

The
Rockefeller Foundation

Annual Report
1947

THE ROCKEFELLER
FOUNDATION

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¹ Elected April 6, 1948.

² Term expired April 6, 1948.

³ Until June 30, 1948 (retirement).

⁴ To assume office July 1, 1948.

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, 1947, to December 31, 1947, 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 1947

PRESIDENT'S REVIEW

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PRESIDENT'S REVIEW

THE YEAR IN BRIEF

DURING 1947 the appropriations of The Rockefeller Foundation amounted to \$23,413,615. This figure, exceeding by nearly \$4,000,000 the figure of 1946, represents the largest annual amount appropriated in the 35 years of Foundation history. Included in the 1947 total is a single grant of \$10,000,000 to the China Medical Board, Inc., for the support of the Peiping Union Medical College. The income of the Foundation from investments during 1947 was \$10,011,756. This income was supplemented by a balance of \$221,431 remaining from the previous year, by lapses and refunds from previous years amounting to \$876,448 and by a transfer from the Principal Fund of \$20,000,000.

The Charter authorizes the Trustees to "expend the income and principal of the funds of the Corporation in such manner as in the judgment of the Trustees will best promote its objects." In accordance with this provision the Trustees, since 1913, have appropriated a total of \$295,896,340 from income and, in addition, a total of \$118,010,728 from capital. The transfer in 1947 of \$20,000,000 from the Principal Fund, although only part was appropriated, is the Foundation's largest allocation of capital in any one year.

The highest book value of the Principal Fund was \$171,204,624 in 1921. As of December 31, 1947, the book value of the Principal Fund was \$118,071,816; the market value, \$198,229,909.

The appropriations for 1947 were distributed for the most part in seven major categories, roughly as follows:

Public Health	\$2,250,000
Medical Sciences	1,500,000
Natural Sciences	1,700,000
Social Sciences	3,000,000
Humanities	1,500,000
General Education Board	1,500,000
China Medical Board, Inc.	10,000,000

A detailed statement of the appropriations made in 1947 appears at the conclusion of this report, beginning on page 275. Of the money appropriated during the year, including the grants of \$1,500,000 to the General Education Board for its program in this country and of \$10,000,000 to the China Medical Board, Inc., for its program in the Far East, 39 per cent was for work in the United States and 61 per cent for work in other countries.

CHALLENGE AND RESPONSE

All centuries are dangerous, said Professor Whitehead; and he added: "It is the business of the future to be dangerous." This was written in 1925, and certainly there can be no question of the accuracy of the prognosis as it applies to our generation. The challenge of today's crisis is the most commanding which Western society has ever faced. We have always known that knowledge was a perilous possession, because it could equally well work in the wrong direction; but the knowledge that has been placed in the hands of this age is so supremely

capable of misuse — and misuse could so easily reduce the hopes and monuments of men to drifting dust — that the impact of the challenge finds us confused, uncertain and fearful.

Like all frightened people everywhere and in all ages, our first reaction is physical force, and our instinctive faith is given to military power. Let us grant at once that in this unprecedented crisis a measure of physical force is essential. We do not live in a utopia, and it would be suicidal to act as if we did. Equally suicidal, however, is the assumption that the crisis can be met solely on the level of force, or that mechanisms, power and dollars constitute the essential elements of the solution.

The present is one of the supreme moments of challenge, in which, as Toynbee says, the character of our response determines the chances of survival. The past is littered with the wreckage of nations and empires which tried to meet the crises of their times by physical means alone. Our response today cannot be confined to this lower level. Unless we can rise to greatness and lift our answers to an intellectual and ethical plane, our fate will be the fate, not only of the nations that preceded us in history, but of all species, whether birds or brontosaurs, which specialized in methods of violence or defensive armor.

One of the difficulties in putting our response on a higher level of human searching is our emphasis here in America on the task of raising the material standards of living. In this ambition we have been incomparably successful; our productive and consuming capacity is greater than that of any other country in the world. But the result is that our principal standards are standards of quantity: we have more of everything than

anybody else — automobiles, refrigerators, radios, railroads. Consequently our vision is not so much of a world peopled by wise and honorable men as it is of a world in which "every family has its automobile and every pot its chicken." We have too easily made the assumption that other values would automatically follow our material well-being, that out of our assembly lines and gadgets the good life would spontaneously be born.

One of our leaders recently said that Europe could prosper in the long run only as she adopted what he called the American philosophy of consumption. This uncritical identification of consumption with social value is, of course, not characteristic of this country alone or of this age alone; but the extent of the confusion in America today is disquieting. Although our religion and ethics have long tried to enlighten us, many of us are still only dimly aware that purchasing power is not the measure of a great society, and that wisdom and cultural values are not the inevitable consequences of an increased capacity to consume.

It is, of course, obvious that a solid material foundation is an essential basis for a high civilization; but it is a basis, not a superstructure. Our tendency is to confuse one with the other, to mistake the foundations for the towers and turrets of the new city. There is a spiritual hunger in the world today that is not being satisfied by American exports. "God knows we need food and coal to survive," said a European delegate to Lake Success, "but unless America can take the lead in providing a vital faith, in giving us a song that mankind can sing, all her exports will merely postpone the day of reckoning, and the world will die anyway."

Another aspect of the difficulty which we face in

placing on a higher level our response to the challenge of our time, is our superstitious reverence for the physical sciences. They have become sacrosanct — the dispensers of the gifts of life. The doctrine that "civilization can be bred to greatness and splendor by science" is widely accepted. Even our universities have succumbed to this twentieth century worship of methods which give mastery in the physical world. In contrast with the money available for the humanities and the social studies, far greater sums are today being allocated to the physical sciences by our educational institutions than ever before. From government and business, as well as from college budgets, money in increasing amounts is being poured into the teaching of chemistry and physics. "This is the Century of Science," one characteristic college announcement proclaims, "and we must orient our students to the prevailing interest of their time." A prominent eastern university reports its enlarging plans with these words: "In the face of the increasing impact of science on our society it is widely agreed that an essential aim of general education is to impart to the university undergraduate an appreciation of the methods of the sciences." Of course, a decent obeisance is always made in the direction of the humanities and the social studies. The fact remains, however, that in terms of endowment, research facilities and teaching staffs, these studies are far outdistanced by the physical sciences, and the gap is growing wider.

But the gap should be closed rather than widened. We cannot escape the obligation, in this scientific age, to comprehend science; but in the supreme question which faces our generation, physics and chemistry and engineering have no answers for us. They are ethically neutral. They are preoccupied with physical matter.

They can give us more horsepower; only the naïve, however, will claim that horsepower can develop within itself the means by which our runaway technologies can be brought under control. They can help more men to better health and longer life; but they have little relationship to the problem of discovering a new set of human purposes, or to the art of human relations, or to the winning of social and moral wisdom, upon which peace and successful government depend.

It is scarcely necessary to acknowledge our vast indebtedness to science in giving us the methods and patterns of research in human relationships. Every contribution of science to the problems of society is to be welcomed. But the enlightenment of science is bringing with it a tendency to reject the limitations of science. To expect that exact measurement and exhaustive definition will relieve us of the necessity of ethical inquiry, or that the meaning and values of human life will somehow or other crystallize as physics crystallized around the concepts of mass and energy, is a form of superstition as deadly as any we have known.

The issues of our time and of human destiny will be determined, not at the physical, but at the ethical and social level. Material power and dollars and military ascendancy may preserve us temporarily; but the dynamic tensions of our society can be relieved only by moral and social wisdom, and that kind of wisdom cannot be precipitated in a test tube nor can it be won by the brilliant processes of nuclear physics.

In the same essay which was quoted at the beginning of this section, Professor Whitehead went on to say: "It must be admitted that there is a degree of instability which is inconsistent with civilization. But on the whole, the great ages have been the unstable ages."

This is the ray of hope that lightens the darkness of the present hour. It is not in times of security that men build a Chartres Cathedral or write a *Hamlet* or push their boats across an unknown ocean to discover a new continent. Oddly enough these achievements occur in years of instability.

Danger and hazard mark our age today. But in Professor Whitehead's phrase, it can be a great age, like other ages that have been born out of fear and challenge. Its greatness, however, if achieved, will consist in its search for an enlightened humanism and for rational and ethical values that will rise above our time as the spires of Chartres rose above the twelfth century.

THE IMMEDIATE TASK AND THE ULTIMATE GOAL

In 1947 representatives of The Rockefeller Foundation visited practically every country in the world with the exception of Bulgaria and the Soviet Union. Visas to enter those two countries could not be obtained, nor was it possible to establish contact with their scholars and scientists. The conflict of ideologies — what Gibbon called "the exquisite rancor of theological hatred" — divides the world today in bitter partisanship, just as Europe was divided by its religious wars of the sixteenth century. As a matter of fact, ideologies have always divided mankind; the rifts are centuries old; there has never been one world. What we are attempting today is something that has never in recorded history been accomplished. We have barely begun on what is unquestionably the noblest as well as the most discouraging task which statesmen and nations have ever undertaken.

If the aim were to iron out all the differences which exist among men — to achieve a utopia of unruffled unanimities — it would be fatuous even to begin it. The

world of the future — if any world survives — will be a world of diversity, held together by a conception of common interests. It will be a world in which many political faiths and economic creeds are tolerated and widely differing points of view fertilize each other for the common good.

Our challenge in this generation is to discover the common interests, the terrain of possible collaboration, the overlapping areas of curiosity and sympathy, of aspiration and mutual advantage, that bind the human race together regardless of ideologies or boundary lines. The search for these rallying points of unity, the development of new techniques and areas of cooperative action where ideas and experience can be pooled and combined — this is the immediate task; this comes first; this is the foundation of the ultimate structure of a united society.

The activities of the World Health Organization of the United Nations furnish a pertinent illustration; for health is something that all men desire and there is no limited supply for which nations must compete. Public health work carries no threat to anybody, anywhere. Cancer and scarlet fever have no political ideology. There is no Marxian method of eliminating gambiae mosquitoes as distinguished from a Western democratic method. The principles of sanitary engineering do not bear a Russian or an America label. No difference exists between tuberculosis in the Soviet Union and tuberculosis in the United States. Infantile paralysis is the same thing in Moscow and in Washington, and human sorrow is no less poignant in one city than in the other. The world of disease and misery is not divided; it is a common world. In terms of human suffering the world is truly and tragically one world.

What is true of medicine and public health is true also

in the fields of science and humanism. There are no French or English enzymes, no German or American electrons. The second law of thermodynamics is not the property of any group or nation. Tolstoy and Shakespeare and Beethoven and Tschaikowsky belong to the world, just as the spiritual ideals of Gandhi have now become the heritage of mankind. These are some of the common interests whose waves are breaking over the old flag-marked boundaries and are bringing to the world a conception of civilization and of the intellectual life of man as a cooperative achievement.

In spite of all evidence to the contrary the things that divide the world are trivial as compared with the things that unite it. The mutualities of human beings everywhere far exceed their divergencies. In all the countries which representatives of the Foundation have visited over these recent years, one outstanding fact has emerged: the people are dominated by a passionate hope for peace, security and a better life. They seek a world in which men may grow in strength and dignity. They want no world in which war periodically tears to pieces the bright promise of the future. That is the pattern of thinking and planning everywhere. Men differ as to the means by which these ends are to be secured, but as to the goal itself there is little diversity of opinion.

This substantial unanimity of aim, sharpened and oriented in our time to a new point, is at least a gleam of hope in a dark age. Mankind is conscious as never before of common roots and common potentialities, of common basic desires and appetites and the common skills required for their satisfaction. A recognition of kinship exists which wars and clashing ideologies can blur but cannot eliminate. Slowly but perceptibly there is developing a conception of the intermeshed interests of men, of the universality of human need, of the single destiny

that awaits life on this planet, whether it be good or evil. This is the principle that lies behind the United Nations, the incentive that gives moral and intellectual greatness to the work of this generation in clearing the ground for the new advance.

It is idle, of course, to minimize the towering difficulties that confront us or the heart-breaking frustrations through which we shall live in the years immediately ahead. But we must push toward the ultimate goal of world unity with iron determination and fanatical patience. We must believe in it against all discouragements, against all failures, against all betrayals. There is indeed nothing else we can do. For the long pull there is no alternative. Or rather, the only alternative involves a price in terms of cosmic disaster which, unless the world is overwhelmed by a Gargantuan madness, it will not consent to pay.

Benjamin Franklin, writing in 1789, said: "God grant that not only the Love of Liberty, but a thorough Knowledge of the Rights of Man may pervade all the Nations of the Earth, so that a Philosopher may set his Foot anywhere on its Surface, and say, 'This is my Country.'"

That was the dream of 160 years ago; that was the faith that inspired our forefathers as they hammered out the larger loyalty of the federal union; and today as we face the necessity of building that loyalty on even wider foundations, we must not let the song die on our lips. It is not the mistakes of our idealists, but the cynicism of our realists that will defeat us.

EUROPEAN LABORATORIES AND ISOLATION

Since V-J Day The Rockefeller Foundation has appropriated \$5,584,469 for various activities in the

war-crippled countries of Europe. The aim has been twofold: first, to get research started again by providing equipment or support to a few of the universities, libraries and research centers; and second, through conferences and aid in procurement of scholarly journals, to reestablish the contacts of these institutions with each other and 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 largest grants were made in Great Britain, France, Denmark, Holland, Norway, Sweden and Switzerland, with smaller grants in nine other countries.

It is easy to exaggerate the significance of what has been accomplished. One has only to see the vast, unanswered needs in the way of buildings, books, periodicals and equipment to realize the utter inadequacy of a sum like \$5,000,000 in restoring Europe to anything approaching its former place in the intellectual life of the world. The situation is far beyond the capacity of private funds. In scattered locations such funds can ameliorate some of the difficulties, but the need is so universal and so overwhelming that it can be met only by governments or international agencies. Often the sums required are relatively small — a few dollars for chemicals to continue some piece of laboratory work, or two or three hundred dollars for essential equipment, or money for books and periodicals to enable a particular scientist or scholar to discover what his colleagues in other countries have been doing, or for an opportunity for him to consult with them in their universities and laboratories. But the aggregate of such sums is formidable, and a private agency with limited funds can do hardly more than palliate the evil. Moreover, palliation

may be an evil in itself. To the extent that it lessens the difficulty, it tends to lessen the responsibility where the real responsibility undoubtedly rests: on governments and on the international agencies concerned.

The situation is further complicated by the deepening crisis in international monetary relations. In many countries at the end of 1947, research workers, even when they had funds in their own currencies, could not obtain the materials, equipment, books and periodicals from the few countries — typically the hard-currency countries — that were able to supply them. More than ever, travel essential to research became restricted, and around the world a new intellectual fog has been settling down, as the advance of knowledge and understanding has been curtailed by currency control. And an intellectual fog, if it becomes dense and general, can be more baffling and stifling than any tangible barrier.

The point cannot be too often stressed that the health of the intellectual life of the world depends upon the free and unhampered exchange of ideas and personnel between universities and research institutions in all countries. Scientific growth is almost invariably the result of cross-fertilization between laboratories and groups in widely separated parts of the world. Achievement, more often than not, is the result of the sustained thinking of many minds in many countries driving toward a common goal. The creative spirit of man cannot successfully be localized or nationalized. Ideas are starved when they are fenced in behind frontiers, and barricaded research in the long run can result in intellectual stagnation.

This is why the heavy concentration in the United States of research in atomic physics is unfortunate. The grim necessities of security seem for the time being

to make any other course impossible, but we must face the fact that from the standpoint of the growth of knowledge, it is an unhealthy arrangement. All knowledge is so interlocked that we cannot control research on the destructive aspects of atomic energy without at the same time interfering with world-wide research on its beneficent possibilities. In the harnessing of forces which may bring incalculable benefit to mankind, knowledge is retarded through lack of cross-fertilization, and the advance into the unknown runs the risk of being slowed down because the intellectual air is too thin to breathe. In the history of modern science no single country by itself has ever had the intellectual resources or the imagination to bring to full fruition all the potentialities of a new idea.

Equally unfortunate is the growing isolation of the scientists and scholars of Eastern Europe. The Soviet Union, for example, has long had distinguished mathematicians. Her work in biomedicine has been imaginative and stimulating. But how can these workers and scientists maintain the high level of their creative research if they are not allowed by their government to have direct and intimate relationship with what is being done in these same fields in other parts of the world? To speak of "bourgeois mathematics" or "capitalistic medicine" is to use terms which, at least to a Westerner, are meaningless. The truth or falsity of a mathematical formula does not depend on latitude or longitude, and the effectiveness of penicillin against disease has nothing to do with economic theory. The Soviet Union is planning the restoration of the great Pulkova Observatory near Leningrad and of Simeis in the Crimea, both of which were totally destroyed in the war. But what kind of astronomy can be developed in the Soviet Union if

her astronomers are isolated from contact with their fellow scientists and observers elsewhere? The stars in their courses do not look down on Russia alone. The intellectual and cultural life of men cannot without impoverishment be walled in behind national boundaries. Isolationism is a blight which undermines the vitality of everything it seeks to preserve.

THE PROBLEM OF GERMANY

In 1947 Robert J. Havighurst of the faculty of the University of Chicago made an extensive study for The Rockefeller Foundation of the present situation in Germany in relation to universities, primary and secondary schools, libraries, youth problems and policies, teacher training, contacts with the outside world and so on. With the cordial cooperation of the Department of State and the American Army authorities he was able to carry on his survey in the American, British and French zones, and he made one trip to Leipzig in the Russian zone.

It is impossible to do more than summarize very briefly the observations and recommendations of his voluminous report. The first vivid and startling impression which a visitor receives is the extent of the poverty of Germany. An American has great difficulty in understanding a German today, for he lives at one end of the scale of plenty, while the German lives at the other end. To the German, hunger is a constant companion. Not until his standard of living is raised again to a decent level can the German possibly contribute to the creation of a peaceful, democratic society.

Equally difficult for an American to grasp is the sense of utter isolation which affects many men of good will in Germany — men who suffered but survived in Nazi

concentration camps, and others who were passively resistant to fascism. These people now are taking the lead in the attempt to bring Germany back into the family of nations. Since 1933, however, they have been so completely divorced not only from the rest of the world but also from their fellow men in Germany, that they have come to wonder whether there is any reality outside of the terror and the ruin they have known in their own country. Another kind of isolation affects the young people, who have grown up under Hitler and know no other kind of life or thinking.

Yet the basic foundations for a peaceful and productive democratic society are present in Germany today. These foundations can be listed as follows: (a) leaders who have an antifascist record and who want to cooperate with other governments in a strong international organization, (b) a developing realization on the part of the German people of the evils of the Nazi regime, (c) the influence of the churches and the labor unions in holding people together and in disciplining them for orderliness and stability, (d) a working population with a high degree of skill and technological training.

On the assumption that Germany is allowed to regain a considerable measure of productivity, there would seem to be at least two prerequisites essential to the development of a democratic society. The first is the restoration of communication between the Germans and the people of other countries. The wall of isolation which has tended to make Germany one vast prison must be thrown down, and ways must be opened for the free flow of ideas, through books and journals, films, radio and works of art, and through the interchange of personnel in various types of activities. The second pre-

requisite is the development of younger leaders who know the world outside of Germany. Young men and women from the universities, labor unions, youth organizations, newspapers, churches and industries must breathe the air of other countries and learn how people in those countries live and think.

These steps are no less needed in Austria and Italy, as well as in all the countries whose people have been cut off from free and natural intercourse with the people of other nations.

In addition to its regular European program, of which mention has already been made, the Foundation in 1947 set aside \$500,000 for work in the field of what might be called European reconstruction. Illustrating the type of activity contemplated by this grant, three or four appropriations may be cited. The sum of \$120,000, to be spent over a two and a half year period, was given to the University of Chicago to set up an American faculty at the University of Frankfurt. From six to ten university professors from Chicago will be constantly in residence at Frankfurt, each professor serving for at least six months. They are being selected primarily from the fields of the social sciences and the humanities, specifically in American culture and history, English language and literature, sociology, political science, psychology, American public law, international law and philosophy. Their primary concern will be to work with young Germans who intend to follow academic careers, but they will also give general courses and will be available for lectures at other German universities. Each professor will be released from his university duties at Chicago for two quarters in order that he may adequately prepare himself prior to going to Germany for the task before him.

Another grant, in the amount of \$69,000, to be spent over three years, was given to the Germanistic Society of America for subscriptions to scholarly journals and periodicals for 15 German and 3 Austrian university libraries. In addition, \$9,000 was appropriated for medical literature in the same institutions. These periodicals and books are now being delivered.

Further grants were made to enable Professor Eduard Heimann, an economist on the staff of the New School for Social Research, to give courses at Göttingen and Hamburg; and Karl Brandt, an agricultural economist from Stanford University, will go to Heidelberg. The sum of \$25,000 was appropriated to Columbia University to bring to Great Britain, the United States and Canada leading German personnel attached to German radio stations. It is believed that the establishment of German radio as a public service, free from political control, will be facilitated immeasurably by acquaintance with the rights and responsibilities of British, American and Canadian radio in their educational, informational and entertainment functions. Plans are also under way to provide this same type of external contacts for German journalists, and it is hoped that similar arrangements can be developed for leaders of youth organizations, labor unions, churches and industries.

The ancient Greeks had a curious law on their statute books. It dealt with monuments celebrating the victories of war. Such monuments were permitted, and the defeated enemy was forbidden to tear them down; but the victor was not allowed to repair them. Moreover, the monuments had to be built not of stone but of wood. In commenting on this legislation Plutarch remarks: "It would be invidious and malignant that we men should ourselves repair and renew the monuments of

hatred towards our enemies when time is making them dim."

MEDICINE IN CHINA

The largest grant which The Rockefeller Foundation made in 1947 was an appropriation of \$10,000,000 to the China Medical Board, Inc. This represents one of the Foundation's oldest interests. Created in 1914 as an operating division of the Foundation, the China Medical Board was responsible for the erection and development of the Peiping Union Medical College, one of the leading centers of medical training in the world. This school has become the symbol and synonym for high quality in professional education in China. In the 20 years of its operation from 1921 until it was closed by the Japanese following Pearl Harbor, it made a distinguished contribution not only in advancing modern medicine in China, but in helping to establish in the Far East the value of scientific method and inductive reasoning. In this sense it represented perhaps the best gift that America could offer to China.

Over 40 years ago, in a lecture at Stanford University, William James said that a college should be a place of "intellectual ferment." That phrase describes with vivid accuracy the institution in Peiping. During the period of its operation less than ten of its more than 300 graduates went into private practice; all the others were absorbed in medical teaching posts or governmental medical positions. They had been exposed to an intellectual ferment and they had a new gospel to preach across the length and breadth of China. It was the gospel of modern medicine and the conception of what it could do for the millions of people who had never known

it. Today six of the national medical schools of China are under the leadership of graduates of the Peiping institution, and six other medical schools are headed by individuals who, although not graduates of the college, spent many years as members of its staff.

In 1928 the China Medical Board, through which the Foundation had supported the Peiping Union Medical College, was incorporated under the laws of the State of New York as a separate entity, and the title to the Peiping property was transferred from the Foundation to this new body. In the same year \$12,000,000 was given by the Foundation to the China Medical Board Inc., as an endowment fund, in the hope that while current budget subsidies from the Foundation would undoubtedly be necessary over a period of years, receipts from Chinese sources might ultimately take their place. This hope had not materialized when the United States entered the war in 1941.

