agriculture, 160-162  
 typhus, louse control studies, 314, 325  
 Miami University, Oxford, Ohio  
 Scripps Foundation for Research in Population Problems, 215  
 influence of population factors on labor market problems, 295  
 population redistribution, 215,  
 295  
 Michigan State College, East Lansing  
 American and Canadian studies, 303  
 Michigan, University of, Ann Arbor  
 influenza, 313  
 Institute for Teachers of Preventive Medicine, 120-121, 282  
 teaching of medical economics, 282  
 Microfilms, 11, 75-76, 265, 326  
 Middle East Supply Center, 202  
 Milam, D. F., M.D., 57  
 Milatz, J. M., 157-158  
 Military Neuropsychiatry, School of,  
 Fort Sam Houston, Texas, 120

- Miller, Harry M., Jr., 130  
Minnesota, State of, 211  
Minnesota, University of, Minneapolis, 35  
intergovernmental relations — study of the State of Minnesota, 211, 298  
Northwestern historical studies, 303  
program of training for public service, 298  
research in biophysics, 287  
Mississippi  
Coordinated School-Health-Nutrition Service, 319  
Moe, Henry Allen, viii, ix, 51, 52  
Mohr, Otto Louis, 148  
Monkeys, 20, 86, 87  
Montana, University of, Missoula  
regional studies, 237-238, 303  
Montevideo, Uruguay, 77  
Moral and political philosophy, 212-213  
Morgan, Hugh J., M.D., viii, ix, 52, 56  
Morison, Robert S., M.D., 96  
Mosely, Philip E., 178  
Mosquitoes, 16-20, 89-90  
Mount Palomar, California, telescope on, 25-28, 166-168  
Mount Wilson Observatory, 167  
Mountin, Joseph W., 64  
Muensch, Hugo, M.D., 57  
Museums, *see* Libraries and museums  
Myers, William L., viii, ix, 51  
  
NANKAI University, *see* China  
Nanking, China, 78, 90-91, 260  
Nanking, University of, *see* China  
Nashville, Tennessee, 91  
National Academy of Sciences, Washington, D. C., 10, 163-164, 290  
National Archeological Museum, Guatemala, 245-246  
National Buildings Record, London, *see* Great Britain  
National Bureau of Economic Research, New York  
programs of research in finance and fiscal policy, 295  
National Central Library, London, England, 12, 305  
National College of Agriculture, Mexico, 174  
National Committee on Atomic Information, 221  
National Defense Research Committee, 172  
National Health Council, Inc., New York  
coordination of voluntary health agencies, 121-122  
study of voluntary health agencies, 282  
National Institute of Cardiology, Mexico, 118, 278  
National Institute of Economic and Social Research, Great Britain, 295  
National Institute of Health, 21  
National Institute of Public Affairs, Washington, D. C.  
training of personnel for federal services, 295  
National Institute of Sciences, *see* India  
National Museum, Washington, D. C., 93  
National Research Council, Washington, D. C., 42  
American Geophysical Union, general expenses, 290  
Committee for Research in Problems of Sex, 102-104, 280  
fellowships, 127, 173, 283, 289  
National Theatre Conference, Cleveland, Ohio, 305  
National University of Engineering Science, Athens, Greece, 174  
Natural Sciences  
appropriations and payments, 6, 10, 13, 100, 272, 273, 284-291  
fellowships, 171-172, 289  
grants in aid, 173-175, 290  
program, 129-175  
staff, 130  