When the buildings of the Peiping Union Medical College were recovered from the Japanese in 1945, although no material structural damage had been suffered, considerable equipment had disappeared and the lack of maintenance and upkeep over the years had resulted in serious deterioration. In 1946 the Foundation sent a commission to China consisting of Dr. Alan Gregg of the Foundation staff, Dr. Harold Loucks of the China Medical Board, Inc., and Dr. C. Sidney Burwell, dean of the Harvard Medical School. This commission reported early in 1947, and as a result of its recommendations a final appropriation of \$10,000,000 was made to the China Medical Board, Inc., bringing its endowment fund to a total of \$22,000,000. Including this endowment fund, the Foundation's total expenditures for the erec-

tion and maintenance of the Peiping Union Medical College have been \$44,947,325, the largest contribution which the Foundation has ever made to a single project. This must necessarily be the conclusion of Foundation grants for this particular purpose.

It may seem an odd moment in the history of the world, and particularly in the history of China, to make a fresh investment in the development of modern medicine in that unhappy country. But medicine, as we have already pointed out, is not a matter of political ideologies or flags or marching armies. It is interesting to note that the graduates of the Peiping Union Medical College are serving the populations on both sides in the tragic war that is now decimating China. They are bringing their healing techniques not only to needy men and women but in a deeper sense to a human society that is desperately sick. In dark hours like these it takes perhaps a leap of faith to believe that medicine can be one of the bridges across the gulf that separates this frightened present from a saner and better-balanced future. We shall, of course, need other bridges, but modern medicine, bringing us a conception of common human need that overrides our irrational and suicidal differences, can surely help.

Meanwhile the Peiping Union Medical College has been reopened, although under limiting conditions. The China Medical Board, now a completely independent organization, with its own trustees and officers, is empowered by its charter to extend financial support not only to the Peiping Union Medical College but to other like institutions in the Far East or even, indeed, in the United States. However, as long as opportunity remains for effective work in the college in Peiping, its first responsibility lies there.

THE WIDENING HORIZONS OF PUBLIC HEALTH

In no area of knowledge and practice are changes occurring more rapidly than in medicine and public health. We seem to be on the threshold of an era more promising than any we have known. The sulfonamides, penicillin, radioactive isotopes, DDT — to mention only a few new instruments which have been placed in our hands — foreshadow a new move forward, a new renaissance, a new period in human development when the imagination is endowed with wings. If only we can be freed from the shrieking insanity of another war, it does not seem impossible to believe that within a period of no unreasonable duration we shall be able to limit the ravages of diseases like cancer, tuberculosis, infantile paralysis and perhaps some of the degenerative disorders and even the common cold.

But the advance is not only in curative medicine; it involves the relations of medicine and public health to each other, and their place and scope in the social structure. There are strong evidences, for example, that the border lines between curative and preventive medicine are fading out. Public health has been concerned primarily with its traditional preventive work, on the general theory that "a fence at the top of the cliff is better than a hospital at the bottom." But diagnostic and curative medicine cannot avoid preventive measures any more than preventive medicine, under certain circumstances, can stay out of the curative field. We have the phenomena now of public health personnel running hospitals (for the very good reason that if they did not run them, nobody else would) and of practitioners, in fields like obstetrics and pediatrics, moving openly and boldly over to the preventive side. It works both ways, and substantial experience as well as practical demon-

stractions are accumulating, particularly in the English-speaking and Scandinavian countries, which show how the old lines are breaking down. Certainly the attempt to fix the boundaries of public health by establishing a rigid distinction between prevention and cure is no longer realistic.

To what ultimate goals this trend is leading no one can do more than guess; but one aspect of the problem is intimately related to the economics and sociology of medical care. In 1947 Dr. John B. Grant of the staff of the International Health Division of the Foundation made a survey of the developing ideas in relation to medical care in Australia, New Zealand, Canada, Great Britain, Denmark, Finland, France, Holland, Norway, Sweden, Switzerland, South Africa and the United States. His report showed a world-wide trend toward a far broader distribution of the benefits of modern medicine than has hitherto, at least in the United States, been thought practicable. The economic barriers to adequate medical care, which previous generations have tolerated as a necessary evil, now lie heavily upon the consciences of people everywhere. It is inconceivable that complete preventive, diagnostic and curative services should, for any individuals or groups, be determined by financial status rather than by actual need. No nation that values the worth built into its human population can continue to allow its citizens to die, or for that matter to be only half alive, solely because they are unable to pay for what modern medicine could give them. Health is a basic human need, and in all the countries visited by Dr. Grant steps are being taken, with varying degrees of thoroughness and success, toward a program of curative and preventive measures which will make available to every individual, without discrimination, all the facilities of modern science necessary to the

development and maintenance of his mental and physical capacity.

Public health is thus reaching the stature of a social science in the service of society. It has its roots deep in the general welfare. It embraces fields like nutrition, housing, recreation, education and social security. It is an integral part of the social process.

This point of view represents a radical departure from American thinking of even two decades ago. But our democracy is not static; it is a vigorous and growing faith. The American tradition has always been a tradition of experimentation. The sturdy stuff that makes this nation great is its capacity for adaptation, its willingness to meet new conditions with new methods, whether in the realm of machine tools or social arrangements. We have kept ourselves strong and healthy because we have known, instinctively at least, that the termites of history are waiting for ideas and practices which have become outmoded and outgrown.

Speaking before the International Conference of Physicians in London this last year, Winston Churchill told the story of an eminent American freethinker who was once asked how he would have made the world different if he had been the Deity. He replied: "To begin with, I would have made health infectious instead of disease." We shall probably never completely succeed in eliminating the infectiousness of some diseases; but there is a deep sense in which our new knowledge and our widening conceptions of public welfare will result in making health, if not infectious, at least within the reach of all men.

THE EDUCATION OF NURSES

The nurse today occupies an increasingly significant position in the extension of modern medicine. The

growth of public health services and of hospital programs, in the more fortunate parts of the world, and the new stirrings toward better standards in countries still marked by poverty and illiteracy, are creating a demand for her services on a global scale.

The education of the nurse is, therefore, a matter of deep social concern. Unfortunately, in most of our universities the schools of nursing have not yet been placed on the same basis as other professional schools. The traditions of the apprentice system have a dignified past. Today, however, they are too frequently employed to justify a training scheme whose principal but unacknowledged aim is the provision of a constant supply of cheap labor. There is scarcely a score of institutions in North America where the teaching of nursing is based on modern educational principles. Even today large medical centers are being planned with no realization of the necessity of including adequate schools of nursing. More important still, there is far too little awareness of the new patterns of medical practice in which the nurse is an indispensable part. Everywhere around the world the emphasis is shifting from sickness to health, from therapy to prevention, from the physical to the mental and emotional; and the outpatient departments of hospitals, together with the public health agencies, are taking on wider significance, as the expanding needs of society underscore the growing importance of preventive medicine. In this vast development the nurse has a place of strategic importance, and the time has come — indeed, it is long past due — to discard the compromises and half measures which have too often marked the course of nurse training, and to base the profession on educational principles broad enough to sustain the new promises of the future.

For nearly 35 years The Rockefeller Foundation has been interested in nursing education and has appropriated sums in excess of \$7,000,000 for this purpose. This interest has been related primarily to the Foundation's program in public health, and for that reason its emphasis has been placed on the preventive and social aspects of nursing rather than on the strictly curative side. In other words, the Foundation has been concerned not so much with the training of the hospital or bedside nurse as with the development of young people for community nursing service. But both types of nursing are essential, and both should stem from the same basic pattern of education. True, many routine bedside duties may in the future be discharged by some other sort of personnel provided by short training courses specifically designed for this important task. But overall responsibility for nursing care can only be assumed by those whose education is unequivocally professional.

The public health nurse has come into her own. In point of numbers she far exceeds other health workers. Upon her, in large measure, the practice of public health depends. Health work succeeds or fails as the public health nursing services are good or poor. The Goldmark report, published in the early twenties and financed by The Rockefeller Foundation, was the first great milestone in the development of adequate educational standards for public health nursing. This report was implemented by the establishment at Yale University, with the help of the Foundation, of the Yale School of Nursing, with America's outstanding nurse, Annie W. Goodrich, as its first dean.

It was in the early twenties, too, that the Foundation began to develop nursing education in Europe. The first grants were made to encourage health programs in the

new countries carved out of the old empires of Central and Eastern Europe. Many of these countries were unable to sustain building programs adequate to provide hospital treatment on the necessary scale. On the other hand, all would benefit by a public health program designed to reduce the number of persons needing such care.

To this end The Rockefeller Foundation aided Cracow and Warsaw in Poland, Debrecen and Budapest in Hungary, Zagreb in Yugoslavia, Prague in Czechoslovakia, Brussels in Belgium, Lyon in France, Athens in Greece, Cluj and Bucharest in Rumania, Helsinki in Finland and Aarhus in Denmark to establish modern schools of nursing, independent of hospitals, whose objective in each instance was to prepare well-selected young women for the public health field.

In this same decade the Anna Nery School of Nursing was opened at Rio de Janeiro to train young Brazilian women for public health work; and in China, the Peiping Union Medical College created a school of nursing financed with Foundation funds.

In the early thirties aid was given to the School of Nursing of the University of Toronto, to establish a basic professional program in the preparation of students for community nursing service. Kathleen Russell's leadership, scholarly ability and insight into the community's nursing needs have produced an outstanding research program, and Toronto is one of the peaks of nursing training in the world.

In more recent years the Foundation has helped in the establishment of various schools of nursing in the United States as well as in countries like Venezuela, Colombia, Ecuador and Finland. Altogether, aid has been given in the creation of 17 schools of nursing in 11 countries in Europe, Asia and Latin America, 6 in the United States and 2 in Canada.

Important as the capital projects are, it is recognized that buildings are not the vital part of any program; rather, it is the people who put the program into operation that really count. The Foundation has emphasized from the beginning that the proper preparation of teachers, supervisors and administrators for their posts of responsibility in the training of nurses is of paramount importance. An extensive fellowship and travel grant program has, therefore, been in operation for nearly a quarter of a century, bringing from one country to another, from one institution to a particular key center, the leaders of the nursing profession who could most profit by such an experience. A total of 126 travel grants and 390 fellowships have been awarded for this purpose. To aid in this exchange, consultants attached to the nursing staff of the Foundation are now stationed in Europe, South America, the Near East and the Far East.

The Foundation has been fortunate in having on its staff three distinguished nurses: Miss F. Elisabeth Crowell, Miss Mary Beard, and Miss Mary Elizabeth Tennant, the present head of the nursing section. Their program has had as its broad aim the raising of standards of nursing education and practice around the world. As an indication of the international character of this activity, it can be pointed out that in 1947 Miss Tennant's work took her to Latin America, India, China, Japan, Korea, the Philippine Islands and Hawaii. In 1946 she visited Egypt, the West Indies, the Near East, England, France and Czechoslovakia.

THE CROSS-BREEDING OF BIOLOGY

Over the last two decades The Rockefeller Foundation has, in the field of the natural sciences, put its main emphasis on experimental biology, and particu-

larly on the application of the techniques of the physical sciences to the problems of living matter. Just as the corn breeder obtains greater vigor and larger yield by making hybrid crosses of different lines, so in science new strength and gratifying new results can be obtained by joining two different disciplines. In terms of this analogy, the Foundation's program has been engaged in sponsoring marriages between the physical and the biological sciences. These are by no means new alliances. The history of such unions can be traced over hundreds of years. Nevertheless, experimental biology, as it exists in the laboratories of today, is a surprisingly young subject.

Of the hybrid crosses that have occurred in the development of modern biological research, the first was between chemistry and biology. During the last half-century this union has helped to unlock the secrets of plant and animal nutrition, of vitamins and of hormones, and more recently of enzymes. It has given us the methods, the skills and the insight to pursue these studies down to the level of the living cell. Today, with such development as virus research and chemical genetics, it is pushing our knowledge to a point where we are dealing with the intimate details of those basic processes which characterize life itself.

Within the last few decades, the cross between biology and physics has firmly established itself as a fit companion for biochemistry, and this newer union promises equally large and significant returns. Biology no longer confines itself to organs, tissues or even to cells. It has reached a molecular level; and we speak, in an atomic age, of the infinitely little things that have become visible with the electron microscope, or that can be separated by the terrible forces of the ultracentri-

fuge, or that can be surmised from the images they cast on an X-ray crystallographer's plate. Indispensable as the optical microscope remains in biology, it is no longer the predominant tool that it was only a quarter of a century ago. The modern biological laboratory often looks surprisingly like a chemical or physical laboratory. The frontier of biological knowledge has penetrated beyond the limits set by the optical microscope and is now located out in that strange world of individual molecules, previously invaded only by the physicist and chemist.

Each new hybrid cross in science has given rise to, or has developed out of, an ever increasingly complex array of scientific tools and techniques. As experimental biology outdistances the limits of any one discipline, so, too, it outdistances the financial limits of its former laboratories. The institutes which can afford ultracentrifuges, X-ray equipment, vast computers, spectrophotometers, electrophoretic machines and cyclotrons are not numerous; and we may soon see the beginnings of another hybridization, at the institutional level. Indeed, it has already begun, for we are witnessing the development of specialized centers for enzyme study or for virology or for protein research, and cross-fertilization between these centers is an obvious necessity.

This development toward specialization could take an unfortunate turn if it entrenched itself behind the frontiers of nationalism, thus defeating the possibility of general cross-fertilization. Specialization by countries in a world in which the free international exchange of men and ideas had been destroyed would be a calamity to the development not only of biological research, but of all research as well.

During 1947 the Foundation made several significant grants in this general area. It is not surprising that two of them — one for \$250,000 and one for \$50,000 — went to the two outstanding institutions in the United States which emphasize the applications of basic science to biology, i.e., the Massachusetts Institute of Technology and the California Institute of Technology, the former dealing largely with the relations of physics to biology, the latter with the applications of chemistry.

In England grants were made to two distinguished biologists who were originally trained in physics: \$85,000 to W. T. Astbury, professor of biomolecular structure at the University of Leeds; and \$21,000 to J. T. Randall, director of the Biophysics Research Unit of King's College, University of London.

A grant of \$27,500 was also made to enable Professor Norbert Wiener of the Massachusetts Institute of Technology and Dr. Arturo Rosenblueth of the National Institute of Cardiology in Mexico City to continue joint research on the application of mathematical analysis to problems of the central nervous system. Two other grants, specifically in biophysics, one of \$17,000 and the other of \$12,000, were made to the brilliant Bohr-Hevesy, Rehberg-Krogh group at the University of Copenhagen; and to the equally distinguished Kluyver-Milatz team at Delft and Utrecht in Holland.

THE UNITY OF SCIENCE

The fragmentation of knowledge into uncoordinated specialisms has long been recognized as one of the chief evils of modern scholarship. Few people can grasp or comprehend more than a small segment of the whole domain of learning, and attempts at integration and synthesis often result in superficiality. Liberal education in

universities and colleges has, for example, too often consisted of exposure to an absurd collection of bits of knowledge held together by no visible thread of unity or coherence.

There is, of course, nothing new about this situation; it has been under discussion for more than a generation. But although many institutions are now reorganizing their courses of study in the interests of a greater unity, little has been done about the central core of the problem. Meanwhile, the irresistible advance of knowledge involves an equally irresistible increase in specialization.

It is paradoxically true that as the segments of knowledge become more deeply cultivated, more and more interconnections between them are developed. Thus, we now have hybrid disciplines, such as psychobiology, biomathematics, astrophysics and biophysics, which represent the necessary bridging between principles and hypotheses that are no longer explicable in terms of a single field of knowledge. Unfortunately, however, these cross-connections themselves quickly become specialized, each with its own highly particularized techniques and terminologies. Thus, although specialization leads to certain integrative results which might counteract its own evils, the practical effect on general education of these curative tendencies has been slight, and the problem remains substantially unchanged. Indeed, there is a sense in which it has become even more complex and baffling, for the terminologies of these new hyphenated disciplines have not been coordinated with each other, and frequently the same words are used in totally different meanings, or what is even more confusing, in slightly different meanings. Instead of clarifying the issues, therefore, these cross-connections have tended to engender a kind of semantic fog.

Some 25 years ago in Europe, a group known as the "Vienna Circle" began its attack on the problem of integration by way of a new logic and a new philosophy of empiricism. This involves exhaustive semantic analysis, the aim of which is to dissipate the Babylonian confusion of scientific thinking, so that the propositions of all sciences become statements about observable phenomena described in words whose meanings and connotations are commonly accepted.

The leadership of this movement has, during and since the war, been transferred to the United States, and an Institute for the Unity of Science has received a charter from the Board of Regents of the State of New York. Its activities include research work which cuts across the traditional demarcation lines of specialized disciplines and departments, the utilization of new knowledge in logic, the study of meaning and how it is communicated, and research on the philosophical, psychological and sociological backgrounds of science. This Institute publishes the *International Encyclopedia of Unified Science*, the *Journal of Unified Science* and the *Library of Unified Science*. In 1947 The Rockefeller Foundation made a grant in support of this work. The activity represents a pioneer undertaking. It is as yet highly experimental, but it has genuine promise in leading toward a deeper integration of human knowledge and culture.

THE NATIONAL BUREAU OF ECONOMIC RESEARCH

In 1947 The Rockefeller Foundation made the largest grant it has ever made in the field of economics. The sum of \$1,300,000 was appropriated to the National Bureau of Economic Research, extending support to that institution through 1954.

The National Bureau, which is now in its twenty-eighth year, and which has received support from Rockefeller boards since 1923, is one of the world's leading institutions that seeks to lay a more adequate foundation for objective thinking and research in economics. Beginning in 1920 with investigations of the amount and distribution of national income, the program of the bureau was gradually broadened to include studies in business cycles, employment, wages and prices. In the next two decades, investigation in production and productivity trends as well as in finance and fiscal policy was added. By entering new fields gradually and at the same time continuing work in old fields, following leads whenever results were promising, the various investigations constitute a significant beginning in the scientific measurement of the realities of economic change.

Dr. Wesley Mitchell, the leading spirit in the creation of the National Bureau, had a conception of research in economics that was daring and at the time perhaps somewhat unfashionable. This conception rested on two beliefs: (1) that the rich capacity of economists to produce imaginative hypotheses was not adequately balanced by efforts at verification and inductive research; (2) that with the facilities now available, it should be possible to supplement theoretical conjecture with scientifically measured fact and relation; and, thereby, to work towards the substitution of tested conclusion and definitely measured knowledge for guesswork and dogmatic hypothesis.

The activity of the bureau over the years is evidenced by its extensive publications, 197 in all — books, technical papers and bulletins. The findings of these studies are cited in articles in scientific and professional journals, textbooks, treatises and official documents. They have

been mentioned in Supreme Court decisions. Increasing use is being made of National Bureau publications by practicing economists in business, by editorial writers in the daily press and by economic journalists, not only in this country but abroad.

The bureau, too, has made an impressive record in another direction. Because of the training opportunity involved, young scholars from universities have come in significant numbers to the bureau for temporary periods. Visiting scholars from abroad also use the materials, studying the methods and consulting the staff. These alumni of the bureau are now filling important teaching and research posts in universities, and in government and business enterprises.

The action of the Foundation in extending its support through 1954 was a recognition of two important considerations: first, a wise management of our economy — one that will moderate the swings of economic life — is perhaps the prime necessity if America is to win through to inner strength and stability; and second, such a result is equally important if the role of this country in international relations is to be positive, sustaining and dependable. These objectives are not separate; they are opposite faces of the same whole. They cannot be realized if this country does not understand the nature of its myriad economic processes and the means of conserving their health and productiveness.

The complexities of economics, added to the common demand of the "market" for the less able rather than the better in economic thinking, make too often for inadequate standards of work. Retreats from science, retreats from reality and retreats from humanism are not infrequent. Where competent efforts to avoid these limitations exist — as in the case of the bureau — they

represent important contributions to what Mr. Henry L. Stimson has called "America's fitness to survive."

APPROACHES TO PEACE

Work which looks toward more adequate analysis and understanding of the issues in international relations continued to hold an important place in the grants made by The Rockefeller Foundation in 1947 in the field of the social sciences.

There is a sense, of course, in which the Foundation's entire program is aimed at the single target of world peace. Whether the work has to do with the control of malaria in Sardinia, or the extension of our knowledge of human behavior through research in psychiatry, or the promotion of the interchange of students of philosophy between North and South America, the objective is a humane and rational world in which peace among men can be secured. The preparation of the soil for a social order in which peace can permanently grow requires the maturing processes of time; and although many of us may doubt whether our civilization is going to be accorded this necessary factor of time, unless we take the completely defeatist attitude we have to proceed on the assumption that there is still going to be an opportunity for intelligence to take hold, and that the world of the future will still be a free world in which reason rather than force will control.

Meanwhile we cannot neglect the direct approach to the overwhelming crisis of our generation, and for its part the Foundation has contributed substantial sums over the last decade to organizations and projects that are concerned with the issues of international relations. This policy was, of course, continued in 1947. For example, the sum of \$225,000 was given to Brookings

Institution in support of its broad program of research and education in the field of foreign policy. This program, under the leadership of Dr. Leo Pasvolsky, involves, among other objectives, five basic studies:

- 1) Origin and Interpretation of the United Nations Charter.
- 2) Foreign Policy Objectives of the Major Powers.
- 3) Influences Making for Economic War or Economic Peace in International Relations.
- 4) New Concepts of International Security.
- 5) International Organizations and Conferences as New Methods of Diplomacy.

In addition, Brookings Institution, as part of its program in the training of specialists, has planned an annual two-week seminar for about one hundred teachers of international relations.

Another grant — in the amount of \$30,000 — was given for the purchase of books, periodicals and pamphlets for the library of the Palace of Peace at The Hague. This library serves the Permanent Court of Arbitration, the Academy of International Law and, most importantly, the International Court of Justice.

Still another appropriation — in the amount of \$75,000 — was given for the creation of senior fellowships at the Russian Institute of the School of International Affairs at Columbia University. The Russian Institute, toward whose creation in 1945 the Foundation contributed \$250,000, is without doubt the leading graduate school in the United States in the field of Russian studies. In addition to the Russian language, its basic curriculum provides: (1) a broad background and training in five disciplines (history, economy, law and government, international relations and the social and ideological aspects of literature) as applied to Russia, (2) an intensive

research training in one of these five disciplines elected by the student and (3) fundamental graduate training in the broader aspects of this elected discipline.

The senior fellowships will make it possible to bring to the institute for advanced training some of those persons who are now conducting instruction in Russian subjects in other universities, thus enabling them to broaden their equipment and develop their effectiveness in Russian research.

Other grants by the Foundation in 1947 in this general field of international relations include the following:

- 1) The Royal Institute of International Affairs (\$50,625)
— a supplement to an earlier grant toward Professor Arnold J. Toynbee's study of the history of the war and of the peace settlement.
- 2) Commission of the Churches on International Affairs (\$15,000) — for preparations for conferences on the role of churches in international relations.
- 3) Johns Hopkins University (\$37,400) — for a study of the trends and forces which affect the United States in its international relations.
- 4) Netherlands Institute of International Affairs (\$25,000) — for a broadly based European conference on the economic and cultural aspects of the German problem.
- 5) Council on Foreign Relations (\$60,000) — for general support.

THE HUMANITIES IN SPACE

The humanist is no freer of the danger of parochialism than the scientist. Not only is he apt to be a prisoner of his own specialization, but far too frequently he is narrowly preoccupied with the culture of a limited segment of the world. Particularly here in our Western civilization we look back along the corridor from which our literature, history and philosophy have emerged,

only dimly aware of other corridors that lead, like our own, into the vast amphitheater of blending cultures into which we have now come.

Our books and our university courses are too often indicative of this limiting outlook. A volume on the history of educational philosophy was recently published which, despite its general title, included no material on the educational philosophy of the Orient. One can thumb through the catalogues of far too many universities and colleges here in the United States without finding a single course that would indicate that the thoughts and history of the Far East and of the Slavic world have any past or present significance.

We are concerned today about a world organization, and we know that unless it can be made to succeed, the atomic age will ride in on a wave of senseless horror. But without a world view of human culture a world organization can scarcely survive. The building of world unity depends in large measure upon a humanism which, limited by no flags or boundary lines, embraces the contributions of men everywhere.

Over the years The Rockefeller Foundation has taken some necessarily modest steps toward this general goal. It was nearly 15 years ago that the Foundation made its first grants to encourage American humanists to study the life and languages of the Far East, the Near East and the Slavic world. At the outset, the opportunities for encouragement were relatively limited and small in scope. The salient need was for younger men and women who could, by training and experience, qualify as interpreters of these regions through a knowledge of their language and a direct acquaintance with their life and people. To provide this training and experience, the Foundation in 1933 began the award of fellowships

for humanistic study of the Far East, the Near East and the Slavic world, with the result that by the end of 1947 some 80 younger men and women had been helped on their way to becoming such interpreters.

During this same period the Foundation also made a series of grants to encourage the humanistic study of these regions in colleges, universities and, to a small degree, in more specialized institutions. The limitation of opportunity at the outset was reflected in the annual totals of grants: \$20,000 in 1934; \$84,900 in 1935; \$152,-850 in 1936; \$157,100 in 1937; \$111,300 in 1938. With the outbreak of the war in 1939, opportunities dwindled, with grants totaling \$86,798 in that year and falling to \$23,500 in 1940. But from that year on, the annual totals reflect a wider, if more necessitous, interest: \$156,-400 in 1941; \$142,800 in 1942; \$234,430 in 1943; \$411,-700 in 1944; \$398,325 in 1945; \$325,200 in 1946; and \$629,125 in 1947, bringing the 14-year total to nearly \$3,000,000.

The range and variety of grants of this type made during 1947 may be briefly indicated. The American Council of Learned Societies received \$12,000 for the work of its Committee on Near Eastern Studies, \$25,000 for the translation into English of important Russian works and \$100,000 to augment the supply of materials needed for teaching and research on Slavic studies; the University of Pennsylvania, \$60,000 for the development of studies of modern India; the University of Washington, \$150,000 for studies of the Far East; Yale University, \$25,000 toward the support of a group of advanced students of the Far East; the University of California, \$30,000 to develop intensive instruction in Slavic and Far Eastern languages, and \$100,000 for the development of junior personnel in Slavic studies; Co-

lumbia University, \$25,000, likewise for Slavic studies; Indiana University, \$27,500 for the development of studies of Eastern Europe, principally Finland and Hungary.

The concentration within the United States of Foundation activity in this field over the last 15 years is not based on any illusion that internationally acceptable interpretations of history, literature and philosophy can be achieved by American workers alone. The experiment was begun at home and it continued there primarily because of the obstacles created by the war. During 1947 the British Government published the report of a commission known by the name of its chairman, Lord Scarbrough, pointing to the need in Great Britain for a concerted development in the study of Russia, the Far East, the Near East, Africa and southeast Asia. And interest is developing in the countries of Continental Europe, as is shown by a grant of the Foundation in 1946 to the University of Stockholm toward the training of a group of younger Scandinavian interpreters of the Far East, as well as by its appropriation in 1946 to assist in the reestablishment of Chinese studies at the University of Leiden.

It was not until 1947 that Foundation representatives in the humanities were again able to visit the Far East. No major projects have yet resulted, but a small grant to the National Tsing Hua University for the study of the Western humanities, and a grant in aid to Yenching University for development of materials in English on Chinese philosophy, fit into this pattern of action and illustrate the point that the study of human culture must be on a universal basis if it is to furnish understanding of the widening horizons of the political and economic life of men.

THE HUMANITIES IN TIME

Widening horizons can be defined in terms of time as well as of space. The humanist is often thought of as one who is preoccupied with the past; but for true humanism there are no visible frontiers between past, present and future. It is the timelessness of his materials which accounts for the humanist's concern with them. Indeed, to release men from the bondage of time is one of his major functions. Not the past alone but its projection into the present and future is important.

In its support of humanistic studies the Foundation has been interested in work that gives life and force to experience that is both timeless and immanent. Work of this kind is more often quiet than dramatic. Typically it calls for no large expenditures and consequently does not always figure among the major grants recorded in the Foundation's annual reports. The usual requirement is modest provision for release from other duties and for essential expenses which the recipient would find it difficult to bear himself.

For example, grants in aid of research during 1947, ranging in amount from a few hundred dollars to a maximum of \$7,500, included provision for a new and interpretative edition of an early Spanish account of the colonization of the New World; the completion of a study of Simón Bolívar; the translation into English of the *Popol Vuh* — the sacred book of the Quiché Indians of Guatemala; a study of the social implications of modern drama; continued help in the preparation of a life of Thomas Jefferson; a study of the thought of Jefferson and Madison; a cooperative study of the work of a living philosopher; a study of the philosophy of art.

Occasionally the Foundation has found it advantageous to delegate responsibility for the award of such as-

sistance to other agencies. The outcomes of a previous grant of this kind to the Newberry Library of Chicago led in 1947 to an additional grant of \$50,000 over a five-year period for studies of midwestern culture. It was the earlier grant which made possible such books as *Midwest at Noon*, by Graham Hutton, *American Daughter*, by Era Bell Thompson, and *William Allen White's America*, by Walter Johnson. That these studies of midwestern culture produce more than books may be illustrated by the remark of a listener following an address by the director of the library: "I never knew history was like that. I never knew that the Midwest had a history. I thought that history was Bunker Hill and Plymouth Rock and George Washington."

To help in extending the frontiers of the mind in time as well as in space — this is the framework of the Foundation's program in the humanities. Obviously its decisions are by no means infallible, and the promising opportunities which it meets far exceed its available funds. But certainly in our world today no field of activity is more important than the field of humanism. It is to the philosopher, the poet, the artist, the historian that we look for insight into the nature and destiny of human existence; it is from them that we take courage to reaffirm our faith in man's ultimate ability to find a rational solution of the problems of meaning and freedom which underlie his existence on this planet.

APPLICATIONS WHICH WERE DECLINED DURING 1947

During 1947 the Foundation was obliged to decline a total of 2,510 applications for financial aid, as compared with 1,839 in 1946. Of the total, 1,073, or 42 per cent, were from foreign countries. 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 involving 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 1947 may be classified under the following headings: conferences and meetings, 26; continued aid to projects, 26; cures, remedies, investigations of theories and inventions, 70; development of educational and cultural institutions and projects, 298; European refugees, 44; fellowships, travel and training grants, 1,055; local institutions (including hospitals, theaters, libraries, museums and churches), 217; personal and medical aid, 111; public health projects, 18; publication projects, 106; research projects, 414; miscellaneous, 125.

REPORT OF THE SECRETARY

SECRETARY'S REPORT

THE members and trustees of The Rockefeller Foundation during the year 1947 were:

Walter W. Stewart, *Chairman*

Winthrop W. Aldrich	Walter S. Gifford
Chester I. Barnard	Robert F. Loeb, M.D.
Karl T. Compton	John J. McCloy
John S. Dickey	Henry Allen Moe
Harold W. Dodds	William I. Myers
Lewis W. Douglas ¹	Thomas Parran, M.D.
John Foster Dulles	John D. Rockefeller, 3rd
Raymond B. Fosdick	Robert G. Sproul
Douglas S. Freeman	Arthur Hays Sulzberger
Herbert S. Gasser, M.D.	Harold H. Swift

Henry P. Van Dusen

The officers of the Foundation were:

Walter W. Stewart, *Chairman of the Board of Trustees*
Raymond B. Fosdick, *President*
Thomas B. Applegate, *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*

¹ Resigned April 2, 1947.

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

The President, Chairman

Chester I. Barnard	Henry Allen Moe
John S. Dickey	John D. Rockefeller, 3rd
Robert F. Loeb, M.D.	Walter W. Stewart

The following served as scientific directors of the International Health Division of the Foundation during 1947:

Charles H. Best, M.D.	Gordon M. Fair
Eugene L. Bishop, M.D.	Hugh J. Morgan, M.D.
Rolla E. Dyer, M.D.	Lowell J. Reed

The Director of the Division

MEETINGS

Regular meetings of The Rockefeller Foundation were held on April 2 and December 2-3, 1947. A special meeting was held on January 16, 1947. Six 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 1947 and a statement of its Principal Fund follow:

SUMMARY OF APPROPRIATIONS ACCOUNT

FUNDS AVAILABLE		FUNDS APPROPRIATED
Balance from 1946.....	\$ 221,431	Appropriations
Income for 1947.....	10,011,756	Public Health..... \$ 2,250,000
Unexpended balances of appropriations allowed to lapse and refunds on prior year grants.....	876,448	Medical Sciences..... 1,521,125
Transferred from Principal Fund in accordance with resolutions of the Trustees, December 3, 1946, and January 16, 1947...	20,000,000	Natural Sciences..... 1,670,090
		Social Sciences..... 3,051,375
		Humanities..... 1,508,600
		General Education Board..... 1,500,000
		China Medical Board, Inc..... 10,000,000
		Miscellaneous..... 229,000
		Administration
		Scientific Divisions 995,494
		General..... 320,374
		<hr/>
		\$23,046,058
Authorizations for later appropriation by the Executive Committee..		<hr/>
		367,557
		<hr/>
Balance available for appropriation in 1948....		\$23,413,615
<hr/>		<hr/>
\$31,109,635		\$31,109,635
<hr/>		<hr/>

PRINCIPAL FUND

Book value, December 31, 1946.....	\$138,005,206
Add	
Legacies	
Estate of Robert Marsh, Jr.....	3,299
Estate of William O. Wakenight.....	8,889
Amount by which the proceeds of securities sold, redeemed and exchanged during 1947 exceeded the ledger value.....	54,422
	<hr/>
	\$138,071,816
Deduct	
Amounts withdrawn from Principal Fund by action of Trustees	
Meeting of December 3, 1946.....	\$10,000,000
Meeting of January 16, 1947.....	10,000,000
	<hr/>
Book value, December 31, 1947.....	\$118,071,816
	<hr/>

INTERNATIONAL HEALTH DIVISION

INTERNATIONAL HEALTH DIVISION

SCIENTIFIC DIRECTORS

CHARLES H. BEST, M.D.	GORDON M. FAIR
EUGENE L. BISHOP, M.D.	HUGH J. MORGAN, M.D.
ROLLA E. DYER, M.D.	LOWELL J. REED
GEORGE K. STRODE, M.D.	

STAFF DURING 1947

Director

GEORGE K. STRODE, M.D.

Associate Directors

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HUGH H. SMITH, M.D.	MARY ELIZABETH TENNANT
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JOHN C. BUCHER, M.D.	JOHN B. GRANT, M.D.
HENRY P. CARR, M.D.	ALEXANDER J. HADDOCK, M.D.

¹ Resignation effective August 31, 1947.

RICHARD G. HAHN, M.D.	J. HARLAND PAUL, M.D.
GUY S. HAYES, M.D.	GEORGE C. PAYNE, M.D.
ROLLA B. HILL, M.D.	OSLER L. PETERSON, M.D.
ESTHER M. HIRST	JANET CORWIN PIGGOTT
THOMAS P. HUGHES	PERSIS PUTNAM
JOHN L. HYDRICK, M.D.	ELSMERE R. RICKARD, M.D.
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STUART F. KITCHEN, M.D.	MAX THEILER, M.D.
FREDERICK W. KNYPE	MARGARET L. VARLEY ²
HENRY W. KUMM, M.D.	ROBERT B. WATSON, M.D.
CHARLES N. LEACH, M.D.	JOHN M. WEIR, M.D.
JOHN A. LOGAN	CLIFFORD W. WELLS, M.D.
ESTUS H. MAGOON	CHARLES M. WHEELER ³
JOHN MAIER, M.D.	LORING WHITMAN, M.D.
OLIVER R. MCCOY, M.D.	D. BRUCE WILSON, M.D.
WILLIAM A. MCINTOSH, M.D.	WILSON M. WING, M.D.
D. F. MILAM, M.D.	C. BROOKE WORTH, M.D.
ANNA MARY NOLL ¹	DANIEL E. WRIGHT

¹ Appointment effective Sept. 1, 1947.

² Appointment effective June 4, 1947.

³ On leave for military service until May 8, 1948.

INTERNATIONAL HEALTH DIVISION

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INTERNATIONAL HEALTH DIVISION

HIGHLIGHTS OF THE YEAR

IN an address on public health before the meeting of the American Public Health Association in October 1947, the President of The Rockefeller Foundation pointed out that the world is on the verge of a new era in the field of medicine and public health.

Portions of this address reflect recent International Health Division program developments. There was emphasis on the public health aspects of medical care, mental hygiene, epidemiology and disease prevention. It was brought out that medical care in the future is going to be determined not by the financial status but by the actual requirements of the individual. A way must be found by which the burden of illness can be equitably spread.

Public health is bound to move more actively than it has up to the present time into the field of mental hygiene. Research over many years will be necessary to give us the tools for discovering what types of preventive work are best adapted to borderline and sub-clinical cases of mental disorder. Pediatricians and public health nurses have a part to play in planning this and other long-range attacks in the public health field.

Public health in modern times must be conceived in global terms. The world cannot be half healthy and half diseased. Epidemics anywhere are a danger to all. The constitution of the World Health Organization embodies this point of view when it makes the enjoyment of the

highest attainable standard of health one of the fundamental rights of every human being, without distinction of race, religion, political belief, economic or social condition.

At the close of the year Dr. John B. Grant, at present regional director for Europe of the International Health Division, completed a two-year survey of international trends in health care. Important findings were incorporated in an article published in the *American Journal of Public Health* (March 1948). As a result of wide study supplemented by visits to 12 countries active in developing new methods of health care, ideas from leaders in this field were clearly set forth, and the reader was presented with a selective list of references of well over 100 items, bringing together the best published thought on the subject of community efforts to raise standards of health. Here, too, the central idea is that the emerging pattern of health care as a social science in the service of society offers new hope for human welfare.

During 1947 the International Health Division continued to work on an international basis in the study and control of certain well-recognized diseases. The chief among these were malaria, yellow fever and typhus. As health work in Europe and elsewhere in the recently war-devastated areas is resumed, there is an increased emphasis on sanitary engineering and public health education.

YELLOW FEVER

In Brazil the International Health Division has for many years cooperated in a large-scale effort to investigate and control yellow fever. Since 1940 the Brazilian Government has more and more taken over responsi-

bility for all the yellow fever control work. During 1947, however, the International Health Division allocated \$75,000 toward a program of field and laboratory investigations.

How jungle yellow fever spreads is the problem. During 1947 wild mosquitoes marked with very fine bronzing powders were recaptured in the forest not only near the point of release but at distances of more than 4 kilometers. Dispersion and flight range studies of mosquitoes are continuing.

South of the equator the winter months run from June to September, and during these months the forest mosquitoes, of which *Haemagogus spegazzinii*, an important sylvan vector of yellow fever, is one, become scarce. Yellow fever during this period practically disappears. The question is, how does the virus survive. Throughout the dry months of the year certain other sylvan mosquitoes remain in evidence. A hunt is on to determine whether any hitherto unsuspected mosquitoes help in the survival of the virus.

One question is how much virus is needed to infect a mosquito, and another is whether this virus is obtained from forest monkeys, rodents or marsupials. These questions are not new, but the work required to supply unequivocal answers is by no means finished.

In Brazil nearly 4,500,000 persons have in recent years been vaccinated as a direct protection against yellow fever.

Colombia is the South American country in which, next to Brazil, the most extensive yellow fever investigations have been made. The International Health Division has cooperated since 1934. During this time, the Carlos Finlay Institute for Special Studies has been operating as a yellow fever laboratory. An International

Health Division staff member acts as chief of this laboratory. Among its activities is the preparation of yellow fever vaccine for Colombia and neighboring countries. More than a million people in Colombia alone have been vaccinated for yellow fever. Vaccine and diagnosis have been supplied free to several countries in South America and the West Indies.

The work of this laboratory was enlarged in 1947 to include facilities for typhus investigations. As the International Health Division cooperation in yellow fever research comes to an end, probably in 1948, the institute will have charge of both the yellow fever and the typhus work.

A striking instance of the efficacy of DDT in yellow fever control is offered by the recent work in British Guiana. A campaign, with the avowed aim of eradicating the well-known yellow fever mosquito, *Aedes aegypti*, began in that country in 1939. In the thickly populated coastal cities much difficulty was encountered. In most cases there is no piped water supply, so that rain water collected for drinking purposes and stored in a great variety of containers offers perfect opportunities for mosquito breeding. Complete control was next to impossible.

In August 1945 there was begun a small experiment in *Aedes aegypti* control, using a 5 per cent solution of DDT in commercial kerosene as a residual house spray at Plaisance, a village on the coast. This and subsequent experiments soon established the fact that *Aedes aegypti* eradication could be attained in each case in about 13 weeks at a cost of approximately B.W.I. \$1.76 per house and \$0.47 to \$0.59 per head of population. A single spraying remains effective for periods up to 17 months.



Photograph Excised Here

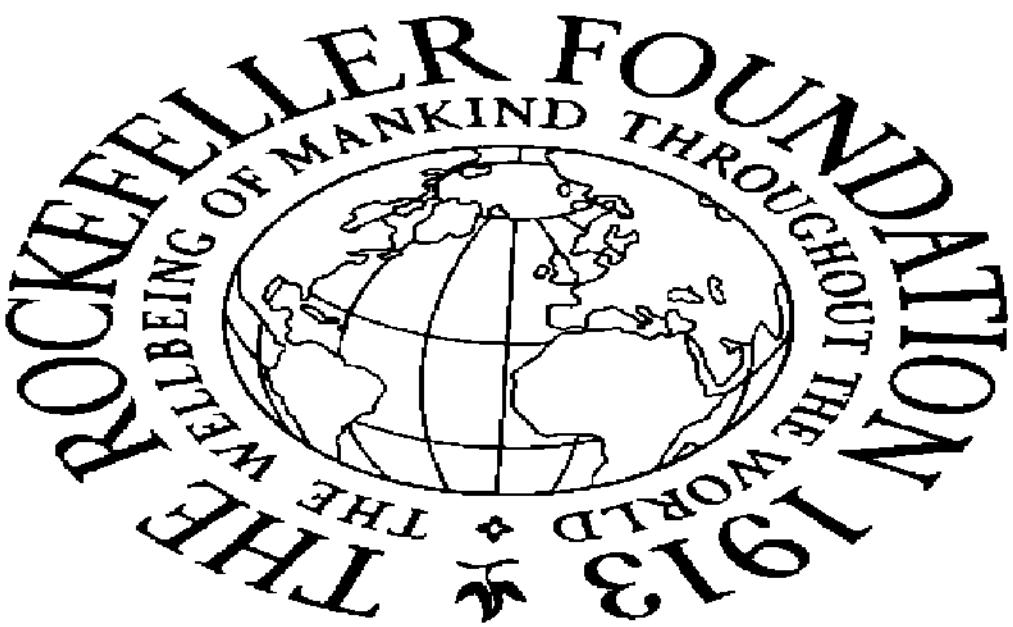
Capture and laboratory
study of forest mosqui-
toes incriminated as vec-
tors of yellow fever in
Colombia





Photograph Excised Here

Funk car in use in Sardinia for preparing DDT solution for house spraying to eliminate malaria-carrying mosquitoes.



Photograph Excised Here

Members of antimalaria team in the Netherlands filling a shoulder sprayer with DDT.

As a result of these experiments, DDT was used on a wider scale during 1946. Large hidden producing foci were eliminated, and the usual 8-12 week "carry over" was stamped out in 2 weeks, often by the spraying of a single house. House spraying with DDT proved to be the one additional measure required to bring about quick eradication of *A. aegypti* at low cost. Although the index for a number of years, in spite of wartime shortages, went steadily down, only in 1946, with the aid of DDT, did it finally reach zero.

BRITISH GUIANA YELLOW FEVER SERVICE

Time	Personnel employed	Population under protection	<i>A. aegypti</i> Index (per cent)
1939	13	10,253	10.2
1940	97	78,415	5.7
1941	124	100,000	4.2
1942	154	114,701	2.05
1943	205	125,804	3.09
1944	224	130,047	1.6
1945	207	140,214	2.19
1946	162	140,214	zero

A Yellow Fever Research Institute was established at Entebbe, in Uganda, East Africa, in 1937. This institute is engaged in an extensive research program. As in South America, interest centers on forest mosquitoes and monkeys involved in the epidemiology of yellow fever. Yellow fever virus has a number of times been isolated from wild-caught *Aedes simpsoni* mosquitoes in Uganda. This is a cousin of the standard and classical carrier of historical yellow fever, *Aedes aegypti*. It is believed that *Aedes simpsoni* is largely responsible for the transmission of yellow fever in the human part of

the cycle in this region. However, this species rarely occurs within forests. Yet within these forests yellow fever is prevalent in monkeys. Evidence indicates that these monkeys are probably infected at night, while they sleep in the trees, by some night-biting vector. The principal suspect is *Aedes africanus*.

This situation is alive with problems calling for attention. It is difficult to locate with certitude in a forest the exact area where virus is most active. An attempt is being made to solve this problem by the use of sentinel monkeys. At first such sentinel monkeys were kept in the forest in cages. *Aedes africanus*, however, is averse to biting monkeys in cages. The sentinel monkeys are now kept on platforms placed in trees throughout the forested parts of a studied area. Information obtained by this method is supplemented by a viscerotomy service and a hut survey.

On the west coast of Africa the International Health Division is cooperating in yellow fever studies centering around the government laboratory in Lagos, Nigeria. Work in 1947 was a continuation of studies of an urban epidemic of yellow fever at Ogbomosho, which occurred in 1946. A much clearer conception of the clinical manifestations of yellow fever in the African population has been obtained. Yellow fever among Africans is definitely a milder disease than in the white race.

During September experiments were initiated to discover if a yellow fever vaccine could be made from chick embryos infected with neurotropic yellow fever virus, French strain, which would infect susceptible animals when given by the "scratch" method of inoculation, and also induce the development of an immunity without causing death or even serious illness. Such a

vaccine has the advantage of being cheaper to manufacture than the 17-D strain yellow fever vaccine now in use, and it would require less equipment for inoculation procedures. This type of inoculation with a preparation made from infected mouse brains has been employed at the Pasteur Institute of Dakar, French West Africa, for some time. A preparation made from infected chick embryos may prove superior since the embryos are probably less likely to carry latent pathogenic and non-pathogenic agents than mouse brains.