Near Eastern studies, 228-230  
Nesbitt, Paul, 245  
Netherlands, *see* Holland  
Neurath, Hans, 137

- Neurology, *see Psychiatry*  
 Neurophysiology, 111, 113-114  
 Neuropsychiatry, 114-117, 119-120  
 Nevarez, Roberto, 87  
 Newberry Library, Chicago, Illinois  
     Midwestern culture, 303  
 New Brunswick, Canada  
     Division of Nutrition, 317  
     Division of Sanitary Engineering, 80  
 New Brunswick, University of, Fredericton, Canada, 80  
     studies of history of New Brunswick, 303  
 New Mexico, University of, Albuquerque  
     Latin American studies materials, 302  
 New York City  
     Department of Health, Statistical Service, 319  
     health council, 122  
     Health Insurance Plan of Greater New York, 15-16, 65-68  
 New York Laboratories, *see International Health Division*  
 New York State  
     health insurance, 63, 66  
 New York University, 43  
     College of Medicine, 123, 281  
     Department of Mathematics, 171-172, 289  
     Department of Psychiatry, 278  
     nutrition research, 286  
 New York Zoological Society, 128  
 Nigeria, West Africa, 19-20, 87-88  
 Nitze, W. A., 251  
 Norges Tekniske Hoiskole, Trondheim, Norway, 174  
 North Carolina  
     nutrition studies, 313  
     public health education and school health service, 319  
     syphilis studies, 92, 314  
 Northwestern University, Evanston, Illinois  
     American studies, 37, 237-238, 303  
     historical studies of experiments in European finance, 295  
 Norway, 7, 10  
     Dikemark Mental Hospital, 277  
     economic studies, 206-207  
     fellowships, 126, 219  
     grants in aid, 128, 174-175  
     Ministry of Health, 69, 326  
     Norges Tekniske Hoiskole, Trondheim, 174  
     Norwegian Committee on International Studies, 186  
     Norwegian Royal Department of Church and Education, Oslo, 174  
     State Institute of Public Health, 69, 326  
     Statistical Division, 317  
         *see also* Oslo, University of Nova Scotia  
         local health department, 319  
 Nuffield College, 6, 207-208, 298  
 Nuffield, Lord, 207  
 Nursing education, *see* Public health education  
 Nutrition, 91-92, 312-313  
 OBERLIN College, Ohio  
     Far Eastern studies, 301  
 O'Brien, Daniel P., M.D., 96  
 Office of Scientific Personnel, 174  
 Office of Scientific Research and Development, 172  
 Ogbomosho, Nigeria, West Africa, 20, 88  
 Oklahoma, University of, Norman  
     studies of Southwest, 303  
 Oslo, Norway, 186  
 Oslo, University of, 37  
     development of the humanistic faculty and reform in university administration, 247-248, 307  
     Institute of Economics, 206-207, 298  
     reconstruction of research facilities in natural sciences, 148, 149, 291  
     rehabilitation of Drøbak marine biological station, 148-149  
 Oxford Nutrition Survey, 74, 325  
 Oxford, University of, England  
     college libraries, 305  
 Dyson Perrins Laboratory of Organic Chemistry

- research on hormone synthesis, 287  
 X-ray analysis of molecules, 287  
**Nuffield College**, 6, 207-208, 298  
**Sir William Dunn School of Pathology**, antibiotics research, 154-157, 287  
**Social Studies Research Committee**, 298  
  
**PACIFIC Spectator**, 251  
**Panama**  
 yellow fever studies, 315  
**Pan American Union**, Washington, D. C.  
 preparation of resources of Latin American newspapers and art material, 301  
**Paris, University of**, France  
 grants in aid, medical sciences, 127  
**Paris green**, see Insecticides  
**Parkinson**, Thomas I., viii, 51  
**Parran**, Thomas, M.D., viii, ix, 51, 52, 56  
**Pasteur Institute**, Dakar, Africa, 69, 326  
**Pasteur Institute**, Paris, France, 76  
**Paul**, J. Harland, M.D., 57  
**Pauling**, Linus C., 134-135  
**Pasvolsky**, Leo, 33, 183  
**Patterson**, John T., 143-144  
**Payne**, George C., M.D., 57  
**Peiping**, China, 260, 290  
**Peking First Health Station**, China, 69, 326  
**Penfield**, Wilder, 112  
**Penicillin**, 92, 154-157  
**Pennsylvania**, University of, Philadelphia  
 research in experimental biology, 287  
 research in permeability of red blood cell, 287  
 study of comparative economic development, 298  
**Wharton School of Finance and Commerce**
- Industrial Research Department  
 exploratory program of research in distribution, 298  
 general budget, 298  
 study of war experience in labor relations, 208-209, 298  
**Penrose**, L. S., 117  
*Peoples of Southeast Asia*, 191  
**Perrott**, George St. J., 64  
**Perroux**, François, 220  
**Peru**  
 fellowships, 126, 173  
 grants in aid, 128  
**Institute of Andean Biology**, Lima, 124, 285  
 local health services, 320  
 malaria, 88, 312  
 malaria drug study, 325  
 medical training, 124  
**Ministry of Health**  
 Department of Selection and Training of Personnel, 80  
 Division of Study and Development of State Health Services, 318  
**National Institute of Hygiene**, 318  
 Survey and study of state and local health services, 318  
 yellow fever, 315  
*see also* San Marcos, University of  
**Peters**, Ella I., 83  
**Peterson**, Osler L., M.D., 57  
**Philippines**  
 fellowships, 126  
 grants in aid, 128  
**Institute of Hygiene**, Manila, 321  
**University of the Philippines**, Manila, 127  
**Physics**, 141-142, 153-154, 157-158  
 nuclear physics, University of Chicago, 195  
 nuclear science symposium, Princeton University, 175  
**Physiology**, 152-153  
*see also* Psychiatry  
**Pickels**, Edward G., 57  
**Platt**, Philip, 122  
**Play House Foundation**, Cleveland, Ohio, 306

- Plough, H. H., 144  
 Pochmann, Henry A., 237  
 Poland, 7, 10  
   grants in aid, 128  
   Institute and School of Hygiene,  
 Warsaw, 69, 74, 326  
 public health, 74  
 rehabilitation of library collections,  
   262-264  
 Curie-Sklodowska University, Lublin  
 Medical School, Gdansk  
 National Library, Warsaw  
 School of Business, Warsaw  
 University of Cracow  
 University of Lodz  
 University of Poznan  
 University of Torun (formerly of  
   Wilno)  
 University of Warsaw  
 University of Wroclaw (formerly of  
   Lwow)  
   *see also* Wroclaw, University of  
*Politique Étrangère*, 185  
 Pomerat, Gerard R., 130  
 Pomona College, Claremont, California  
   Far Eastern and Slavic studies, 301  
 Porter, Colonel William C., 120  
 Portugal, School of Nursing, Lisbon,  
   75, 77, 322  
 Prague, Czechoslovakia, 123, 127  
 Prince Edward Island, Canada  
   Provincial Laboratory, 317  
 Princeton University, New Jersey  
   index of Christian art, 305  
   industrial relations research, 295  
   Near Eastern studies, 39, 228-230, 301  
   nuclear science symposium, 175  
   Office of Population Research, 295  
   organic chemistry, 286  
   program in American civilization, 303  
 Principal fund, 5, 53, 272  
 Psychiatry, neurology and physiology,  
   100-118, 276-280  
 Psychology, 103-104, 106-109  
 Public health  
   appropriations and payments, 6, 11,  
 13, 272, 273, 276  