During the year this laboratory developed methods for tagging mosquitoes by incorporating radioactive atoms into their tissues. Field experiments with the radioactive mosquitoes were carried out, and significant information on length of life and flight range was obtained.

Interesting studies of the sounds produced by male and female mosquitoes are being carried out. The sounds of individual mosquitoes have been recorded for some of the species of yellow fever interest and also of the most important anophelines. Males respond to female sounds of their own species and not to any other.

MALARIA

At the International Health Division Laboratories, located in New York, five staff members are devoting full time to research studies in the field of malaria, each with the primary aim of finding out how to destroy the parasites, but each with a somewhat different approach. Malaria today is probably of greater economic importance to the United States than ever before even though we have little of it within our own borders. More than ever, this country is involved in the welfare of tropical and subtropical peoples, not only because of the ex-

panding political field, but also because of a basic dependence on fibers, foodstuffs, minerals, oils, woods and other products, all made less abundant or less accessible and more expensive by malaria. On both economic and humanitarian grounds, it is essential to reduce the present estimated world toll of 300,000,000 cases of malaria a year with at least 3,000,000 deaths.

The most direct attack on this serious disease is by chemical destruction of the malaria parasite in the human body. But our weapons are still in the blunderbuss stage. How the new antimalarial drugs act and why they fail so often to cure, we do not know. This is chiefly because we have so little knowledge of the physiology of the parasite — in particular, so little data on its metabolism. If we could determine the chemical changes by which the living substance of the parasite is built up and torn down, we might be able to produce specific chemical interference which would be destructive to the parasite. At present, we must rely on drugs chosen almost blindly for experimental trial.

For these reasons, the International Health Division Laboratories are studying the physiology of malaria parasites at a more fundamental level than usual. All stages in the complicated life history of the parasite are within the scope of these studies.

In the first place, one staff member is dealing with the sporozoite, the stage at which the parasite is injected into man's blood by anopheline mosquitoes. This staff member is trying to determine what the sporozoite requires to maintain itself and what is the interplay between favorable and unfavorable factors in its metabolism. In the course of these studies, there has been developed a new medium in which sporozoites, ordinarily dead within an hour after removal from mosquitoes,

will survive and maintain their infective potentialities for more than 24 hours, longer than ever before outside the body of the mosquito. This is a first step toward what may eventually be a method to induce the sporozoite to grow and develop in the test tube. Such a method would greatly facilitate the study of its physiology.

Another staff member is working with the exoerythrocytic stage of the parasite, the stage when it is in various tissues but not in its final location, which is always the red blood cell, where it does its chief damage. In these studies, it has been possible to induce the parasite of chick malaria to grow prolifically in fertile chick eggs — more successfully, in fact, than ever before. An attempt is being made to develop culture methods which will provide a sufficient quantity of these exoerythrocytic forms for practical use in studying their metabolism and the effects of drug action.

A third staff member is studying the red blood cell phase of the malaria parasite, trying to determine what are the essential chemical factors for its growth and why it must of necessity be in the substance of a red cell in order to develop. Working with this stage of the parasite, it has been possible to make more direct chemical measurements, not only along traditional lines, but also with the newer radioactive isotopes used as tracers to assist in recording metabolic rates. The aim is to ferret out some weak spot in the nutritive process of this intracellular parasite so that a specific drug attack may be made.

Associated in these studies is another staff member who is attempting to induce the red cell stages to reproduce in artificial environments by test-tube culture methods developed at Harvard University but thus far

not used elsewhere very successfully. The fifth member of this International Health Division malaria research team is the directing and integrating head of the malaria section of the laboratories. He is cooperating in the work on all three stages of the parasite.

A sixth staff member is concerned with malaria research in a somewhat different way. The International Health Division has made his time available as a malaria consultant to the World Health Organization, the United States Public Health Service, the United States Army, and, recently, to the Tennessee Valley Authority. As a member of the Expert Committee on Malaria of the Interim Commission of the World Health Organization, he shares responsibility for shaping worldwide malaria research and control policies. In the United States Public Health Service, he is chairman of the Malaria Study Section of the Research Grants Division and devotes time to the grant in aid program of this country, visiting laboratories of the grantees and assuming, with the Study Section, responsibility for recommending to the National Advisory Health Council approval or disapproval of requests for research grants in aid. For the Army, this staff member serves as consultant to the Surgeon General on malaria research and control policies and also to the Army Medical Department Research and Graduate School, in which for a time during the war he held the post of chief of the Parasitology Division.

The International Health Division is cooperating with the health authorities in Sardinia in carrying out a campaign against malaria in that island. The mosquito responsible for malaria in Sardinia is *Anopheles labranchiae*, a long-established insect belonging to the European *maculipennis* species. If *labranchiae*, which

probably existed in Sardinia before human beings appeared, can be uprooted, an entirely new advance in man's long fight against malaria will have been attained. The plan for this undertaking has been divided into three parts. First there was a stage of preliminary organization devoted to the development of technique, training of personnel and the acquiring of a full acquaintance with the malaria mosquito and its terrain. The second and most important phase in the work is an all-out campaign against the mosquito by spraying the interior of every man-built structure on the island with DDT, and by larvicing all swamps, water sources and other potential breeding foci. This should deliver the death blow. Even if the adult mosquitoes survive the spraying campaign, the antilarval work will keep them from propagating. A third phase of the campaign will be the development of protection against reinvasion through a control service running from 1949 on.

Tremendous difficulties have already been overcome. Money is available from a so-called lire fund derived by the Italian Government from the sale of UNRRA supplies. Certain UNRRA supplies are also used directly. The original budget for 1947 was 300,000,000 lire. Because of the increased cost of living, this has had to be greatly increased. In addition to the funds supplied as explained above, the International Health Division designated \$165,000 in 1947. Before that year approximately \$60,000 from the International Health Division was set aside for this work.

Ninety-two per cent of Sardinia's 1,200,000 people live in villages. An initial spray-painting program during the winter of 1946-1947 and a larvicing of the southwestern fifth of the island from April to November of 1947 were preliminary. These were useful in building

up an organization and in giving experience to the staff. A logistics group has zoned the island for an exhaustive larvicide in 1948. The second spray-painting campaign began in October 1947. In this much depends upon the training of the inspectors. The work is not unlike that required in organizing a miniature war. A small army of employees has to be drilled. The purpose of the entire undertaking is to show clearly whether or not eradication of an indigenous malaria-carrying mosquito can be added to the known feasible anti-malaria measures.

From 1925 to 1931 Professor E. Brumpt, parasitologist and director of the Laboratory of Parasitology of the Faculty of Medicine, University of Paris, with financial cooperation from the International Health Division, directed a malaria field training station in Corsica. At that time it was found that 50 per cent of the children had malaria parasites. Control work in malaria was carried on for a number of years; but since the war, this work has lapsed and the malaria situation has become very serious again.

The French Government is now initiating malaria control work in Corsica. A start on a small scale was made before the end of the year in inaugurating a general survey. This survey is carried out under the auspices of the National Institute of Hygiene, of which Professor Louis Bugnard is the director. Two entomologists have been assigned to the work. House spraying is to start in early 1948. The International Health Division has made available \$3,500 for emergency equipment.

Another malaria control experiment in which the International Health Division cooperates has been going forward in Peru in the Department of Ica since 1946. The striking geographical features of Peru should be a

help in malaria control. Physically, certain sections of Peru consist of isolated mountain valleys. These valleys are almost as independent of each other as islands in the sea. However, they are connected by excellent roads. Spraying of the inside walls of houses in rural areas, combined with larvicing techniques, has been effective in reducing the malaria vector *Anopheles pseudopunctipennis*. The men conducting this work find DDT only half as expensive as Paris green and much more effective. And its use meets with public acclaim because flies, cockroaches, in some cases even mice, seem to disappear.

The Netherlands is the one country in northern Europe where malaria has remained a chronic problem. There was a sharp upsurge of the disease after the war due to the flooding of farmlands by the retreating Germans. To encourage more widespread use of DDT for malaria control and to popularize its use as a general sanitary measure, the International Health Division in the summer of 1947 subsidized the spraying of a town of some 4,200 people in a malarious district in the north. A grant of \$12,500 was used to purchase DDT solution and spraying equipment, and to pay the cost of entomological surveys. A marked reduction in mosquitoes was brought about. The true effect on reduction of cases of malaria cannot be known until 1948. The ultimate purpose of this demonstration is to show that it is possible to eliminate malaria as an endemic disease in the Netherlands.

The International Health Division did some work in Venezuela as far back as 1927-1933 in both hookworm and malaria. This work was resumed when a program of malaria studies was undertaken during the last three months of 1947. With a progressive health department and a strong malaria division under competent leadership, Venezuela has good opportunity for

establishing a research program to obtain basic information on the effect of DDT spraying on malaria mosquitoes. A multiple approach to determine just what DDT can and cannot do is to be accompanied by study of new drugs for the treatment of malaria. The research program will be closely coordinated with the extensive control program under way in various rural areas.

In China there are at least 39 anopheline mosquitoes varying greatly in habits from north to south. Control of malaria must be based upon specialized studies of mosquitoes. At present the International Health Division is interested in a malaria study not far from Nanking. Certain villages in this region are having recurrent epidemics of malaria. It seems that a single mosquito, *Anopheles hyrcanus sinensis*, is responsible. This most widely disseminated anopheline, associated with rice cultivation in China, has never been adequately studied.

In addition to the study near Nanking, a reconnaissance has been undertaken in Taiwan, or Formosa, which a provisional Chinese government took over from Japan in 1945. For 30 years the Japanese authorities had been collecting data on malaria. With this information available, a town in one of the most malarious areas in the island was selected for detailed study. A staff member was assigned to Taiwan in December 1946. By the first of 1947 work was well under way. The headquarters are at Chiao Chow.

Taiwan has been selected as a center for malaria studies in China because it has a year round malaria season. It is intended to do not only research work but also to have demonstration areas where control measures are instituted. Equipment salvaged from the Burma Road program is in use. The provisional government of Taiwan is contributing 11 per cent of the cost. The Na-

tional Institute of Health in China is also making substantial contributions to the work.

Other efforts to combat malaria with an eye on possibly new contributions by DDT went forward with International Health Division cooperation in Mexico, Colombia, Bolivia and Egypt. In Lebanon, of which Beirut is the capital and central city, a start has been made in studying the malaria problem. Data are available on incidence and transmission of the disease. There are three malaria vectors in the country: *Anopheles sacharovi*, which is the chief vector in the coastal area; *Anopheles superpictus*, prevalent in the mountains as well as along the coast; and *Anopheles claviger*, associated with wells, pools and cisterns.

TYPHUS

The increasing importance of murine typhus as a public health problem has brought about an epidemiological study by the State Board of Health in Florida. A state-wide survey pointed to an area around Tampa as a favorable site for intensive study. Two International Health Division staff members are in charge of the animal and entomological investigations. The role of wild animals, as well as pets and other domestic animals, is under close investigation, likewise the part played by the flea. The United States Public Health Service is collaborating with Florida health authorities in this campaign to control typhus by ratproofing buildings, exterminating rats and controlling the ectoparasites of rats with DDT. Studies of the disease in human beings are also under way.

VENEREAL DISEASE

A study of syphilis by the North Carolina State Board of Health, under the direction of Dr. John J.

Wright, professor of public health administration at the University of North Carolina, is receiving International Health Division support. Good relations with the physicians, hospitals, clinics and other agencies in the study area, which includes the Orange-Person-Chatham Health District and the City of Durham, have been built up. Extensive statistical methods are employed to determine the attack rates of syphilis among both the white and colored races. Investigations of contacts of patients with infectious syphilis are carried out in connection with the public health nursing program. Attention is given also to the cost-analysis of treatment in clinic and hospital and by private physician.

HEALTH SERVICES

During the past year substantial aid has been given toward the establishment or development of public health services in Canada, the United States, China, Egypt, Norway, Sweden and several of the Latin American countries. This program of the International Health Division was started some 30 years ago in order to bring modern techniques in preventive medicine and public health within the reach of the average individual, and to stimulate investigation and control of environmental diseases. Throughout the program it has been the policy of the International Health Division to cooperate with state or local governments in making advisory services of staff members available to health centers desirous of improving administrative procedures or setting up demonstrations and surveys.

In reorganizing its Ministry of Health, Peru has incorporated the principle of full-time service for certain positions and has also set up a separate department to supervise the selection of highly qualified personnel needed for specialized services. In addition to support

for this department, the International Health Division is aiding the National Institute of Hygiene, which is now playing an active role in the national health program. There is considerable concentration in Peru on problems of rural health.

The Division of Rural Endemic Diseases of the Bolivian Government received a grant of \$45,000 for continued support of work on diseases of public health importance. Thus far the program has achieved remarkable success in the control of yellow fever and malaria. At the present time there is urgent need for more work in hookworm disease, typhus fever and plague control. Plague is a relatively recent disease in Bolivia and has accompanied the progressive invasion of the country by domestic rats from the south. In 1947 at the invitation of the Government an International Health Division staff member helped to administer the plague service.

The objective of a new program initiated in Egypt during the past year is to demonstrate in cooperation with the Egyptian Government that a village sanitation and health program based on modern local health and preventive medical practices can be established successfully with funds now available. A general survey of public health facilities has begun. It is expected that the survey will serve as the basis for development of an extensive sanitation and local health service within the Ministry of Health.

The public health program in Chile, which has received aid from the International Health Division for several years, has included the successful operation of a demonstration health center in a district of Santiago since 1943. Similar urban health centers have been established in other localities with help from other agencies. The International Health Division is now giving

support to the development of a rural health service in the Province of Aconcagua, an isolated area, mainly agricultural but representing all types of population. Again the problem is to work out a plan of public preventive and curative medicine which will not only reduce morbidity and mortality rates but will be economically possible for the Government.

The program in Mexico is administered by a cooperative central office supported by the Ministry of Health and Welfare and the International Health Division. This office supervises the Tacuba demonstration health unit and training station, located in Mexico City, and a number of training stations for health personnel in several of the states. It also maintains contact with other cooperative projects, such as the malaria investigation and control work in the States of Vera Cruz and Morelos. All of the health units with which the Division is cooperating function as training stations; however, the Tacuba unit is intended as a model health center to train health officers, nurses and sanitary inspectors, and to demonstrate approved techniques in medical treatment and health survey work. Well-trained regional instructors help with the programs in outlying training centers, thus making possible a type of inservice training. The purpose of this system is to give a minimum course of training to all government health personnel, and once this has been achieved to maintain only one or two well-organized training centers for new personnel.

SANITARY ENGINEERING

To keep well, especially in large cities, we need not only medical services but also a good sanitary environment made possible by modern sanitary practices.

Health is obtained only at the price of constant vigilance in detecting epidemic diseases at the initial stages and preventing them from spreading once they have begun. Public health departments in many countries carry on public health engineering activities in their routine work.

During the year the International Health Division engineering representative in the Caribbean area provided consultant services to government departments in Venezuela, British Honduras, Costa Rica, Jamaica and the Dominican Republic that were planning drainage and water supply projects and training programs for special personnel.

A large part of the funds designated for the Kiang Ning Hsien Health Unit in China are being used for the sanitary engineering program. This calls for extension to other villages of a composting experiment supported by the International Health Division in 1946; improvement of the environmental sanitation in several schools; and the establishment or purification of water supplies in various parts of the hsien. As this unit is not far from Nanking it has considerable value as a training and demonstration field to the National Institute of Health and other public health agencies.

In the Province of New Brunswick, Canada, the Department of Health and Social Services has received a grant of \$15,375 to establish a Division of Sanitary Engineering. One of the purposes of this division is to demonstrate the need of full-time qualified sanitary officers.

In Europe the year 1947 was marked by considerable interest in sanitary engineering. In view of the social changes that have been sweeping Europe and the growing recognition of national planning, sanitary engineering now has a chance to play its much needed role in rehabilitation.

Research work can be done more cheaply at the present time in Europe than in any other place in the world. The Continent still has more technically trained men than any other similar area. Because of upset conditions many research workers, at loose ends, are willing to tackle new basic problems connected with good water supply, sewage disposal and pest control.

During the year visits of engineering interest were made by Foundation representatives to France, Switzerland, Italy, Greece, England, the Netherlands, Denmark, Sweden, Finland and Norway. Dean Gordon M. Fair of the Graduate School of Engineering at Harvard and other outstanding North American scientists accompanied staff members on some of these visits.

A grant of \$3,000 was made to the Sanitary Engineering Section of the Netherlands Applied Research Council for research in sewage treatment. Aid was also given to the Institute of Preventive Medicine in Leiden, which is closely associated with the sanitary engineering department of the Technical University at Delft.

Before modern techniques of sanitation can be widely adopted in Europe, it is necessary that their cost be lowered. This is particularly true in the case of sewage treatment. Even in America, the high cost of this service has limited its use. In Europe, with its high population density and lower standards of living, sewage treatment is even more necessary than in America but is less widely used. In keeping with the point of view that European scientists, because of their specialized training in fundamentals, are particularly suited to carry on research of a fundamental character and that research work may be done at less cost in Europe than in America, a study of this basic problem in Europe appears highly desirable. Further, the development of

research in sanitary engineering in Europe should be encouraged because of its beneficial effect on the promotion of sanitary engineering. Research work carried out in a scientific manner can be a great stimulus and stabilizing influence for the young public health engineering profession.

HEALTH CARE IN THE UNITED STATES

In the United States certain phases of preventive public health work are still more or less in the experimental stage and are supported by private as well as public effort. An instance of this has been the Health Insurance Plan of Greater New York which, as noted in the annual report of the International Health Division last year, has received substantial International Health Division support. The Health Insurance Plan is a non-profit, membership corporation authorized to conduct a voluntary health insurance program in the New York area. In 1947 the sum of \$138,000 was made available by the International Health Division to this organization.

The Health Insurance Plan is now the largest, complete prepaid medical service in the United States, serving 116,000 persons. Over 600 physicians and specialists work in 24 groups. Each group is planning a fully equipped medical center where subscribers may find special services all in one building. The plan covers practically all types of illness. Care is given at home, in doctors' offices, in medical group centers and in hospitals. The service is open to employee groups with certain limitations as to salary. The employer pays at least half. The cost for a single employee is in the neighborhood of \$.08 per day. The Health Insurance Plan expects to reach the stage of being fully self-supporting in 1948.

The Subcommittee on Medical Care of the American Public Health Association received a grant of \$25,000. This committee, during 1947, completed a study of the medical care program in Maryland. It is also making a study of the scope and character of the medical care provided throughout the country by local health departments. It is especially interested in the role that the health department has to play in some of the newer medical care programs, such as mental hygiene and cancer control. In general, it is studying the formulation in detail of specifications of a suitable national medical care program.

The Department of Public Health and Medical Administration in the School of Public Health of the University of California received \$26,760 in support of its teaching program. An increasing number of premedical students are electing courses in the public health field. One of the objectives of the school is the preparation of selected men who anticipate going into hospital or medical care administration. This school was established in 1944. It now has a total enrollment of 751 students.

INSTITUTES OF HYGIENE

The Institute of Hygiene in Manila, which was given substantial support by the Medical Sciences and the International Health Division in prewar years, has received a grant of \$50,000 toward the purchase of equipment. Although the institute continued to function during the war with a minimum of interference from the occupation forces, it suffered major damage during the liberation of Manila, along with many other important public buildings. Complete reconstruction plans have been drafted, and large-scale repair work is in prospect for next year. In spite of these difficulties, the institute has resumed activity. Closely affiliated with

the University of the Philippines, it offers important courses in various public health fields to a number of university groups, including public health nursing students, nursing students of the Philippine General Hospital, and medical, engineering, dental and pharmacology students. Graduate teaching is to be resumed as soon as new equipment can be installed.

With the aid of funds allocated by the International Health Division since 1945, the London School of Hygiene and Tropical Medicine has carried on a program for rehabilitation of teaching and public health personnel. A number of two-year fellowships have been allocated each year to young physicians of ability. In 1947 the International Health Division also made available a small fund for the purchase of laboratory centrifuges needed by this school.

In the way of general help to European institutes of hygiene, the International Health Division during 1947 made available 20 microfilm readers purchased at a cost of \$2,500 at the end of 1946. These were distributed to institutes in Austria, Czechoslovakia, Finland, Greece, the Netherlands, Hungary, Italy and Yugoslavia. Each recipient was given in addition a one-year subscription to the *Bulletin Analytique*, published by the Centre de Documentation de la Recherche Scientifique, which carries all important scientific literature. The readers are rendering a useful service in making available current scientific literature which would otherwise be unobtainable because of shortages of foreign currency for subscriptions to periodicals.

NURSING EDUCATION

During the past year one of the significant developments in the public health field has been a new European interest in nursing. The critical shortage of nurses

plays a part, but there is also an acceptance of the idea that full medical practice is dependent on auxiliary staff and especially on the nurse. International Health Division staff members visited Yugoslavia, Czechoslovakia, Germany, Greece, Portugal, Denmark, Finland, England, Norway, Poland, Sweden and Switzerland. Nursing offers in some respects an attractive career, in view of the preponderance of women over men in Europe today. With regard to the nursing situation, Poland is relying strongly on an expansion in nursing education. Eighteen schools of nursing are in operation, and these are scattered throughout the country in rural as well as urban areas. The International Health Division gave funds for sets of basic nursing textbooks for the schools now active. The Cracow School of Nursing received an appropriation of \$12,000 for the purchase of laboratory equipment and uniforms for student nurses.

In Yugoslavia the Zagreb School of Nursing now enrolls 300 students in a three-year course. This country is in the midst of a plan to establish 25 schools, aiming to furnish within five years 7,000 graduates. An International Health Division grant to the Zagreb School of Nursing for the purchase of equipment and for repairs of the building made in 1946 has been extended to the middle of 1948.

A travel grant was given to the former president of the Czechoslovakian Nurses' Association for observation of nursing in America for a six-month period in 1947.

The School of Nursing in Lisbon, which was established with Foundation aid, is showing steady growth. All its graduates are readily absorbed in the nursing field.

In the northern countries of Europe and in England, various committees are active in studying nursing services, nursing needs and types of nursing education required. The committees in each of these countries are unanimous in recommending more and better graduate nursing personnel. There is a need for supervisors, head nurses and teaching personnel. There is growing recognition that a satisfactory solution of the nursing shortage cannot be found without well-qualified personnel in the field of nursing education.

Public health nursing in Norway received support through a five-year grant of \$15,000, made in 1946 for the establishment of a postgraduate training course in public health nursing. This course graduated a first class of 25 in July 1947. The training period has now been extended from six to nine months, and a second class of 25 was admitted in September.

The Bon Secours School of Nursing in Geneva received an International Health Division grant of \$60,000 for aid over a five-year period, during which there will be a reorientation of the curriculum to strengthen the preparation for public health nursing. This school is now affiliated with the Medical School of the University of Geneva.

A grant of \$5,000 went to the International Council of Nurses to help meet the traveling expenses of European and Asiatic nurses attending the Ninth Congress of Nurses at Atlantic City in May 1947. Registered at the congress were 748 nurses from 39 countries other than the United States. The total registration of nurses was 6,700. Prominently represented were: India with 6, the Netherlands with 7, Palestine and Brazil with 10 each, Mexico with 13, Sweden with 17, Finland and Norway with 26 each, China with 27, the Philippines

with 32, Great Britain with 136 and Canada with 309.