   surveys, 73, 260-261, 308  
   *see also* International Health Division  
 Public health education, 76-79, 320-  
   323, 326  
 China, 260-261  
 fellowships and travel grants, 79, 323,  
   326  
 schools and institutes of hygiene and  
   public health, 78-79, 276, 320-  
   322  
 schools of nursing, 77-78, 276, 322  
 training stations, 76-77, 323  
 Yugoslavia, 124-125  
 Pujade, Pierre, 221  
 Putnam, Persis, 57
- QUARTERLY of Applied Mathematics*,  
 171  
 Quebec, Province of, Canada  
   Division of Health Education, 317  
 Quebec City, 184
- RATCLIFF, Richard, 219  
 Reed, Lowell J., viii, ix, 52, 56  
 Refunds on prior year closed appropria-  
   tions, 310  
 Regional studies, *see* American studies  
 Research and training agencies and ac-  
   tivities  
   humanities, 248-252  
   social sciences, 213-219  
 Research Council of the Department of  
   Hospitals, New York  
   research on chronic diseases, 283  
 Rhode Island State College  
   Conference on Perspectives in Growth  
   and Development, 175  
 Rickard, Elsmere R., M.D., 57  
 Rickettsial diseases, 84, 85  
 Rist, Charles, 199  
 Robinson, Edward, viii, ix, 51  
 Rochester, University of, New York  
   research in genetics, 288  
 Rockefeller Foundation Health Com-  
   mission, 18, 68-70, 74, 276,  
   325-327  
 Rockefeller Institute for Medical Re-  
   search, 84

- Rockefeller, John D., Sr., 44  
 Rockefeller, John D., 3rd, viii, ix, 51  
 Rocky Mountain spotted fever, 84  
 Rodent ecology and control, 315  
 Rome, Italy, 17-19  
 Rosales, J., 246  
 Roscoe B. Jackson Memorial Laboratory, Bar Harbor, Maine  
     construction and equipment of animal quarters, 145-146, 286  
     maintenance of mammalian stock center, 286  
     studies of genetic factors in mammals, 278  
 Rosenblueth, Arturo, 118  
 Rotterdam, Holland, reconstruction studies, 196  
 Royal Institute of International Affairs, London  
     history of the war and the peace settlement, 295  
     preparation of a history of the League of Nations, 33, 192, 295  
     research program, 295  
 Royal Sanitary Institute, London, 76  
 Royal Society, London, 290  
 Royal Society of Medicine, London  
     Central Medical Library Bureau, 11, 75-76, 281  
 Rozeboom, Lloyd E., 93  
 Rumania, 10, 13  
 Rural water standards study, 316  
 Russell, Paul F., M.D., 57  
 Russia, 7, 9, 10-11, 25  
     All-Union Institute of Experimental Medicine and All-Union Institute of Epidemiology, 326  
     *see also* American-Soviet Science Society, Slavic studies  
 Ruzicka, L., 153  
 ST. CATHERINE, Jamaica, 76  
 San Marcos, University of, Lima, Peru  
     Faculty of Medicine, Department of Pathology, 124, 281  
     grants in aid, medical sciences, 127  
 São Paulo, University of, Brazil  
     equipment for research in physics, 288  
     research in physics, 291  
 School of Nursing, 322  
 University Research Fund  
     bibliographical information service, 305  
 Sardinia, 74  
 Saskatchewan, University of, Saskatoon, Canada, 304, 306  
 Sasse, Bruce E., 57  
 Schmidt, Bernhardt, 167  
 Schools and institutes of hygiene and public health  
     *see* Public health education  
 Schotté, Oscar E., 145  
 Scotland, Department of Health for grant in aid, 127  
 Sears, Roebuck and Company, history of, 204-205, 297  
 Secretary's report, 51-53  
 Securities, schedule of, 335-340  
 Sellin, Thorsten, 216  
 Serafimer Hospital, Stockholm, Sweden  
     grant in aid, 127  
 Severinghaus, Aura E., 105  
 Sex, studies on, 102-104  
 Shanghai, universities, 41, 259-260  
 Sheehan, Donal, 123  
 Sir William Dunn School of Pathology, 154-157, 287  
 Skard, Sigmund, 247-248  
 Slavic studies, 39-40, 231-233, 300  
 Smith, Hugh H., M.D., 56  
 Smith, Philip E., 105  