A number of South American countries are also engaged in long-range planning for better nursing education and nursing service. The Peruvian Ministry of Health has approved a five-year program to improve existing schools of nursing, and Uruguay plans to establish a modern school of nursing in connection with the new University Hospital. The International Health Division has contributed funds toward the new school and also aids nursing education in Venezuela, Chile, Ecuador and Colombia.

In India the most important recent development has been the establishment, under Central Government auspices, of a Central Nursing Council and the College of Nursing in Delhi. The college is affiliated with Delhi University. It offers the degree of Bachelor of Science with honors in nursing. An International Health Division staff member was available from 1946 to 1947 as consultant and as a member of the teaching staff.

FELLOWSHIPS AND TRAVEL GRANTS

The International Health Division has long had a policy of assisting public health education through support to schools and also through the maintenance of a fellowship program. Each year several hundred persons are given fellowships to study public health subjects in countries other than their own. This type of aid also includes travel grants given to men who are no longer students but whose work can be benefited by a period of study or observation abroad. These grants have been especially useful in the years succeeding the war period when many experts in the public health

field lost track of what was being done in other countries.

The International Health Division in 1947 directed the studies of 147 individuals to whom it had granted fellowships. The International Health Division also made possible 66 travel and training grants during 1947.

THE MEDICAL SCIENCES

THE MEDICAL SCIENCES STAFF

During 1947

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Associate Directors

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THE MEDICAL SCIENCES

THE main effort of the Medical Sciences during 1947 went to its program in psychiatry, neurology and physiology. There were four grants for general support of medical school departments of psychiatry, but most of the projects supported concerned specific research in such subjects as brain chemistry and surgery, genetics of mental disease, fetal injury, epilepsy and psychosomatic medicine. Two grants gave aid to organizations which are interested in trying to improve the standards of psychiatric care in institutions throughout the country.

With the exception of a grant to the University of Edinburgh and another to the Wilhelmina Hospital in Amsterdam, all the grants mentioned above went to institutions in the United States. Other projects in Europe, the Near East and South America receiving support included, in the field of medical education, aid to the American University of Beirut; in the field of preventive medicine, a grant to the University of Brussels; and in endocrinology, support to the Institute of Biology and Experimental Medicine in Buenos Aires, directed by Dr. Bernardo A. Houssay.

The Foundation provided funds to defray traveling expenses of European delegates to a postwar international congress on pediatrics held in New York. Through a program of fellowships and grants in aid, about 110 persons were enabled to spend some time in the United States or in countries other than their own in getting

acquainted with recent progress in their chosen study field.

One grant gave aid toward planning dental education. A prominent medical school for Negroes in the United States received general support. Indiana University received aid toward the development of library collections for its new Institute for Sex Research.

PSYCHIATRY, NEUROLOGY AND PHYSIOLOGY
WASHINGTON UNIVERSITY
NEUROPSYCHIATRY

A practical example of modern trends in psychiatric training and psychiatric care is the program conducted by the Department of Neuropsychiatry of the Washington University School of Medicine. Reorganized in 1938 with Foundation aid, the department has been successful in establishing psychiatric treatment as one of the essential clinical services available in the general hospitals of the medical center. In line with modern theories of the close relationship between mental and physical illness, psychiatric services have become an integral part of the general hospital organization. Not only does this tend to remove the stigma from mental illness, it also makes possible prompt diagnosis and referral of patients. Since a number of patients with acute or subacute psychiatric conditions, often in combination with other disease, are frequently admitted to any large hospital, it means, too, that the medical needs of the community are met more adequately. Still another advantage of including psychiatric services in a general hospital is that medical and nursing students gain necessary experience in recognizing and managing personality disorders.

The Department of Neuropsychiatry offers courses in

all four years of the medical school, giving special emphasis to instruction in the psychiatric aspects of illness as a part of medical clerkships. It is responsible for the training of twelve residents in psychiatry and two in neurology in the Barnes and McMillan Hospitals. These hospitals have a 54-bed ward and a psychiatric consultation service. Also under the direction of the department are resident training programs at the Bliss Psychopathic Institute of the St. Louis City Hospital and at the Veterans Administration Hospital and Mental Hygiene Clinic. In addition, instruction is available for auxiliary specialties, such as psychiatric nursing, occupational therapy and physiotherapy. Staff members and students take an active part in the psychiatric outpatient service in the Washington University clinics, which cared for 1,158 new cases during 1946.

The department has taken an increasing part in psychiatric services for veterans and operates two veterans' clinics. One of these is a section of the Washington University clinics, established in 1946 at the request of the Veterans Administration. Any veteran who feels that he needs immediate help is accepted, and the range of referrals is large, the last count showing patients from 38 sources. If in the psychiatrist's opinion, a veteran cannot be helped in a comparatively short time to gain his previous level of adjustment, he is referred to an appropriate clinic or private psychiatrist. For veterans, as well as psychiatric patients generally, every effort is made to maintain continuous contact with members of the family in order to help them understand the patients' needs.

Although hampered somewhat by heavy clinical and teaching duties, members of the department have undertaken several interesting research projects. They in-

clude the development of new methods for evaluating changes in personality functions following psychotherapy; biochemical studies of patients with mental disorders; chemotherapy; physiological studies of tremor and spastic states; and studies of the forebrain in relation to behavior disorders.

The 1947 grant of The Rockefeller Foundation is for \$150,000 designated toward the support of the Department of Neuropsychiatry over a five-year period. The purpose of the grant is to free staff members from clinical duties so that they may devote additional time to research.

UNIVERSITY OF EDINBURGH NEUROSURGERY, NEUROLOGY AND PSYCHIATRY

In the Neuropsychiatric Unit at Edinburgh, emphasis on war injuries to the brain and nervous system is gradually giving way to interest in the equally urgent problems arising in civil life. The unit now serves as a center for the treatment and study of neuropsychiatric conditions in the whole of Scotland. It continues in its location in the Royal Infirmary and in the Brain Injuries Unit, Bangour E. M. S. Hospital, near Edinburgh.

Mr. Norman Dott, head of the unit, has contributed to making neurosurgery a recognized specialty in Great Britain. Since 1935 his work has received aid from the Foundation. A part of the funds was used in the establishment of clinical work. In 1947 the Foundation appropriated \$20,250 as a final grant for research in neurosurgery, neurology and psychiatry. The University of Edinburgh and the Scottish Department of Health have recently taken over major responsibility for the support of the unit.

The Neuropsychiatric Unit has made substantial

progress in respect to treatment techniques, scientific research and the training of specialists. There has been a steady expansion of public and university demands on the unit's services.

At the present time patients suffering from damage to the central nervous system, from disease or injury, are investigated by a closely integrated team representing neurology, neurosurgery, psychiatry and psychology. Treatment through rehabilitation and resettlement is controlled by this team. The Ministry of Labor cooperation with the unit for the resettlement of patients of all types has been strengthened by the recent introduction of the Disabled Persons Employment Act.

UNIVERSITY OF CHICAGO

PSYCHIATRY

Research on nervous system function has developed in a striking manner in the Chicago area during the past five years. Workers at the University of Chicago, Northwestern, the University of Illinois, and the Institute for Psychoanalysis maintain close contact with each other and the numerous research projects in progress at each institution.

The Rockefeller Foundation has taken an active interest in the development of psychiatry at the University of Chicago since 1933. A new grant of \$150,000 aids teaching and research in the Division of Psychiatry over a five-year period. The chairman of the division is Dr. Henry W. Brosin, who served as an Army consultant during the war.

In addition to the regular teaching program, the division provides seminars in psychotherapy to give students and house officers an opportunity to obtain first-hand clinical supervision. Extensive testing services

and all types of treatment are offered for selected cases of neuroses and psychoses. In connection with their responsibilities to the student health service, staff members plan to follow the careers of successive classes of freshmen medical students. The division also conducts a vocational guidance clinic for the general public.

A variety of research projects are under way. These include clinical studies of emotional factors in gastrointestinal and blood vessel disorders, and a special study of personality changes in the infectious disease, undulant fever. Professor Ward C. Halstead devotes his entire time to a detailed and highly technical analysis of the function of the frontal lobes of the brain. These parts of the nervous system reach by far their most elaborate development in man and are thought to be of crucial importance in the most characteristically "human" elements of man's behavior. The year 1947 marked the completion of the first stage of Dr. Halstead's studies with the publication of his book, *Brain and Intelligence: a Quantitative Study of the Frontal Lobes*.

UNIVERSITY OF CINCINNATI PSYCHIATRY

During the past five years the University of Cincinnati has developed a progressive Department of Psychiatry. It receives enthusiastic support from the university, the Community Chest and several other philanthropic organizations and individuals. In 1947 The Rockefeller Foundation allocated \$175,000 to aid in the development of teaching and research in psychiatry over a five-year period under the direction of Dr. Maurice Levine, recently appointed chairman of the department. In this post Dr. Levine directs not

only the teaching program but also inpatient and outpatient psychiatric services of the Cincinnati General Hospital. The outpatient service is a large and active unit serving public and private welfare, health and legal agencies.

Activities of the Department of Psychiatry are closely integrated with those in other sections of the College of Medicine, particularly the Departments of Medicine, Neurology and Pediatrics. An informal relationship with the Federal Narcotics Hospital at Lexington, Kentucky, has proved valuable in studying the psychiatric implications of drug addiction. Both the undergraduate and graduate teaching programs have been greatly expanded during the past year. A total of 16 interns, residents and graduate fellows are in training. Much of the teaching is carried on in small seminar groups or in personal conferences between teachers and students. This has proved the most successful method of teaching in a field which as yet suffers from a lack of knowledge which can be presented in textbook or lecture form. The department also takes an active part in educational talks to the public in order to explain the mechanics of existing community psychiatric facilities and describe specific areas of interest, such as employee counselling, minority problems, psychosomatic medicine, problems of returning veterans and of working mothers and their children.

DALHOUSIE UNIVERSITY PSYCHIATRY

The Maritime Provinces of Canada, although neither heavily populated nor wealthy, play an important role as the source of teachers and physicians who go out to enrich their professions in many parts of North America.

The Faculty of Medicine of Dalhousie University (Halifax, Nova Scotia), the only medical faculty in these provinces, exercises a considerable influence on the development of medicine throughout eastern Canada.

The Department of Psychiatry at Dalhousie is small but growing rapidly. Formal teaching began in 1941 with Dr. Robert O. Jones appointed as head of the department. Recognition as a major department in the faculty has been achieved. An important part of the teaching and clinical activities is carried out in the Victoria General Hospital to which the Foundation has in the past given funds for improvement of teaching facilities. The Victoria General Hospital now has a new fourteen-story, completely modern building.

Patients in the Psychiatric Clinic have increased from 196 in 1941 to 812 during 1945-1946. Most of the patients, coming from various parts of eastern Canada and Newfoundland, were referred to the hospital by medical practitioners, and increasingly by legal agencies, schools and social service organizations anxious to take advantage of the psychiatric services offered by Dalhousie University.

The general public of this part of Canada has also developed considerable interest in the new psychiatric work. The Rotary Club of Halifax supports a social service worker to aid in the affairs of the Psychiatric Clinic. There is group cooperation between the Dalhousie Department of Psychiatry and the Deputy Minister of Health and Welfare. High on the list of new projects are ambulatory clinics for rural areas.

The teaching activities of the psychiatric service include a public clinic for nurses, social workers and teachers of mentally retarded children. The Victoria General Hospital, in addition to increasing its inpatient

facilities, has made arrangements for cooperating with neighboring hospitals in order to give adequate training, especially with regard to the more serious mental diseases, to students within the department. The amount of the grant made available by the Foundation for the maintenance of teaching in psychiatry was \$19,500 for three years.

BURDEN NEUROLOGICAL INSTITUTE

NEUROPHYSIOLOGY

Since its founding in 1939 the Burden Neurological Institute, Bristol, has devoted itself to the investigation of nervous and mental disorders, chiefly from the laboratory point of view. It assists in the diagnosis and treatment of difficult cases requiring special methods of investigation at various mental hospitals throughout the West Country of England. The laboratory buildings, including modest facilities for the treatment of patients under study, occupy grounds immediately adjoining Stoke Park, an institution for the mentally deficient. Close working relations have been established with the medical school of Bristol University and the Bristol Mental Hospital.

Although during the war the institute was mainly engaged on problems arising from the emergency, it has established an active research program in its three divisions, biochemistry, endocrinology and electrophysiology. The use of electric shock therapy and the surgical procedure known as prefrontal lobotomy were introduced into England by this institute. Work with electric shock therapy has led to researches on the action of antiepileptic drugs, for once the threshold for the electric convulsive stimulus has been determined in psychotic patients under treatment it is an easy matter

to determine the degree to which the threshold is raised by various forms of antiepileptic drug treatment.

A large part of the work in electrophysiology, under the direction of W. Grey Walter, has involved the design and construction of new apparatus for use in the investigation and treatment of brain injuries, tumors and other disorders. To facilitate the long-term investigation required to develop these devices, The Rockefeller Foundation allocated \$50,625 to the Burden Neurological Institute in 1947.

COLUMBIA UNIVERSITY GENETICS OF MENTAL DISEASE

Columbia University has received \$31,500 for continued support of the work of Dr. Franz J. Kallmann in the genetics of major mental diseases over a three-year period. This work also receives aid from the New York State Department of Mental Hygiene as part of a permanent research program in medical genetics at the New York State Psychiatric Institute and Hospital. In the past three years this work has dealt more particularly with the significance of genetic factors in the nervous and mental diseases peculiar to old age.

Interesting use is made of twins. A survey of representative twin pairs over 60 years of age residing in New York State, has grown far beyond the scope anticipated. Remarkable cooperation on the part of the public, the medical profession and official agencies enabled Dr. Kallmann to identify some 1,259 senescent twin index cases distributed in the general population and throughout 80 institutions in the State. A methodical search was made for older twins who had remained in their communities without requiring old age assistance. Carefully formulated appeals to over 500 news-

papers and local radio stations brought the number of non-institutionalized cases located to 851.

The research staff is employed to keep all of these twin index pairs under close observation for the remainder of their lives. Case histories, in so far as these have been compiled, yield unique information on the complex interplay of constitutional, social and cultural factors in the development of mental disease in old age.

Previously, analyses of 691 twin pairs (involving all age groups) and their siblings have indicated that the specific genetic factor involving predisposition to schizophrenia is probably recessive and autosomal. On the other hand constitutional inability to resist the progression of schizophrenic psychosis may be determined by a non-specific and multifactorial genetic mechanism. It is emphasized that although these genetic findings cast doubt on a purely environmental etiology they are entirely compatible with the concept that schizophrenia can be successfully treated as well as prevented by various means.

COLUMBIA UNIVERSITY BRAIN CHEMISTRY

Evidence has accumulated that glutamic acid occupies a unique place among the amino acids in so far as metabolism and the functioning of nervous tissue are concerned. Dr. Heinrich Waelisch of Columbia University and the New York State Psychiatric Institute, with his colleagues, has shown that it is the most effective of several amino acids in activating the enzyme systems involved in the synthesis of a naturally occurring substance (acetyl-choline) of great influence on nervous activity. Dramatic, although tentative, evidence of the significance of glutamic acid has been

obtained in preliminary clinical trials. In patients with petit mal epilepsy oral ingestion of large amounts of glutamic acid seems to increase resistance to mood swings. Intravenous injection sometimes clears the mental confusion resulting from shock therapy. Other workers have shown that the same acid improves the maze-learning ability of rats. Of special interest are preliminary experiments with mentally retarded children. Large doses of glutamic acid administered over a substantial period of time in many cases raised low intelligence quotients and improved the general personality of the children.

With the cooperation of the Bureau for Children with Retarded Mental Development of New York City, Dr. Waelsch has started a full-scale experiment with about 80 mental defectives. To determine the clinical effectiveness of glutamic acid, the children are fed the acid and placebos in alternate periods and their mental performance is tested.

To elucidate the question of possible glutamic acid deficiency or abnormal metabolism in humans who benefit from administration of the acid, laboratory investigations of substances which interfere with glutamic acid or general protein metabolism are under way. These studies may yield valuable information on the amino acid requirements and utilization of the nervous system.

The Foundation has allocated \$19,500 toward research under Dr. Waelsch over a three-year period.

GEORGIA STATE COLLEGE FOR WOMEN MEDICAL GENETICS

A grant of \$10,000, available for five years, was made in 1947 to the Georgia State College for Women for research in medical genetics under Dr. Clyde Keeler.

Over a period of years Dr. Keeler has collected evidence of genetic influence on the temperament and behavior of mammals. For example, the gene for a cinnamon colored coat in the Norway rat produces not only the cinnamon coat but also the following: large adrenals, small gonads, large hypophysis, small olfactory bulbs, small brain, large thyroid, increased body size, and great strength and tameness. As cinnamon, like other inherited factors, can be bred in or out of animals at will, Dr. Keeler's finding opens up new possibilities in genetic manipulation. If the fancy coat color is lifted out, all modified characteristics associated with it are lifted out also, including the mutant gene that caused the group of altered reactions.

This explains the relative tameness of black, hooded and albino rats, mutant varieties of the fierce gray Norway rat. By combining these three slightly modified varieties, their patterns of alteration are actually summated to a certain extent, and in the new creature form, function and behavior are further modified. The tame creature so produced is the common albino rat used in medical laboratories. It seems probable that personality traits, such as the noisiness and nervousness of red cocker spaniels, and the relative stupidity and clumsiness of buckskin ponies may be similarly explained.

The curly gene in rats imparts a tendency to gigantism, and the hooded gene a tendency to dwarfism. When these two genes are combined in the same rats they correct each other, and composite creatures of normal size result.

In the near future Dr. Keeler hopes to undertake analytical genetical studies of human beings. The nearby Milledgeville State Hospital, with some 10,000 mental patients, offers opportunities for these studies,

and State authorities have made available facilities for the work.

WILHELMINA HOSPITAL PSYCHOSOMATIC MEDICINE

During the German occupation of the Netherlands, Dr. Joannes Groen, a specialist in internal medicine dismissed from his post at the University of Amsterdam, became interested in psychosomatic medicine. Unlike English and American workers, physicians on the Continent have thus far given little attention to emotional causes of apparently organic disease. Dr. Groen is now in charge of one of the two medical services of the Wilhelmina Hospital, a large municipal institution affiliated with the university. With the collaboration of staff members of the Department of Psychiatry he proposes to continue his fundamental investigations and also to continue acquainting Dutch practitioners with current theories on the psychological origin of disease. In preparation he spent the first six months of 1947 visiting clinics in the United States. The university and the hospital have each placed two wards of twenty beds at the disposal of the new program.

Dr. Groen received a fellowship from the Foundation for his trip, and a three-year grant of \$20,000 was allocated to the Wilhelmina Hospital in support of the research program in psychosomatic medicine.

UNIVERSITY OF ILLINOIS RESEARCH IN EPILEPSY

During the past three years Dr. Frederick A. Gibbs of the Neuropsychiatric Institute of the University of Illinois has developed a new program for studies of epileptic disorders and brain function. To assure an

adequate number of experimental subjects, he has established a consultation clinic for epilepsy, serving a wide area. The Dixon State Hospital provides a large number of severely ill patients for more searching investigations. The program is receiving aid from The Rockefeller Foundation in the amount of \$27,000 over a three-year period.

Analysis of electrical activities of the brain makes it possible to trace certain periodic oddities of behavior to foci of abnormal activity similar to those which in other areas of the brain lead to frank convulsions. In many cases surgical removal of the offending area restores the patient to normal life. Another method of studying epileptic seizures, now under experiment, is stimulation in the depths of the brain by means of the Horsley-Clarke technique which has been adapted for use on humans by a member of Dr. Gibbs' group. Interesting data on seizure discharges have been obtained with electroencephalographic studies during natural and drug-induced sleep. The group also carries on investigations of the mechanism of the blood flow, and the supply of oxygen, sugar and other nutrients to the brain. Epileptogenic brain substance removed at operation is subjected to enzyme studies.

COLUMBIA UNIVERSITY

PRENATAL INJURIES

For a long time it has been known that heavy doses of X-ray irradiation to a mother early in pregnancy adversely affect embryological development. A significant proportion of infants born after such radiotherapy have faulty development of the central nervous system. More recently it has been shown by observations originally made by two Australian physicians that

German measles occurring in the mother during the first two or three months of pregnancy may lead to a high proportion of very serious congenital malformations, notably cataracts, heart malformation, deafness, or malformation of the brain. Since German measles is an extremely mild infection, it seems quite likely that other infectious diseases, including influenza and mumps, as well as conditions such as malnutrition may also have deleterious effects. Furthermore, increasing knowledge of respiratory physiology, together with the widespread employment of obstetrical anesthetics which depress respiration, have pointed to the possibility that various developmental errors of the nervous system may be due to inadequate oxygen supply during the first few hours of life.

In support of a five-year study of the effects of fetal and neonatal injury on growth and functional development of the brain and other structures, The Rockefeller Foundation has allocated \$75,000 to the Department of Pediatrics of Columbia University.

Professor Rustin McIntosh, who is to conduct the investigation, proposes to study the effect of infections occurring during the first three months of pregnancy on the infant born at the end of that pregnancy. He also expects to measure the oxygen saturation of newborn infants and, by following their mental and neurological development over a three-year period, to obtain reliable data on the effects of neonatal anoxemia. The project is a joint venture of obstetricians and pediatricians, beginning with the selection of cases in the prenatal clinic and continuing until the infant has reached the age of two or more years. After the infant is born special attention will be given to the detection of congenital malformations; the techniques of study will

include physical examination, roentgenography and psychometric grading. Over a five-year period, it is planned to collect the histories of 5,000 cases.

Although the gravest abnormalities of the circulatory systems and such nervous diseases as choreoathetosis, spastic paralysis and some forms of feeble-mindedness offer little hope from the standpoint of therapy, if it can be proved that some at least are traceable to controllable events in fetal and early postnatal life, the road to intelligent prevention will be considerably illuminated.

MASSACHUSETTS INSTITUTE OF TECHNOLOGY MATHEMATICAL BIOLOGY

Through a five-year grant of \$27,500, The Rockefeller Foundation is supporting joint research in mathematical biology under Professor Norbert Wiener and Dr. Arturo Rosenblueth. Professor Wiener is a mathematician connected with the Massachusetts Institute of Technology, and Dr. Rosenblueth, formerly assistant professor of physiology at the Harvard Medical School, is director of research at the National Institute of Cardiology in Mexico. A plan has been arranged permitting these men to visit each other's laboratories for six-month periods to continue collaborative work begun three years ago. They are particularly interested in mathematical analyses of activity in the nervous system, and thus far have developed a formula to describe the conduction of excitatory impulse over heart muscle so that it may be checked by experiment. They are also working on the subject of flutter and fibrillation in the heart.

Both Dr. Wiener and Dr. Rosenblueth are leaders in an active group of investigators representing mathe-

matics and biology, as well as related fields such as psychiatry, cultural anthropology and sociology. Under the auspices of the Macy Foundation the group meets semiannually to discuss ways and means of applying recent mathematical discoveries to biological and social problems.

NATIONAL MENTAL HEALTH FOUNDATION PSYCHIATRIC CARE

The average person is still lamentably unaware of the tremendous impact of mental afflictions on society and the toll that mental diseases exact in human suffering and economic loss. To help the public get reliable information concerning the prevention and care of mental illnesses and deficiencies there has recently been founded a charitable corporation known as the National Mental Health Foundation, devoted to the improvement of care for the mentally ill. Its program consists of three closely related efforts — recruitment and training of mental attendants, briefing and compilation of state laws on care of the insane, and education of the public. The Rockefeller Foundation has allocated \$50,000 toward the support of the National Mental Health Foundation over a two-year period, one half of which is contingent on substantial support from other sources.

Some ten million persons in the United States are mentally ill or deficient. One out of every six or seven men in the prime of life proved unacceptable for service in the recent war by reason of neuropsychiatric disabilities. To take care of this problem, preventive and curative facilities are notably inadequate. Only one million of the mentally ill and deficient are in hospitals. Not nearly enough psychiatrists are available. Twenty-five

states are without a single community clinic to give psychiatric treatment. Little has been done to provide psychiatric aid in institutions such as schools, prisons and factories, where incipient cases might be checked. Most hospitalized mental patients are accommodated in public institutions which suffer from inadequate legislative appropriations, shortage of trained personnel and lack of adequate research and treatment facilities. The system in its present form is costly to society in both money and human suffering.

The National Mental Health Foundation was founded by a group of conscientious objectors who were introduced to these deplorable conditions when they were drafted for work as hospital attendants during the war. In the attempt to create a more active concern about these matters, first efforts have been directed toward the preparation of educational materials for the lay population and for personnel in the institutional field. A series of radio programs has also been produced. A monthly publication is compiled and sent out to federal, state and local institutions. A large mass of material on state laws has been abstracted for publication.

In order to relieve the acute shortage of attendant personnel, groups have been organized to cooperate with the American Red Cross in organizing demonstration units similar to the "Grey Lady" groups. An effort is made to reach community organizations and to initiate voluntary aid groups.

AMERICAN PSYCHIATRIC ASSOCIATION PSYCHIATRIC NURSING

Various branches of the medical profession and a large segment of the lay population have become concerned about the standards prevailing in state-

supported mental hospitals in the United States. One of the difficulties has to do with training qualifications for professional and semiprofessional personnel charged with the daily care of mental patients. The Committee on Psychiatric Nursing of the American Psychiatric Association has been studying the situation since 1942, and considerable progress has been made in the establishment of standards for psychiatric nursing and patient care.

A survey questionnaire sent out to some 482 hospitals in the United States and a number in Canada revealed that only about half of the psychiatric hospitals have teaching affiliations with training schools in general hospitals. Every effort is being made to encourage the development of teaching programs adequate for affiliation. Much attention has been given also to the building up of inservice training for nurses and attendants on the staff of mental hospitals. A training manual for attendants in mental hospitals, prepared by Mrs. Laura W. Fitzsimmons, formerly the nursing consultant, has been widely accepted as an authoritative text in the field.

Methods for accrediting training schools for psychiatric nursing, as is the practice for other branches of medicine, are under study, and 43 of the 100 schools in operation have been placed on the committee's approved list. A sample standard curriculum (for a minimum 12-week course) and training materials are distributed to aid non-accredited schools to attain desired standards. The curriculum was prepared in collaboration with the National League of Nursing Education.

The committee's budget thus far has been entirely met by Foundation grants. This year the American

Psychiatric Association will contribute funds to the program and at the end of three years when the current Foundation grant of \$15,000 expires has agreed to assume responsibility for continuing the program.

ENDOCRINOLOGY

INDIANA UNIVERSITY INSTITUTE FOR SEX RESEARCH

During the past nine years Dr. Alfred C. Kinsey, professor of zoology at Indiana University, has conducted a comprehensive survey of the sex habits of human beings. Publication of analyzed results began in 1948 with an initial volume entitled *Sexual Behavior in the Human Male*. Other volumes to follow will deal with sex behavior in the female, sex factors in marriage, legal aspects, sex education and related problems. The materials incorporated in these studies are based on exhaustive examination of previous literature in the field, as well as on scientifically collected histories from representative segments of the population. The ultimate goal is to collect 100,000 interviews over a 20-year period. Up to 521 items are explored in each case history. Dr. Kinsey and his associates have placed emphasis on the development of sound interviewing techniques in order to obtain complete and truthful information. It is their aim to set forth the facts in a purely scientific manner and without bias, to increase knowledge in a field which has usually been treated in an atmosphere of secrecy, ignorance or hypocrisy. In the words of the authors, "It is a fact-finding survey, in which an attempt is being made to discover what people do sexually, and what factors account for differences in sexual behavior among individuals, and among various segments of the population."

Dr. Kinsey's survey has received substantial support during the past six years from the National Research Council's Committee for Research in Problems of Sex with funds supplied by The Rockefeller Foundation.

In the course of his studies Dr. Kinsey has had occasion to develop specialized collections of books and manuscripts, chiefly in the field of human biology. In view of the continued expansion of his project and the need for a central library in this field, an Institute for Sex Research has recently been established on the Indiana University campus to house and administer research material, libraries, case histories and other materials relating to research on sex behavior. To aid in the purchase of several book collections now on loan and of other books needed to further current studies, The Rockefeller Foundation in 1947 allocated \$14,000 to Indiana University.

INSTITUTE OF BIOLOGY AND EXPERIMENTAL MEDICINE, BUENOS AIRES

The Institute of Biology and Experimental Medicine in Buenos Aires was established in 1944 to provide research facilities for the eminent physiologist, Dr. Bernardo A. Houssay, and his associates, dismissed from their university posts for political reasons. With a staff which has increased to 24 it carries on outstanding research in endocrinology and the physiology of the circulatory system. English and French translations of an authoritative text on human physiology by Drs. Houssay, J. T. Lewis, O. Orías, E. Braun Menéndez, E. Hug, and V. G. Foglia are soon to be published.

The fact that the Institute of Biology and Experimental Medicine is a private enterprise free from partisan control has won it friends among those concerned



Photograph Excised Here

Shop for occupational therapy, Neuropsychiatric Division,
Washington University Medical Center.



Photograph Excised Here

National Institute of Cardiology, Mexico, D. F.



Photograph Excised Here

Research in genetics, Georgia State College for Women.



Photograph Excised Here

Institute of Hygiene and Social Medicine, University of Brussels,

for the future of science in Argentina. Some 60 or more individuals and organizations contribute to its support, notably the Sauberan Foundation in Argentina. The Rockefeller Foundation, which began to contribute toward Dr. Houssay's research 10 years ago, continued its support in 1947 through a grant of \$15,000. Stimulated by the example of this institute, another private institute for medical research has been established at Córdoba, and a section of the Buenos Aires institute has branched off as the Institute of Biochemistry financed by the Campomar Foundation. These institutes are independent of each other but maintain close working relations. They serve as valuable centers for training young teachers and investigators.

For some years Dr. Houssay and his colleagues have been engaged in studies of experimental diabetes, the physiology of the pancreas and other ductless glands, kidney functions, and high blood pressure. In 1947 Dr. Houssay received half of the Nobel Prize in Medicine for his discovery of the significance of one of the hormones produced by the frontal lobe of the pituitary body.

PREVENTIVE MEDICINE

WASHINGTON UNIVERSITY PUBLIC HEALTH TEACHING

In recent years there has been an increasing public demand for greater interest on the part of the medical profession in maintaining community health and in providing well-rounded medical care for individuals. In the medical schools, departments of preventive medicine have helped to meet this demand. Outstanding among the new departments in the west central United States is the Department of Public Health and Preven-

tive Medicine of the Washington University School of Medicine, established with the aid of the university, the Commonwealth Fund and The Rockefeller Foundation in 1944. The Foundation in 1947 allocated \$30,000 toward the support of public health teaching at Washington University over a five-year period.

During the past three years, this department has made progress in bringing preventive medicine to the community. In large part, this is due to the combined efforts of the head of the department and the St. Louis County Health Commissioner, who also serves as associate professor in the School of Medicine. There has been established a tradition that the entire staff in the County Health Department is closely affiliated with the university and selected in part on that basis. County officers have assisted in planning the public health teaching program. Students observe and participate in the operation of an outstanding community health department. The County Health Center, serving a population of some 350,000, with its excellent modern facilities, is used as a practice and demonstration area.

In order to integrate the program of the Department of Public Health and Preventive Medicine with work in other departments such as medicine, pediatrics and pathology, members of the staff attend conferences and seminars elsewhere in the School of Medicine. The student health service, operated by the department, is also a means of spreading the concepts of public health and preventive medicine.

UNIVERSITY OF BRUSSELS SOCIAL MEDICINE

In Belgium, as elsewhere, a growing appreciation of the importance of economic and social conditions in

relation to illness is manifest in the medical profession and among government authorities. As might be expected, interest in social medicine has been intensified by problems arising from wartime privation and difficult postwar conditions. The national law on social security enacted in 1944 includes a system of compulsory insurance against illness and disability, as well as insurance against occupational hazards in industry.

The Faculty of Medicine of the University of Brussels has for a number of years offered elective courses in public health, industrial medicine, forensic medicine and school medicine. In 1939 it dedicated a new building for an Institute of Hygiene and Social Medicine. Confiscated for a German military hospital during the war, the institute did not get started on its program until late in 1945. At that time a Department of Social Medicine was created and placed in the charge of Dr. René Sand, technical counsellor to the Ministry of Health and chairman in 1946 of the committee which drafted a constitution for the World Health Organization.

The Rockefeller Foundation has allocated \$33,000 for the teaching and research program in social medicine during the next five years. After that the University of Brussels will assume full responsibility for support of the institute.

MEDICAL EDUCATION

MEHARRY MEDICAL COLLEGE

During the years following the Civil War, those charged with the task of providing schools for the freedmen early recognized the almost total lack of medical services for Negroes and the alarming mortality rate among these people. The story goes that Meharry Medical College owes its founding to the kindness of a

Negro who helped a white man extricate his horse and wagon from the mud of an Illinois road and gave him food and shelter for the night. The white man was one of the Meharry brothers who endowed a medical department for a newly founded college for Negroes in 1876. This department was incorporated independently as Meharry Medical College in 1915.

Today, Meharry Medical College is the foremost center in the United States for the training of young Negro men and women in medicine, dentistry and nursing. Several thousands of its graduates are practicing their professions in almost all the states of the Union. Meharry moreover is contributing more than any other single institution toward the continued education of the Negro practitioner. This program takes the form of short refresher courses, long-term specialty training, and extension work through affiliation with Negro hospitals in Tennessee, Kentucky, Alabama, Mississippi and Florida.

First considered as a racial problem, Negro health is now universally recognized as one of national proportions, affecting not only the Negroes themselves, but the entire population of the country. In teaching the Negroes to minister to their own race, Meharry is filling an important place in our national health picture and helping to diminish the threat of a great reservoir of disease existing among the Negroes. Even so there is only one Negro physician for each 2,984 Negroes, as compared with the general average of one physician for each 784 persons of all races.

Meharry is a privately endowed school, the only one of its kind in the United States. In the past it has been supported by generous contributions from such organizations as the General Education Board, the Kel-

logg Foundation, the Rosenwald Fund, the Harkness Foundation, and from the city of Nashville, Mr. George Eastman and the Meharry Alumni. Today, Meharry faces difficulties in maintaining its program and in competing with other organizations which can afford to pay higher salaries. The Rockefeller Foundation has allocated \$100,000 toward current expenses at Meharry Medical College for the year 1947-1948.

FIFTH INTERNATIONAL CONGRESS OF PEDIATRICS

In July 1947 some 200 pediatricians from Europe and the Far East, along with 300 from South America and 1,600 from the United States gathered in New York for the Fifth International Congress of Pediatrics. In all, 63 countries were represented. This was the first congress of its kind since 1937. All over the world pediatricians, like other physicians, have been for a number of years isolated from their colleagues in other countries. Visitors from Europe remained in the United States for about three weeks following the congress in order to participate in observation trips to medical centers in New York and on the eastern seaboard. Funds for travel expenses of European pediatricians were contributed by a number of organizations and individuals, including The Rockefeller Foundation, which allocated \$15,000 for this purpose.

During the congress physicians from war zones gave first-hand accounts of the effects of malnutrition, over-crowded housing and other untoward results of war conditions. It was shown that the years of privation in Europe caused alarming increases in mortality and diseases among babies and children upon whose health and welfare future generations depend.

The congress was wide in scope. Among the subjects

treated were virus diseases; chemotherapy; preventive pediatrics; endocrinology; bioimmunological procedures; vitamin requirements and avitaminoses; control of airborne infections; insect and other vectors of disease; rheumatic fever; blood grouping; alimentary toxicosis; and congenital heart disease.

Some 150 scientific exhibits, covering subjects all the way from maternal nutrition to art therapy for schizophrenic children, helped this congress to do a representative job in re-linking foreign and American medical progress.

FORSYTH DENTAL INFIRMARY FOR CHILDREN DENTAL EDUCATION

Under a two-year program sponsored by the Forsyth Dental Infirmary for Children, Dr. A. LeRoy Johnson, formerly dean of the Harvard School of Dental Medicine, is acting as unofficial consultant on problems in dental education. He will visit dental schools throughout the country in order to consult with dental and medical leaders responsible for planning the future of dental education. In connection with his visits, Dr. Johnson will have an opportunity to encourage young men who have research and teaching interests in dentistry, and to bring their work to the knowledge of appropriate authorities.

Dr. Johnson has had wide experience in both teaching and research as well as professional practice. He has been connected with Tufts College, the University of Michigan, and the University of Pennsylvania. For a number of years he collaborated in research on experimental genetics with Dr. Charles R. Stockard of the Cornell Medical School. More recently, as dean of the Harvard School of Dental Medicine, 1942-1947, he

helped to set up a new curriculum linking dentistry more closely with medicine. Admission requirements and the first two years of instruction are now identical in the medical and dental schools at Harvard University.

The program carried out by Dr. Johnson receives support from the Carnegie Corporation, the John and Mary R. Markle Foundation and The Rockefeller Foundation. The grant of The Rockefeller Foundation is in the amount of \$12,000 for two years.

AMERICAN UNIVERSITY OF BEIRUT SCHOOL OF MEDICINE

The School of Medicine of the American University of Beirut is equipped to offer modern medical education to students in the Near East. It remained open throughout World War II, and the buildings sustained no serious material damage. Staff members lost for various reasons during the war have now been in good part replaced, and the school is prepared to take advantage of its strategic importance in an area where there is much need for trained personnel and first-rate equipment.

The trustees of the American University of Beirut have been successful in raising some \$300,000 for the expansion of the medical center. The aim is enlargement and modernization of the teaching hospital. In the past The Rockefeller Foundation had appropriated funds for a medical school building, an outpatient clinic and an endowment fund. In 1947 the Foundation made a grant of \$100,000 for teaching and research equipment in the new hospital.

Since its beginning on a very modest scale in 1867, the School of Medicine has steadily grown. Many of its

graduates, who now number well over a thousand, have become leaders in every center of population in the Near East. Government medical services in some of these countries, such as Palestine and Trans-Jordan, depend upon graduates of this school for personnel. Students come principally from Lebanon and Syria but are drawn also from many other countries including Egypt, Palestine, Persia, Trans-Jordan, Turkey and Iraq. The school has had and continues to have a deeply rooted tradition of serving the whole of the Near and Middle East.

MEDICAL RESEARCH COUNCIL, GREAT BRITAIN

Formalities and restrictive regulations imposed of necessity by the British Treasury to save American dollars for food and other essentials are presenting a serious obstacle to medical research in Great Britain. The situation is particularly unfavorable in view of the fact that not all essential scientific instruments are manufactured in Great Britain. To aid investigative work in the medical sciences, The Rockefeller Foundation in 1947 allocated the sum of \$20,000 to the Medical Research Council of Great Britain for scientific equipment purchasable only in currencies affected by treasury regulations.

FELLOWSHIPS

The Medical Sciences of The Rockefeller Foundation administered a fellowship fund amounting to \$125,000 in 1947. The sum of \$125,000 has been appropriated for work during 1948. There were 75 fellowships active during the year. Sixty of the fellows studied in the United States, 6 in England, 5 in Canada, and 1 each in Belgium, Sweden, Denmark and Switzerland. Subjects studied were physiology, pediatrics, anesthesiology,

preventive medicine, psychiatry, psychoanalysis, child psychiatry, endocrinology, pharmacology, medical entomology, metabolic diseases, neurology, neurophysiology, bacteriology, internal medicine, pathology, chest surgery, anatomy, hematology, biophysics, biochemistry, nutrition, cardiology, experimental medicine, neurosurgery, immunology, child surgery, surgery, roentgenology, histopathology, psychosomatic medicine, neuroanatomy, neuropathology, gastroenterology, virology, and otorhinolaryngology.

The Medical Sciences fellows came from the following countries: Norway and Czechoslovakia, 7 each; France, 6; Chile, Lebanon, the Netherlands and Yugoslavia, 5 each; Denmark, Mexico and the United States, 4 each; Brazil, Canada and the Philippine Islands, 3 each; Argentina, Cuba and Uruguay, 2 each; and 1 each from Belgium, Finland, Greece, Peru, Poland, Spain, Sweden and Venezuela. Thirty-nine of the fellowships were new in 1947; 34 were continued from 1946; and 2 from 1945.

Since the outbreak of the war in 1939, Australia's three university medical schools in Sydney, Melbourne and Adelaide have been comparatively isolated and unable to follow their custom of sending junior staff members to the United States and Great Britain for additional training and experience. There is now an accumulated need of travelling fellowships for younger teachers, accentuated by the plan to establish a fourth medical school at Perth, Western Australia. The Rockefeller Foundation appropriated \$15,000 to the National Health and Medical Research Council, Department of Health, Canberra, Australia, for fellowships in 1946. A similar grant of \$30,000 for a two-year period was made in 1947. There were six fellows in 1947.

The Medical Research Council of Great Britain administered 18 advanced, postdoctoral fellowship awards in 1947, with funds received from The Rockefeller Foundation.

In the United States the National Research Council continued to provide fellowships for advanced studies in the medical sciences. Funds for the 23 fellowships active in 1947 were derived from a Foundation grant of \$200,000 made in 1946. The National Research Council also administers a special program for fellowships in internal medicine, known as the Welch Fellowships. The Rockefeller Foundation appropriated \$168,000 in support of this program for the period 1941-1955. The program is limited and highly selective, for unlike the regular fellowships, which are chiefly for work in the clinical and preclinical branches of medicine, the Welch Fellowships are intended to reach older and more mature men who will occupy teaching posts in outstanding medical schools. There were three Welch Fellows in 1947.

In anticipation of the shortages of highly qualified medical personnel in the postwar period, The Rockefeller Foundation in 1943 inaugurated a program to aid selected centers of medical training in providing additional opportunities for young medical graduates whose training was interrupted or shortened by the war. In 1947, 22 medical schools and hospitals, under grants from the Foundation, appointed 85 young men to assistantships, internships or residencies.

GRANTS IN AID

The Medical Sciences in 1947 awarded 72 grants in aid ranging in amount from \$250 to \$7,500 and totalling \$199,667.81. The division administered a grant in aid

fund of \$200,000 during the year. More than half of the grants were designated for travel by outstanding physicians, surgeons, psychiatrists, physiologists, biochemists, pathologists and others attached to medical schools and hospitals in 13 countries: Poland, Czechoslovakia, England, France, Sweden, Finland, Norway, Denmark, the Irish Free State, Scotland, Argentina, the Philippine Islands and the United States. Eleven of the grants gave aid to research in radiobiology, pharmacology, neurosurgery, cell metabolism, placental enzymes, anatomy; for studies in Negro medical and nursing education, rural medicine, and the training of psychiatric aides; and for the preparation of a bibliography on problems related to alcohol. Other grants were made to facilitate the planning activities of the Association of Honorary Consultants of the Army Medical Library, to promote the foreign scholarship program of the Medical Library Association and to defray the costs of field studies in public health by medical students at the University of San Marcos in Lima.

Several grants supported visiting professorships or the development of teaching in psychiatry, clinical psychology, physiology and neurology, and legal medicine in American institutions.

Aid for equipment went to the University of Wroclaw; to the Broussais Hospital, affiliated with the University of Paris, for a department of anesthesia; to the University of Amsterdam and the Collège de France, for neurosurgical apparatus; to the National and University Library of Prague, for microfilming equipment; to the University of Mexico and the University of the Philippines, for their Departments of Physiology; to the University of Upsala, for its Institute of Theoretical Medicine; to the National Council for the Rehabilita-

tion of Industrial Workers, for the Roffey Park Rehabilitation Centre, Sussex, England; to the Institute of Medical Research, Córdoba, Argentina; to the University of Colorado, for its Department of Industrial Medicine; and to the Faculty of Medicine, Bergen, Norway, for work in cardiology.

Six of the grants designated for travel enabled scientific workers to attend the International Physiological Congress, Oxford, the International Congress of Physicians, London, the meeting of the American Psychological Association, Detroit, a conference on antihistamine agents in allergy, New York Academy of Sciences, and a meeting of the Library Section of UNESCO, Paris.

The geographical distribution of the grants was as follows: United States, 26; France, Poland and Czechoslovakia, 6 each; England, 5; Sweden, 4; Norway, 3; Argentina, Finland, Denmark, Scotland and the Philippine Islands, 2 each; Chile, Mexico, the Netherlands, Peru, Yugoslavia and the Irish Free State, 1 each.

THE NATURAL SCIENCES

THE NATURAL SCIENCES STAFF

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¹ Appointment effective July 1, 1947.

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THE NATURAL SCIENCES

THE Natural Sciences in 1947 continued its program of support to research work in the field of experimental biology. A considerable part of the aid went to men or groups investigating biological processes with techniques adapted from the physical and chemical sciences. A main purpose of these and similar investigations is to add to our knowledge of the structure and physiological activity of such basic substances as the proteins, enzymes, hormones and steroids, as well as the action of various bacteria and viruses.

Of the 20 grants in experimental biology, totalling \$872,190, nine went to laboratories in northern Europe, where long-term research programs were continued in a fashion even during the war. Unfavorable postwar economic conditions have made it difficult for these laboratories to expand their programs and to obtain modern equipment.

In the United States three grants were made for research in genetics, one in support of studies in primate biology, and another for investigating natural biological pigments in marine organisms. Support was also given to Harvard University in connection with research work on the history of science.

Several grants went to projects in the Latin American countries. The largest, in the amount of \$266,900, was for continued support of the Mexican Agricultural Program. Other aid to the development of agriculture went to the Faculties of Agronomy of the National University

of Colombia, and to the Biological Institute of the São Paulo State Secretariat of Agriculture through a grant to the University of São Paulo.

Fifty-six fellowships were administered during 1947 by the Natural Sciences division. The total appropriations of this division during the year amounted to \$1,670,090.

EXPERIMENTAL BIOLOGY

MASSACHUSETTS INSTITUTE OF TECHNOLOGY BIOPHYSICS

Biology has long been concerned with the study of the cell as the ultimate unit of living matter. Today a veritable battery of modern experimental procedures are available to study the detailed structure and properties of molecules, the infinitesimal components of the cell. A new science has emerged, molecular biology. Exemplifying the increasing importance of interaction among the sciences, molecular biology brings all the theoretical and technical resources of physics and chemistry to bear on investigations of the molecule.