 Smith College, Northampton, Massachusetts  
     drama program, 306  
 Smithburn, Kenneth C., M.D., 57  
 Snyder, John C., M.D., 57  
 Social Sciences, 28-40  
     appropriations and payments, 6, 12, 13, 272, 273, 291-299  
     fellowships, 216-217, 219-220  
     grants in aid, 217-218, 220-221, 293, 296  
     program, 177-221  
     staff, 178

- Social Science Research Council, 42  
 administrative budget, 296  
 books for Europe, 215-216, 296  
 Committee on Social Aspects of  
 Atomic Energy, 194  
 conferences and planning, 296  
 fellowships, 216-217, 293  
 general research projects, 296  
 grants in aid, 217-218, 296  
 study of various methods of sampling,  
 290, 296  
 research in economic history of the  
 United States, 296  
 Society for Experimental Biology, Cam-  
 bridge, England  
 Symposium on the Biology and Bio-  
 chemistry of Nucleic Acid, 175  
 Soong, T. V., 38  
 Soper, Fred L., M.D., 56  
 South America  
 local health services, 80, 320  
 malaria, 88-90, 312  
 respiratory virus research, 313  
 schools and institutes of hygiene and  
 public health, 78, 321  
 schools of nursing, 77, 322  
 state health services, 80, 318  
 yellow fever, 86-87, 315  
 Southern California, University of, Los  
 Angeles  
 School of Government, 298  
 Southern United States  
 study of electoral process, 210  
 work of General Education Board,  
 45-47, 261-262  
*Southwestern Historical Quarterly*, 238  
 Spectroscopic biology, 157-158  
 Spelman Fund of New York  
 work in public administration, 296  
 Sproul Observatory, 164-166, 291  
 Sproul, Robert G., viii, ix, 51  
 Stamp, Lord, 32  
 Stampar, A., 125  
 Stanford University, Palo Alto, Cali-  
 fornia  
 biochemistry research, 286  
 Far Eastern and Slavic studies, 301  
 Food Research Institute, 33, 201-202,  
 296  
 Hoover Institute for Slavonic Studies,  
 39, 230-232, 301  
 Hoover Library on War, Revolution,  
 and Peace, 230  
 immunochemistry research, 150-151  
 Pacific, Eastern Asia and Russian  
 studies, 301  
 School of Humanities program, 307  
 Stanley, W. M., 170  
 State and local health services, 79-84,  
 325  
 local services, 319-320  
 state services, 316-319  
 State University of Iowa, Iowa City  
 studies in literary criticism, 303  
 Statistical analyses of records of certain  
 specific diseases, 316  
 Steinbach, H. B., 152  
 Stephan, Frederick F., 178  
 Stevens, David H., viii, ix, 51, 224  
 Stewart, Walter W., viii, ix, 51, 52  
 Stockholm, University of, Sweden  
 Far Eastern Studies, 39, 233-234, 302  
 research in chemical physiology and  
 embryology, 288  
 Stone, Richard N., 203  
 Strand, Kaj Aage, 165  
 Stratton, J. A., 169  
 Strode, George K., M.D., viii, ix, 51,  
 56  
 Sturtevant, A. H., 135  
 Sulzberger, Arthur Hays, viii, ix, 51  
 Svedberg, The, 141-142  
 Swarthmore College, Pennsylvania  
 Sproul Observatory, 164-166, 291  
 Sweden, 7  
 Academy of Sciences, Stockholm  
 Research Institute for Physics, 286  
 fellowships, 126, 219  
 grants in aid, 128, 175  
 Institute of International Affairs,  
 Stockholm, 189-190, 294  
 Karolinska Institute, Stockholm  
 research in biochemistry, 136, 285  
 research in neurophysiology, 277  
 Medical Nobel Institute, equipment

- for research in biochemistry and cell research, 285
- Lund, University of, 279
- Serafimer Hospital, Stockholm, 127
- State Institute of Public Health, Stockholm, 79  
*see also* universities of Upsala and Stockholm
- Swift, Harold H., viii, 51
- Switzerland, 7  
grants in aid, 128, 175  
*see also* Geneva, Zurich
- Syria  
American University of Beirut, 127  
grants in aid, 128
- Syphilis studies, 92, 314
- TACUBA, training station, Mexico, 77, 323
- Taliaferro, William H., 89
- Tavistock Clinic, London  