Under a comprehensive plan adopted by the Massachusetts Institute of Technology seven years ago, Dr. Francis O. Schmitt and his colleagues have taken a prominent part in the development of the new science. Their program is part of the general plan to strengthen the basic biological disciplines, to stimulate the development of biophysics and biochemistry and to promote the application of biology to medicine and industrial biology.

As presently constituted, the Department of Biology has an established teaching program extending from fundamental biological research to various applied aspects of the biological sciences. Some technological

aspects of biology have been transferred to engineering departments, and a new department of food technology has been set up. The curriculum in physical biology comprises five years of study leading to the S. B. and S. M. degrees conferred simultaneously. Included are four years of biological studies, four years of chemistry, four years of physics and two of mathematics. The four-year course in quantitative biology follows similar lines, with emphasis on the more fundamental sciences to develop a firm foundation for research in medicine or applied biology.

The Rockefeller Foundation has, since 1931, allocated substantial funds toward the development of biology and allied sciences at the Massachusetts Institute of Technology. In 1947 a six-year grant of \$250,000 was made for research in biology at this institution.

The changes that accompany life — the processes of growth, cell division, cell nutrition, disease and aging — all take place on the surface of molecules. It is of the utmost importance to medicine and science generally to observe what happens to molecules during these life processes, and to study the way in which they join together to form the slender fibers of which muscles, tendons, nerves, cell walls and connective tissue are woven. Because these protein fibers are invisible even under the most powerful optical microscope, biologists and physicists have of necessity combined their forces to develop new instruments and new techniques to examine molecular structure. X-ray diffraction, for example, will produce distinctive patterns which reflect the arrangement of molecules in the tissue. Other valuable techniques are polarized light, ultraviolet microscopy and microabsorption spectroscopy. One of the most powerful instruments, however, is the electron

microscope. Making use of the extremely small wave length associated with a beam of electrons, the microscope focusses such a beam instead of ordinary light and brings into visibility the smallest objects ever seen. Some of these instruments, of which there are now more than 100 in various laboratories throughout the United States, possess a magnification of 200,000 diameters.

Thus far the program at the Massachusetts Institute of Technology has centered on morphological investigations of biologically important molecules, using a variety of physical instrumentation. Any long-term goal involves an equally thorough development of the biochemical and enzymological aspects of molecular biology. Current emphasis is placed on preparative and analytical protein chemistry and enzymology; X-ray analysis of crystalline proteins and further applications of electron microscopy; and the development of additional facilities for teaching biophysical techniques to advanced students.

UNIVERSITY OF LEEDS MOLECULAR BIOLOGY

Aid to research in molecular biology at the University of Leeds was continued this year with a grant of \$85,000, intended to assist the program under Professor W. T. Astbury over at least 10 years. Noted for his researches in the structure of wool and other textile fibers, Professor Astbury has gone on to apply X-ray analysis, electron microscopy, and other precise physical techniques to the study of biologically important living tissues. He has accumulated a collection of X-ray diffraction photographs which show that the same basic molecular arrangements which enter into wool are also used by nature to build horn, feathers, hair, skin and

muscle. Fibrinogen, one of the clotting factors in blood, turned out to be essentially similar in molecular structure and elastic properties to certain other protein substances.

In his studies of biologically important molecules, Professor Astbury has developed more precise tools, such as the rotating and the oscillating anode X-ray tubes. He has also trained many younger men.

His achievements in welding physics, chemistry and biology together into a comprehensive science have received wide recognition. The chair in biomolecular structure was especially instituted for him at the University of Leeds. He and his colleagues in addition to pursuing an intense research program lecture regularly in various departments of the university, including the medical school.

KAROLINSKA INSTITUTE BIOCHEMISTRY

Natural Sciences division aid to research in biochemistry under the direction of Professor Einar Hammarsten of the Institute of Chemistry of the Karolinska Institute, Stockholm, was continued in 1947 with a grant of \$61,525 available until 1955. Approximately two-thirds of this amount is designated for the purchase of equipment. A mass spectrometer, an ultracentrifuge, a machine for the supersonic vibration of cells, and equipment for the controlled growth of organisms in large quantities have already been assembled. Additional equipment will facilitate the work with radioactive tracers. Under the terms of new legislation, the Institute of Chemistry will receive substantial funds for teaching and research from the Swedish Government.

For the past two decades Professor Hammarsten

has been engaged in studies of protein chemistry — protein metabolism in particular. Working closely with him are several younger men whom he has trained. Whether proteins are built up directly from combinations of amino acids, or peptides, or of dipeptides, and the role of complex nucleic acids in the process, still remain baffling aspects of protein chemistry. In their search for answers, Professor Hammarsten and his colleagues are relying heavily on the tracer substances. They have been successful in simplifying some of the complicated techniques involved.

CALIFORNIA INSTITUTE OF TECHNOLOGY BIOLOGY AND CHEMISTRY

Over a period of several years The Rockefeller Foundation has given support to work at the California Institute of Technology in the development of a program dealing with applications of chemistry to fundamental problems of biology and medicine.

In discussing the general background of such work Dr. Linus Pauling, who directs part of the program, spoke as follows in a recent talk: "Chemists have worked out the architecture of many substances which have medicinal effects. . . . These substances represent a variety of architectural complexities — ranging from small molecules of only two or three atoms to much more complex molecules built of fifty or sixty atoms. Most of our knowledge of the structure of these substances has necessarily been obtained by indirect means . . . working out the architecture of drugs and other chemical compounds is only half the job. There remains the task of determining the structure of that part of the living creature on which the drug or other chemical acts. And this task is extremely difficult, because of the extreme

complexity of many constituents of living matter. For example, the molecule of penicillin consists of forty-one atoms — but the molecule of hemoglobin, one of the important constituents of the red blood cell, consists of ten thousand atoms. Other protein molecules are larger still. Some containing twenty thousand, one hundred thousand, even one million atoms to a single molecule have been weighed. But although we can weigh them, we do not yet know the exact architecture of a single one of these protein molecules. This then is the great problem of modern chemistry — the determination of the molecular architecture of the proteins and other complex constituents of the living organism. . . . The progress of medicine depends on its solution.

"When once a real understanding of the physiological activity of chemical substances is obtained . . . medical progress will be swift. The medical research man then will be a molecular architect. He will be able to draw the atomic blueprints for promising pharmacological compounds in order that chemists may synthesize them and biologists may test them. He will be able to analyze and to interpret the structures of enzymes, tissues, and viruses to learn the mechanism of disease and hence the way of combating diseases."

The problems under investigation at the California Institute of Technology have to do with the structure and nature of proteins, nucleic acids and other constituents of living matter; with the structure of the gene and the mechanisms of inheritance, of cell division and of growth; with the molecular-structural basis of the physiological activity of chemical substances; and with the structure and properties of antibodies, enzymes, viruses and bacteria. In general the work represents an attempt to uncover basic principles rather than to at-

tack specific practical problems, but in the course of such fundamental studies new ideas providing the basis for clinical research are bound to be discovered.

Experimental work during the past few years has tended to substantiate the findings of earlier investigators that the specific biological forces between antibodies and antigens result from complementariness in structure, or the nearly exact fit between the surface configurations of the antibody molecule and the antigen. This complementariness in structure leads to a strong attraction between the two and permits them to combine. A small change in the structure of the antigen would, however, prevent the antibody from getting into effective contact with it and could thus interfere with the formation of a strong bond. It has been possible to measure the closeness of the surface atoms of antigen and antibody by several different methods, all of which show that the two surfaces are in contact to within about one one-hundred millionth of a centimeter.

Many other physiological processes are similarly specific, and it seems likely that their specificity can be given similar explanations. The action of enzymes, drugs and bactericidal substances, even the highly specific power of self-reproduction shown by genes, probably have their origin in forces like those which bring about specificity in serological systems. Studies in chemical embryology reveal that the processes of fertilization are very largely analogous to those encountered in the field of immunology. For example, the engulfment of sperm by the egg resembles the phagocytic processes studied by immunologists, and specific substances obtained from eggs and sperm interact in the manner of antigen and antibody. Complementari-

ness in surface configuration of molecules is no doubt involved in the activities of the thousands of genes that carry to us our inheritance from our ancestors. Moreover, progress in the attack against diseases and their vectors is closely linked with a better understanding of the phenomena of growth and development in terms of intermolecular forces and molecular structure.

Continuing its support of the combined program in biology and chemistry at the California Institute of Technology, The Rockefeller Foundation in 1947 appropriated \$50,000 available for one year.

UNIVERSITY OF COPENHAGEN ISOTOPES AND BIOLOGY

The Rockefeller Foundation has continued to allocate funds in support of studies on the biological application of isotopic tracers carried out by the Institute of Theoretical Physics and the Laboratory of Zoophysiology, Copenhagen, in collaboration with several other Danish laboratories. In 1947 a grant of \$17,000 was made for research under Professors Niels Bohr and P. Brandt Rehberg, with the collaboration of Professors August Krogh and George Hevesy.

At present the main effort of this group of scientists is aimed at the elucidation of the effect of irradiation on biophysical and biochemical processes, with special emphasis on study of the formation of erythrocytes. Investigations are also made of the effect of both X rays and ultraviolet radiation on the entrance and exodus of labeled components in yeast and plant cells. A considerable part of the work in biophysics is directed toward improvement of the measuring methods of radioactive radiation.

As in past years the Zoophysiological Laboratory is

engaged in studying the active transport of ions through living membranes and the accumulation of ions and salts within the cells proper. This leads to a consideration of the fundamental problem of membrane structure in the living organism. In the case of frog skin it appears, for example, that certain structural elements in the membrane permit an exchange of ions in such a way that an equal number of ions of the same charge will pass the membrane in both directions, even if there is a considerable concentration difference across the membrane.

UNIVERSITY OF OXFORD ORGANIC CHEMISTRY

One of the striking developments in organic chemistry in recent years concerns the steroids, bile acids, and related vitamins and hormones. In the Dyson Perrins Laboratory of Organic Chemistry at the University of Oxford, Sir Robert Robinson and his colleagues have been engaged in studying the molecular constitution of some of these important substances. A few have been successfully synthesized. This latter task is regarded as one of the most difficult that could be undertaken by the organic chemist. However, a combination of chemical and physical methods has disclosed the stereochemical configuration of the ring-systems in the best-known steroids.

In their present work on the synthesis of steroid substances Sir Robert and the group under his direction hope to establish rapid, reliable and high-yield methods for the synthesis of some steroids whose structure resembles that of testosterone, desoxycorticosterone and other hormones. Extensive experiments based on new techniques have already been developed for preparing

the intermediate products. This project receives support from The Rockefeller Foundation through a grant of \$19,440 made in 1947.

Sir Robert Robinson has for many years been recognized as a leading synthetic organic chemist. In addition to his work with steroids, he has made important contributions in the alkaloid field, particularly through his studies of the chemistry of strychnine and brucine. During the recent war he headed the Oxford group engaged in studies of the chemistry of penicillin. In 1947 he was awarded the Nobel Prize for Chemistry.

UNIVERSITY OF CAMBRIDGE CELL PHYSIOLOGY

The research group under Professor David Keilin of the Molteno Institute of Biology and Parasitology at Cambridge University maintains a well-integrated program of study on the oxygen-transporting systems of plants and animals. This work in cellular physiology has received continuous support from The Rockefeller Foundation since 1935. An additional grant of \$30,375 has now been made available.

Present work has to do with the chemistry of those intracellular enzymes which help liberate oxygen in tissues; the role of the cell in the synthesis of highly specific proteins which enter into the formation of hemoglobin; and the effect of various substances which destroy red blood cells or lower their capacity to transport oxygen. A new phase of the work concerns the mechanism of nitrogen fixation in root nodules of leguminous plants as related to the physiology of symbiotic bacteria, the photosynthesis of plants and the function of hemoglobin-like pigments in root nodules.

This program is closely linked with several others in the institute which receive support from British sources, notably virus studies, work on the metabolism of spermatozoa, and chemotherapy of malaria.

UNIVERSITY OF STOCKHOLM GENERAL PHYSIOLOGY

In the Wenner-Gren Institute of Stockholm, Sweden, a group of scientific men have for some time been working in the field of modern experimental zoology. This group is headed by Professor John Runnström. Under his direction, some 25 scientific workers and an equal number of technicians are engaged in a coordinated research program.

The emphasis is on the application of physical and chemical techniques to biology. The study of living processes conducted at this institute is of considerable practical importance to both medicine and surgery. The research output in the way of published papers during recent years has been substantial.

Professor Runnström and his collaborators propose to continue their investigations on the mechanism and chemistry of fertilization, the changes in the respiratory rate of the cell during mitosis, and the role of certain cellular enzymes in the fertilization process.

Many other subjects are under investigation, including the genetics of a fungus, *Collybia velutipes*; diabetes and the biochemical background of this disease; the histophysiology of the pituitary body; and substances which induce bone formation.

The Foundation, since 1932, has provided approximately \$180,000 in support of this varied research. A new grant of \$12,600 was made for 1947. A part of this

grant will be, as in former years, used for research in cell physiology, and another part will be used in developing a new section in biochemical genetics.

KING'S COLLEGE, UNIVERSITY OF LONDON
MOLECULAR BIOLOGY

A grant of \$21,000 was made in 1947 in support of research on the analysis of biological tissues by physical techniques under the direction of Professor J. T. Randall at King's College, University of London. Professor Randall heads a group of 15 scientists in the Biophysics Research Unit recently established by the British Medical Research Council. Broadly speaking their program is concerned with physical factors of cytological importance, particularly those affecting mitosis, cell-division and other physicochemical phenomena associated with protoplasm. Making use of new or little-used techniques and physical instrumentation they have begun research on breakage of chromosomes and other protoplasmic material by means of ultrasonics and on the physical properties of gels and sols by means of X-ray diffraction, light scattering and other methods. They are also concerned with new techniques of handling biological material under the very special conditions required by the electron microscope; with X-ray diffraction studies of red blood cells and leucocytes; with the photoconductivity of proteins; and with the dielectric properties of proteins and enzymes in the crystalline state as well as in solution. The group will continue association with scientists at the Strangeways Laboratory, Cambridge, for the application of ultraviolet microscopy to the study of mitosis.

About one-third of the Foundation grant is desig-

nated for salaries of junior research staff and the remainder for research and the purchase of equipment.

UNIVERSITY OF OXFORD RESEARCH ON ANTIBIOTICS

Although the phenomena of antibiosis have been known for at least 70 years, it is only since 1939 that an effective combination of biochemistry with other forms of biological investigation has been applied to the problem of antibiotics. Eleven years elapsed between the discovery of penicillin by Sir Alexander Fleming in 1928 and demonstration of its healing effects in treating infections by Sir Howard W. Florey and Dr. Ernst B. Chain, who with Fleming shared the 1945 Nobel Prize for physiology and medicine. Since that time penicillin has come into wide use clinically, and a flood of investigation in various countries has focussed on the development or discovery of other medically useful antibiotics. Penicillin was by no means the first substance produced by a living body shown to be toxic to microorganisms. Its significance lies in the fact that it was the first substance encountered which destroyed bacteria without having an appreciable effect on human leucocytes. It remains important today largely for this same reason — its low toxicity.

In the search for other useful antibiotics among fungi, bacteria, molds and higher plants, a great many new substances have been discovered, but only a few besides penicillin even approach being true chemotherapeutic agents. In a recent paper read at the 1947 annual session of the American Medical Association, Sir Howard Florey expressed the idea that antibiotics research is "something like taking a ticket in the lottery." Nevertheless, such investigations are of immense value be-

cause they throw light on the life processes of bacteria, as well as on the mode of action of antibiotics on bacteria.

The contributions of Sir Howard and his collaborators have attracted a number of British and foreign scientists to the laboratories in the Sir William Dunn School of Pathology at the University of Oxford. A team of 14 was active in this research during 1947. Their present program includes a broad search for new antibiotics as well as a continuation of extensive studies on the chemical, bacteriological and therapeutic properties of such substances. Dr. Chain will investigate the chemical properties of the tubercle bacillus with a view to possible methods of immunization. A new member of the team is working on the biochemical aspects of bacterial toxins.

The Rockefeller Foundation, which has contributed toward research under Sir Howard Florey since 1936, allocated \$15,000 to the program in 1947.

UNIVERSITY OF Utrecht

SPECTROSCOPIC BIOLOGY

Aid was continued to the joint research program in spectroscopic biology under the direction of A. J. Kluyver of the Laboratory for Microbiology of the Technical University at Delft and J. M. Milatz of the Institute of Physics at the University of Utrecht. These men, together with a number of younger collaborators, have for some years maintained a productive series of researches on two broad general topics: the mechanism underlying the production of light by photoluminescent bacteria and higher organisms; and the influence of light on living tissues, particularly as related to phototropism and the photosynthesis of plant foodstuffs.

The 1947 grant of The Rockefeller Foundation is in the amount of \$12,000 for two years. A part of the grant will be used for the purchase abroad of new equipment including electronic apparatus developed in connection with war research programs.

PRINCETON UNIVERSITY
GENETICS

It is well known that the chief factors of heredity are located in the chromosomes. The fact that cells of plants or animals characteristically contain two sets of chromosomes gives both parents an equal share in inheritance. Sometimes through a natural or experimental accident an organism may possess one or more additional sets of chromosomes.

These deviations may bring about changes in the size of the cells which, in turn, may change the size of the body and its various organs. Such changes have been extensively studied by botanists because they are of practical importance in cultivated plants.

Among animals, these changes in the basic hereditary material appear to occur as a sort of early mutation in the developing embryo. The discovery in 1939 that changes in chromosome number may be easily induced and studied in frogs and salamanders opened a new approach. At Princeton University Professor Gerhard Fankhauser has embarked on an intensive study of the effects of changes in chromosome number in these and certain other amphibians.

Professor Fankhauser is especially interested in changes produced by chromosome duplication in the nervous system, the blood and the glands connected with functional activities. Changes in chromosome number are also linked up with the sex characteristics of

animals. An investigation of breeding behavior and glandular development, it is thought, may throw new light on problems of inheritance and sex differentiation in higher animals.

The Rockefeller Foundation has appropriated \$10,000 over a period of three years in support of the research directed by Professor Fankhauser in this phase of genetics.

YERKES LABORATORIES OF PRIMATE BIOLOGY

Because of their resemblance to man in both physical functions and behavioral capacity, chimpanzees are excellent experimental subjects for research on human behavior and human ailments. Their susceptibility to most human diseases makes them useful in the investigation of infectious diseases under experimental controls which cannot be applied to man. More and more they are also proving their value in studies of the basic mechanisms of the nervous system and in the fields of applied neurology and psychiatry.

For more than 20 years the Yerkes Laboratories of Primate Biology have been an outstanding center for physiological and psychological studies of chimpanzees. At the laboratories in Orange Park, Florida, chimpanzees are bred and reared as the servants of science, and the results of research on their physiology, growth, and mental and emotional capacities have been reported in more than 250 research papers.

For some years following the establishment of the primate laboratory at Yale University in 1925, the chimpanzees were imported from Africa and kept satisfactorily for short periods in the northern climate. As the program expanded, however, it became necessary to breed and maintain them in numbers over a period of

years. Accordingly, a subtropical laboratory and breeding station was established in Orange Park, and by 1941 a sizable colony of known age and history was available for long-term investigations. At this time, Robert M. Yerkes, who was responsible to a rather special degree for the achievements of the laboratories, retired as director, and they were placed under the joint administration of Yale and Harvard Universities. All the work was transferred to Orange Park, and the scientific program was placed under the control of a board representing Yale, Harvard and three other universities or research institutions. At the present time about 50 chimpanzees of all ages are maintained in the colony, together with various monkeys.

The second phase of the program, directed by Dr. Karl S. Lashley, has placed greater stress on psychobiological and particularly neurophysiological investigations. Thus far, studies on normal physical and psychological development in the chimpanzee have been carried from birth through the first five years of life. Other long-term studies include analyses of the instinctive behavior of the chimpanzee; investigation of brain functions; comparative studies of intelligence; sex studies; and miscellaneous projects dealing with genetics, nutritional and environmental modification of development, problems in social reactions, social organization and neurotic behavior. These studies are designed to extend existing knowledge of human growth and of the conditions most favorable to the development of full potentialities for normal physical and mental self-realization in human beings. Such studies likewise throw light on educational guidance and psychiatric techniques.

- During the past four years graduate students from

several eastern universities have received training at Orange Park. A variety of materials, including chimpanzees for poliomyelitis studies, has been supplied to non-resident investigators.

The Yerkes Laboratories are supported chiefly by Harvard and Yale Universities, the Carnegie Corporation, and The Rockefeller Foundation. Since 1925, the latter has contributed approximately one million dollars toward the development of this project. In 1947 further support was provided through a grant of \$190,000 available over a five-year period. Of this amount \$15,000 is designated toward the cost of construction of a new laboratory building suitable for experimental control of potentially dangerous adult chimpanzees.

UNIVERSITY OF CALIFORNIA BIOCHEMISTRY OF MARINE ORGANISMS

Colors in animals present a subject of high scientific interest. Color, indeed, has figured importantly in nearly every branch of biology. Physicians, breeders, agriculturalists and conservationists as well as scientists engaged in pure research are well aware that sooner or later pigmentary problems are encountered in nearly every field of biological research.

Nutritional, genetic, clinical and pathological studies are gradually yielding important information regarding some of the physiological features of several natural biological pigments, or biochromes.

Current work on the biochemistry of marine organisms directed by Professor Denis L. Fox at the Scripps Institution of Oceanography is primarily concerned with the comparative aspects of biochromes, in particular, the carotenoids in marine organisms. These red or yellow pigments are of such wide distribution

throughout the living world as to be nearly universal. They occur in the simplest types of plants and animals as well as in the most highly evolved flowering plants and the more complicated mammals, including man. In animals they commonly occur dissolved in minute oil droplets, to which they impart yellow, orange, pink or red colors; alternately, such compounds may be conjugated with proteins to give blue, green, violet, pink, brown, gray or other hues. The great majority of animals store carotenoids in their tissues, in the glandular and reproductive organs, the liver, the skin or shell or feathers, and the eyes.

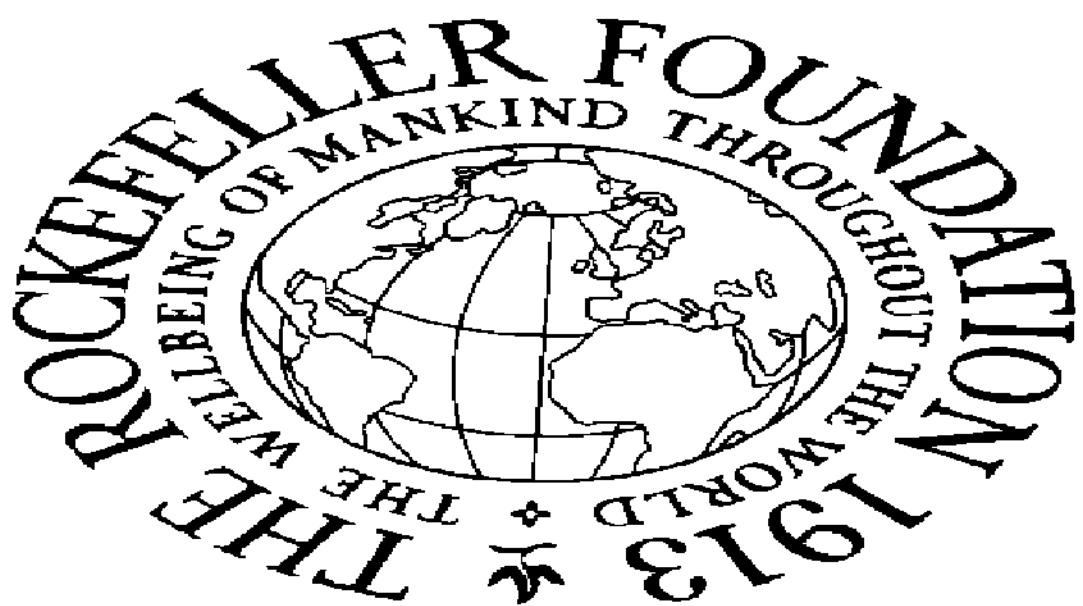
Strikingly beautiful displays of carotenoids are encountered in the skins of numerous amphibians, notably salamanders, fish, and marine invertebrates. The gorgeous blue and green, some gray or chocolate tones, violet and near-black pigments of certain crustaceans, naked molluscs and sea stars are in many instances the result of carotenoids in chemical conjunction with protein. The blue or black shell, and the green eggs of the lobster and the crayfish are also due to various carotenoid compounds. When denatured by boiling or with alcohol, they become a bright red. The pink color of salmon muscle indicates the presence of carotene, as does also the brilliance of the marine goldfish.