research and teaching in psychiatry, 109-110, 278
- Taxonomic center, 316
- Taylor, Archer, 252
- Taylor, George W., 208-209
- Taylor, Richard M., M.D., 57
- Technical University, Delft, *see* Holland
- Telescope on Mount Palomar, California, 25-28, 166-168
- Tennant, Mary Elizabeth, 56
- Tennessee, University of, Memphis  
neurophysiological research, 279  
teaching and research in psychiatry, 279
- Tennessee Department of Public Health, 91, 313, 314
- Testament to the West*, 212
- Texas, *Handbook of*, 238-241
- Texas, University of, Austin  
Department of Zoology, research in genetics, 143-144, 288
- Texas State Historical Association, Austin  
Southwestern history study, 37, 238-241, 303
- Theiler, Max, M.D., 57
- Thompson, Norma S., viii, ix, 51
- Thompson, Warren, 215
- Tinbergen, J., 196
- Tissue structure, 142-143
- Toronto, University of, Canada  
research in nutrition, 91, 288, 312
- School of Hygiene, 78, 320
- School of Nursing, 276
- Toynbee, Arnold, 33, 189
- Treasurer's report, 268-340
- Trinidad and Tobago  
malaria, 88, 311
- Trondheim, Norway, 174
- Tsing Hua University, *see* China
- Tuberculosis, 314
- Tufts College, Medford, Massachusetts  
psychiatry in the study of sociology, 296
- Tufts College Medical School, Boston, Massachusetts  
research in brain chemistry, 278
- Tulane University, New Orleans, Louisiana  
Latin American studies materials, 301
- Turkey  
School of Hygiene, 321
- Turner, T. B., 92
- Tyler, Albert, 135
- Typhus fever 85, 92
- UGANDA, Eastern Africa, 19, 87
- United Nations  
Charter, 183  
Documents, 193, 297  
Educational, Scientific and Cultural Organization, 13  
Information Office, 19, 33, 192-193, 297  
World Health Organization, 14
- United Nations Relief and Rehabilitation Administration, 74, 202, 264
- United States  
appropriations, 6  
diphtheria, 92-93, 311  
effect of war on science, 23-25  
fellowships and travel grants, 125-127, 173  
grants in aid, 128, 175

- United States—Continued  
 infective hepatitis, 83–84, 311  
 influenza, 83–85, 313  
 international studies, 32–33, 182–193  
 malaria, 88–90, 312  
 medical training, 21–23  
 mental hygiene, 312  
 nutrition, 91–92, 313  
 rabies, 313  
 regional studies, *see American studies*  
 rodent ecology and control, 315  
 schools and institutes of hygiene and  
 public health, 321–322  
 state health services, 319  
 syphilis, 92, 314  
 tuberculosis, 314  
 typhus fever, 85, 92  
 work of General Education Board,  
 45–47, 261–262
- The United States in World Affairs*, 187
- United States Army, Commission on  
 Tropical Diseases of the Board  
 for Investigation and Control of  
 Influenza, 325
- United States International Book As-  
 sociation, 263
- United States Navy  
 study of infective hepatitis, 325
- United States Public Health Service, 64
- University College, London, England  
 research in genetics, 286  
 research in physiology, 278
- University College Hospital, 118
- Upsala, University of, Sweden, 37  
 biochemistry of fatty acids, lipoids  
 and proteins, 288  
 physical-chemical properties of pro-  
 teins, 141–142, 288  
 surface chemistry of red blood cell and  
 mechanism of gastric acid forma-  
 tion, 288
- Uruguay  
 fellowships, 126
- Ministry of Public Health, Montevideo  
 Research Institute of Biological Sci-  
 ences, 286
- University Nursing School, Monte-  
 video, 77, 323
- Utah, University of, Salt Lake City  
 collection and use of historical source  
 materials, 304
- School of Medicine, research fund, 282
- Utrecht, State Institute of Public  
 Health, Holland, 327
- Utrecht, University of, Holland  
 biochemistry of growth substances,  
 151–152, 288  
 grants in aid, medical sciences, 127  
 spectroscopic biology, 157–158, 288
- VALLERY-Radot, Pasteur, 119
- van de Kamp, Peter, 165
- Vanderbilt University, Nashville, Ten-  
 nessee
- School of Medicine  
 Division of Nutrition, 91, 313  
 support of liaison service between  
 psychiatry and surgery, 279
- Venezuela  
 Division of Malaria, 90, 312  
 fellowships, 126, 173  
 National School of Nursing, Caracas,  
 77, 323
- Veracruz, Mexico, State of, 89
- Villavicencio, Colombia, 89–90
- Virginia, Commonwealth of, 211–212
- Virginia, University of, Charlottesville  
 biography of Thomas Jefferson, 304
- Bureau of Public Administration, 35,  
 211–212, 298
- Virus diseases, 83–85
- WAKSMAN, S. A., 170
- Walters, Frank, 33, 192
- War  
 activities of American Council of  
 Learned Societies, 248–250
- Council on Foreign Relations, *War*  
*and Peace Studies*, 187
- effect of on science, 23–25
- effects of World War II on food and  
 agriculture, 201–202
- history of World War II, 187–188,  
 189–190

- malaria control, 16-19  
 Waris, Heikke, 221  
 Warren, Andrew J., M.D., 56  
 Washburn, Alfred, 107  
 Washington University, St. Louis, Missouri  
     research in carbohydrate metabolism, 289  
     research in experimental embryology and general physiology, 152-153, 289  
     research in neurophysiology, 279  
 School of Medicine  
     maintenance, 282  
     teaching of preventive medicine, 282  
 studies of Western migrations in the United States, 304  
 support of Department of Neuro-psychiatry, 279  
 use of cyclotron, 289  
 Washington, University of, Seattle  
     Far Eastern and Slavic studies, 302  
 Watson, Robert B., M.D., 57  
 Weaver, Warren, viii, ix, 51, 130  
 Webb, Vanderbilt, viii, ix, 51  
 Webb, Walter Prescott, 238  
 Weir, John M., M.D., 57  
 Wells, Clifford W., M.D., 57  
 Wheeler, Charles M., 57  
 Whelpton, P. K., 215  
 Whitman, Loring, M.D., 57  
 Wiener, Norbert, 169  
 William and Mary, College of, Williamsburg, Virginia, 35  
     effects of war on Hampton Roads area, 292  
 Willits, Joseph H., viii, ix, 51, 178  
 Wilson, D. Bruce, M.D., 57  
 Wilson, Perry W., 158-159  
 Wisconsin, studies in the economy and culture of, 236-237  
 Wisconsin, University of, 35, 37  
     American studies, 235-237, 304  
     research in biochemistry of symbiotic nitrogen fixation, 158-160, 288  
     research in housing, 218-219, 298  
     research in nutrition, 288  
     research in physical chemistry, 288  
 Wislocki, George B., 142-143  
 Wittfogel, K. A., 234-235  
 Woodrow Wilson Foundation  
     League of Nations documents, 244-245, 305  
 Woodward, E. L., 220  
 Wright, Daniel E., 57  
 Wright, J. J., 92  
 Wright, Louis B., 252  
 Wroclaw, University of, Poland  
     grants in aid, medical sciences, 127  
 YALE University, New Haven, Connecticut  
     Conference on Graduate Training in Pharmacology, 128  
 Far Eastern studies, 302  
 Grants in aid, medical sciences, 128  
 Institute of International Studies, 299  
 Labor and Management Center, 209-210, 299  
 Laboratories of Primate Biology, 291  
 research in enzyme chemistry, 289  
 School of Medicine, development of psychiatry, 280  
 Yellow fever, 19-20, 314-315  
     control and investigation, 86-89  
     vaccine production, 70, 84, 325  
 Yenching University, *see* China  
 Yerkes, Robert M., 102  
 Yugoslavia  
     fellowships, 126  
     grants in aid, 128  
     Institute of Hygiene, Zagreb, 69, 74, 326  
     medical training, 124-125  
     School of Nursing, Zagreb, 70, 74  
     University of Ljubljana, 127  
     University of Zagreb, 11  
         grants in aid, medical sciences, 127  
         public health training, 125, 282  
 ZAGREB, University of, *see* Yugoslavia  
 Zurich, University of, Switzerland  
     Institute for Brain Research, 114-117  
         279  
 Zworykin, V. K., 170