The present program includes a comparative biochemical survey of the kinds, relative quantities, possible sources and qualitative or quantitative alterations in the carotenoids of various tissues of marine animals in order to elucidate environmental, nutritional, seasonal, and in some cases sexual or reproductive aspects of their carotenoid metabolism. In some animals a high degree of specificity exists for the absorption of either the hydrocarbon (carotene) class or the oxygenated



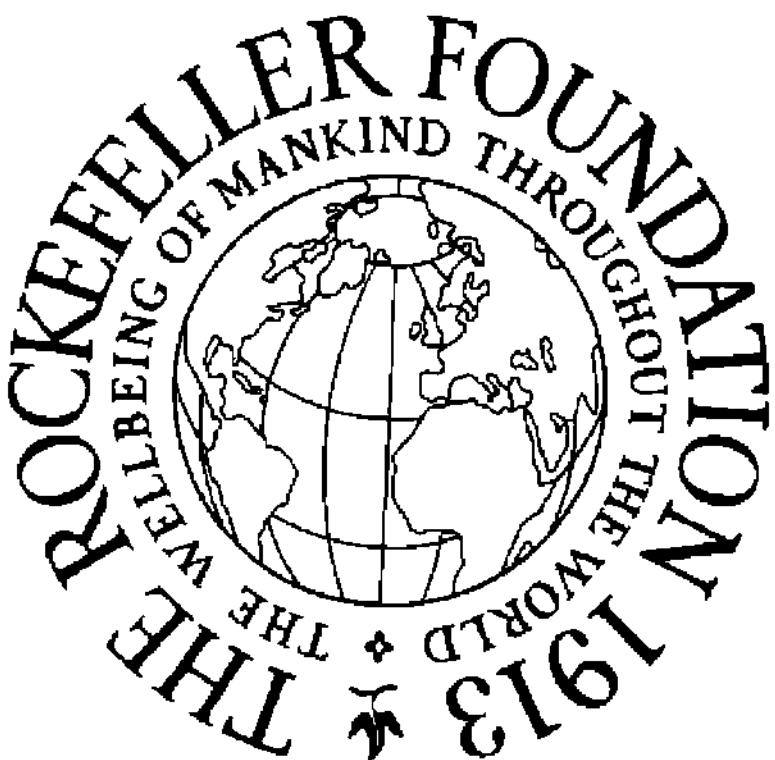
Photograph Excised Here

Agglutination test in connection with immunogenetic
investigations, California Institute of Technology



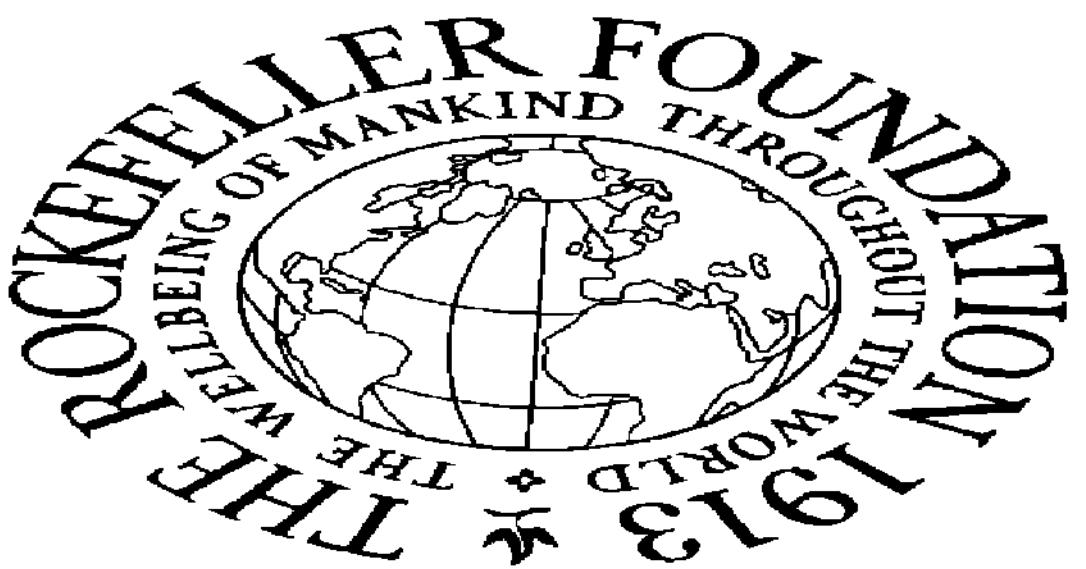
Photograph Excised Here

Research in cell physiology, Molteneo Institute,
University of Cambridge



Photograph Excised Here

Study of
marine animal
pigments,
Scripps
Institution of
Oceanography.



Photograph Excised Here

Laboratory for spectrographic analyses and X-ray photography,
University of Stockholm.

(alcoholic or zanthophylllic) type of carotenoids. Some species whose diets contain ample amounts of both types may assimilate only one type, or take in both types as does man. Some animal species convert common plant carotenoids into specific animal carotenoids. It is hoped to clarify somewhat the assimilation and metabolism of carotenoids in lower animals and to try to determine the possible position of such compounds in the total economy of the organism.

It is of value to naturalists and to those who deal in any way with naturally pigmented animals to learn the possible sources of carotenoids in the diet. The captive flamingos and scarlet ibises of our zoos, for example, will fail to display the pink carotenoids in their new plumes after molting unless given an approximation of their natural diet. If flamingos need a specific type of carotenoid derived from their natural diet of crustacean food, a diet of ground carrots, tomatoes or other plant material would not contain the right carotenoid to produce the natural and desired effect. Likewise, canaries are known to fade in plumage color if fed a diet lacking in the specific type of carotenoid which they metabolize and secrete in their feathers.

From the medical standpoint, any findings are valuable which reveal additional facts concerning the chemistry and physiology of carotenoids, since these are actually or potentially related to vitamin A. Vitamin A and carotenoids are important in the biochemistry of photoreception. They play an equally significant role in maintaining the integrity of mucous as well as integumentary surfaces. While nutritional sources of carotenoids, including vitamin A, in numerous terrestrial mammals and in domestic fowl have received much attention, this is not so among fishes or invertebrates. The

possible role of rich stores of carotenoids in the integument of marine animals is still to be made clear. The Rockefeller Foundation has given \$12,000 for support of such research work over a two-year period at the Scripps Institution of Oceanography.

ROSCOE B. JACKSON MEMORIAL LABORATORY GENETICS

Research in genetics and in cancer received a severe setback as a result of forest fires which swept through the New England States in October 1947. Precious stocks of pedigreed mice and rabbits and other material developed over many years at the Roscoe B. Jackson Memorial Laboratory in Bar Harbor, Maine, were destroyed or rendered unidentifiable following exposure to heat and fire. One of the buildings burned to the ground, and another on which construction had just begun will probably have to be rebuilt.

The Rockefeller Foundation has given support to this laboratory for a number of years, both for construction purposes and research projects. The 1947 grant of \$10,000 was appropriated to supplement a previous grant of \$75,000 for construction of the new building, which was to house animal quarters. The laboratory staff is already making plans for rebuilding. Dr. C. C. Little, the director, reports that several institutions have offered them space and research facilities in the interim period. Institutions which had purchased mice from the laboratory are prepared to contribute extra litters of a few of the rare strains lost in the fire.

The laboratory, now in its eighteenth year, has been an important center for research in mammalian genetics and a world source of supply for pure genetic strains of mice. Strains bearing specific hereditary characteristics,

such as high susceptibility to skin cancer, leukemia and various lethal factors, have been bred through hundreds of generations. These stocks, invaluable to medical research and biology, were in heavy demand during the war. The laboratory has also developed inbred races of rabbits adapted to the study of normal and abnormal growth processes.

URUGUAY MINISTRY OF PUBLIC HEALTH
RESEARCH INSTITUTE OF BIOLOGICAL SCIENCES

In 1927 a modest laboratory was provided by the Ministry of Health in Montevideo for the outstanding Uruguayan biologist, Clemente Estable. As a result of the accomplishments of Dr. Estable and his co-workers his laboratory was in 1943 raised to the status of a Research Institute of Biological Sciences. At the same time plans were drafted for a new, specially designed building to accommodate the seven departments which had been developed: general biology, cytology and histophysiology; comparative anatomy, histology and embryology; zoology and hydrobiology; comparative physiology; histopathology and bacteriology; biochemistry; and phototechniques. The Rockefeller Foundation contributed \$30,250 toward construction and equipment of the institute building in 1943, and in 1947 as it nears completion has allocated additional funds for equipment in the amount of \$10,000 available through 1948.

Dr. Estable, a pupil of the distinguished Spanish scientist, Santiago Ramón y Cajal, has under his direction some 25 workers, many of them professors or students in the University of Montevideo. Their findings have been made available in more than 75 publications of various kinds. Among the interests of the group is the

development of methods for illuminating and examining microscopically the tissues in living animals.

MASSACHUSETTS INSTITUTE OF TECHNOLOGY
MATHEMATICAL BIOLOGY

In 1947 the Medical Sciences and the Natural Sciences gave joint support to a research program in mathematical biology carried out by Professor Norbert Wiener of the Massachusetts Institute of Technology and Dr. Arturo Rosenblueth, director of research at the National Institute of Cardiology in Mexico. The grant of \$27,500 will permit these men to visit each other's laboratories in alternate periods. Further details on this grant are reported on page 111.

UNIVERSITY OF TEXAS
GENE CHEMISTRY

The discovery of H. J. Muller in 1927 that genetic mutations may be artificially induced by X radiation provided the basis for studies of increasing value in the field of gene chemistry. Mutant types occur infrequently in nature, but the use of X ray has made it possible to speed up the mutation rate to 150 times the natural frequency and create entirely new forms. More recently it has been shown that ultraviolet radiation and treatments with heat or chemical agents such as mustard gas are also effective in producing mutant types.

At the University of Texas, Wilson S. Stone, Orville Wyss and Jack E. Myers are investigating what appears to be still another method of inducing mutations. By allowing bacteria to reproduce in a medium containing known substances which had previously been exposed to ultraviolet rays they have found evidence that different substances produce different types of mutations. At

least part of the mutations produced by irradiation may result from an indirect effect in addition to those arising from a direct hit on the gene. Since the chemical and physical changes of the substances irradiated can be investigated, it may be possible to determine what substances within the complicated living cell are affected by the radiation which results in mutation. In the future it may become possible to predict particular kinds of effects and to control mutation by the selection of substances fed to the organism.

The indirect method of inducing mutation has in a short series of cases been effective in producing mutants resistant to specific toxic agents, such as penicillin and streptomycin. This suggests the possibility that one might obtain a mutation-directing substance, which, when administered with an antibiotic such as penicillin, would induce susceptible rather than resistant mutants.

As an exploratory grant, The Rockefeller Foundation in 1947 appropriated \$12,000 toward research in genetics and biochemistry over a two-year period at the University of Texas.

UNIVERSITY OF MISSOURI GENETICS

Another program combining biochemical and genetic techniques is being conducted at the University of Missouri under the direction of Professor A. B. Griffen. The Foundation has appropriated the sum of \$10,500 in support of this project over a three-year period. The research deals primarily with mutations and modifications of gene activity in relation to chromosome reorganization. Among the subjects under investigation are chromosome structure of *drosophila*, the relation between chromosome structure and gene activity, and

the chemical nature of modifications in chromosome organization. Biochemical tests are being developed to detect changes in the production of substances, such as enzymes, associated with these modifications.

In addition, techniques for producing and testing chromosome rearrangements have been studied, and the direct effects of substitution of chromomeres demonstrated. These investigations yield information on the irradiation intensities best adapted for producing rearrangements.

UNIVERSITY OF SÃO PAULO
UNIVERSITY RESEARCH FUND

A grant of \$30,000 was made to the University Research Fund of the University of São Paulo, Brazil, for research equipment and consumable supplies in the Biological Institute of the State Secretariat of Agriculture and the university departments of Chemistry, General Biology, Mineralogy, Botany, and Agricultural Genetics. Both the university and the institute are supported by the State of São Paulo. Professors and assistants in the scientific departments for the most part are employed on a full-time basis.

The Biological Institute is the largest center in Latin America for studies in animal and plant pathology. Considerable attention has been given to plant and animal viruses and insect pests to discover effective means of combating heavy losses in crops and livestock in Brazil. A new vaccine against hog cholera has made possible large-scale attacks on the disease. Research on the vector of the virus of an important citrus disease, similar to the "quick decline" known to California and Florida growers, is under way.

The Department of General Biology has largely con-

centrated on the genetics of *drosophila* of Brazil and other South American countries. Systematic collections of flies made in various regions serve as materials for population analysis studies and for various other experimental investigations. The Department of Botany is principally occupied with intensive investigations on the plant ecology of the dryer areas of Brazil.

Work on important agricultural crops of Brazil is going forward in the Department of Genetics of the School of Agriculture at Piracicaba. One of the major activities is the genetic analysis of indigenous and commercial varieties of maize.

AGRICULTURE

MEXICAN AGRICULTURAL PROGRAM

The Mexican Agricultural Program, set up five years ago following a Foundation-sponsored survey, is a co-operative enterprise known officially as the Oficina de Estudios Especiales, within the Mexican Secretariat of Agriculture. Basic aims of the program are to improve the volume and quality of staple food crops in Mexico and build up a team of Mexican agricultural scientists who will eventually take over all the experimental activities. Some 10 to 14 American staff members are provided by the Foundation to help in this work, and each year the Mexican Government assigns a large number of graduates of the National College of Agriculture in Chapingo to participate in the program. Many of these move later into important agricultural posts in Mexico or go to the United States for further training. The program has also attracted a growing number of agriculturists from other schools in Mexico and from Colombia and the Central American countries.

Essentially the program is one of systematic re-

searches in specific agricultural problems of Mexico. As the economy of Mexico is predominantly agricultural, the program has considerable significance, not only as a scientific demonstration but also as a practical technique of cooperating in the improvement of a national economy. At present the program centers around crop improvement studies. In some 30 experimental plantings scattered all over the republic, Mexico's chief crops — corn, beans and wheat — are tested for yield and other characteristics. At the National College of Agriculture in Chapingo 225 acres are available for this purpose. Also concentrated here are studies of soil fertility, irrigation and the control of insects and of plant diseases. A commodious new building of brick and concrete was recently completed to house the laboratories, provide storage space for farm equipment, seeds, insecticides and other supplies, residential quarters for staff researchers and a field headquarters for the program. Administrative headquarters and the library, as well as some of the scientific laboratories, are located in Mexico City.

Notable progress has already been made in the seed improvement program. Corn, wheat, beans, sorghum, barley, oats, clover, vetch and forage grasses are tested and new varieties developed. As new varieties become available in the Chapingo experimental plantings, the seed is sent to regional planting sites for adaption to altitude, rainfall, soil and other peculiar regional conditions. Good varieties are then grown for seed increase. Small land owners have shown a very active interest in the work, and a number have offered their farms for experimental purposes.

Mexico lives on corn, the Indian maize which has been growing in its valleys and along its mountainsides

for thousands of years. Rich and poor eat this staple food, largely in the form of tortillas or thin pancakes made of finely ground corn. Occupying something like 58 per cent of the cultivated areas of Mexico, corn grows in a great variety of climates, all the way from sea level to altitudes of 10,000 feet, in all kinds of soil and moisture conditions. Unfortunately, the yield per acre has been low, perhaps 10 bushels as compared with 25 or more bushels per acre in the United States. In the effort to determine the best varieties for each set of regional conditions, 1,500 samples of native corn have been selected and tested. Fifteen have thus far proved superior, and one has given over a three-year period a yield 25 per cent better than the best hitherto grown in the Valley of Mexico. Although the immediate problem is to determine the best native variety for each region, the ultimate goal is to produce even better hybrid or synthetic varieties by crossing two or more types of the native corn. Some hybrids already obtained are 50 per cent better yielders than the best of native corn. Although not quite so satisfactory as hybrids, several good synthetic varieties have also been developed. As the seed of good varieties becomes available in quantity it is released to Mexican farmers for planting. Plantings of seven synthetic varieties are expected to provide sufficient seed to plant 450,000 acres in 1948. Improved varieties of wheat and beans will soon be available also. The distribution of seed is controlled by a government maize commission which supervises allotments of seeds in the various regions and sees to it that the recommendations for planting and cultivating are observed.

In connection with testing operations, considerable attention is given to determining the resistance of

natural or artificially obtained varieties to insect depredations and various diseases. Of outstanding importance also is soil management. Work in this domain includes chemical and physical studies of Mexican soils and experiments with crop rotations, fertilizers and irrigation methods. The present high cost of chemical fertilizers in Mexico keeps them beyond the reach of most farmers, but crop rotation and plantings of nitrogen-fixing legumes and grasses show promising results.

Although little publicized, the success of the program is slowly but surely attracting attention from land owners, students, professors and some of the other government bureaus. The problem now is to translate research achievements into terms of immediate improvement of Mexican agriculture.

Continuing its support The Rockefeller Foundation allocated \$266,900 to the Mexican Agricultural Program in 1947.

NATIONAL UNIVERSITY OF COLOMBIA

FACULTIES OF AGRONOMY

During the past few years, The Rockefeller Foundation has been cooperating in the development of agricultural sciences in Colombia, principally with the Faculty of Agronomy at Medellín. In 1947, \$60,000 was appropriated for equipment of a laboratory of biological sciences to be constructed in 1948. In addition, the sum of \$10,000 was granted to the Faculty of Agronomy at Cali, also for scientific equipment. With Foundation funds, the Medellín faculty since 1945 has sent four top students from the graduating classes to work in the Mexican Agricultural Program; a similar opportunity was afforded the Cali faculty beginning in the present year.

Both faculties started out as departmental schools but are now constituent parts of the National University at Bogotá. The faculty at Medellín, founded in 1916, is located in a rich agricultural area of western Colombia. It has a progressive staff of young men, many of them with a background of foreign study. The same holds true of the newer and smaller faculty in Cali, which is situated at a lower altitude than Medellín and only a few degrees from the Equator in the fertile Cauca Valley to the south. Sugar cane, bananas, tobacco, corn, rice and many fruits flourish in this subtropical area.

The two faculties plan considerable expansion in the next few years and are constructing new buildings with funds provided by their departmental governments and the national congress. Nearby Palmira was selected as the site of a new building for the Cali faculty because of its proximity to one of the best agricultural experiment stations in the country.

Total Foundation aid since 1942 to these two faculties, for all purposes including fellowships, and with the 1947 grants, amounts to about \$142,139.

OTHER FIELDS

HARVARD UNIVERSITY HISTORY OF SCIENCE

Dr. George Sarton of Harvard University, a scholar of recognized eminence in the history of science, in addition to producing a monumental *Introduction to the History of Science*, has been chiefly responsible for the international journal, *Isis*. This distinguished quarterly, founded in Belgium in 1912, attempts to solve the fundamental conflict between science and the humanities through the humanization of science. It is now published as the organ of the History of Science

Society by the Harvard University Press and the Harvard Printing Office.

Never a prosperous journal from the economic point of view, it has recently suffered from the rise in printing costs and lack of editorial assistance. After reviewing the difficulties in 1946, the History of Science Society decided to reorganize the editorial offices in order to effect better cooperation with the printers. Mr. I. Bernard Cohen was installed as managing editor, under Dr. Sarton. To take care of the accumulation of unpublished manuscripts, four double numbers were brought out during 1947. Hereafter the journal will appear as a regular quarterly, probably with a revised format.

The Rockefeller Foundation in 1947 appropriated \$10,000 toward research and publication of research in the history of science under Dr. Sarton over a five-year period.

Educated at the University of Ghent, where he received a doctorate in mathematics in 1911, Dr. Sarton has devoted his life to establishing the history of science as an independent discipline. Three years after the founding of *Isis*, he moved to the United States, where he has lectured at a number of universities and received degrees and honors of many kinds. At the present time he is working on volume three of his *Introduction to the History of Science*, dealing with science and learning in the 14th century.

AMERICAN MUSEUM OF NATURAL HISTORY

HUMAN PALEONTOLOGY

Anthropological discoveries in Java and China during the past 10 years have added an exciting chapter to the story of man's remote beginnings. Recent findings by Dr. G. H. R. von Koenigswald, Dutch paleontologist,

formerly with the Geological Survey of the Netherlands East Indies, indicate that man's ancestors may have been giants some 500,000 years ago in the early Pleistocene period. Dr. Franz Weidenreich of the American Museum of Natural History believes that three distinct races of giant early man, of which we now have fragments, were more primitive than any hitherto identified and that they were a direct continuation back in time from *Pithecanthropus erectus*, the celebrated Java man.

Gigantopithecus blacki, the most primitive of these giants, has recently been identified on the basis of three enormous teeth obtained from Chinese chemists, who stock fossil teeth as medicinal preparations for various diseases. Comparative studies show that these teeth are unmistakably human and that including crown and root are from five to six times larger in volume than those of modern man. On the basis of preliminary studies Dr. Weidenreich believes that the Chinese giant may have been twice as large as a male gorilla. He would appear to have been a morphological continuation of Java man and hence connected with the normal-sized early human types.

Although Dr. von Koenigswald spent four years as a prisoner of war of the Japanese, he and his colleagues managed with much difficulty to conceal some of their valuable specimens and substitute casts for others. The tooth collection containing the *Gigantopithecus* specimens was stored in milk bottles and hidden by a Swedish friend. Meanwhile, Dr. Weidenreich had been working from casts in the United States, and in 1946 Dr. von Koenigswald joined him to collaborate in studying the combined Javanese and Chinese materials which were kindly loaned by the Netherlands Govern-

ment. Dr. von Koenigswald received a grant in aid of \$5,800 from The Rockefeller Foundation in 1946. As the loaned materials exceeded all expectations by a considerable factor, the Foundation in 1947 authorized in addition a grant of \$5,000 to the American Museum of Natural History in support of Dr. von Koenigswald's work. Since 1929 the Foundation has appropriated a total of \$331,700 for the human paleontological research of the Cenozoic Research Laboratory in China and for the research and publications of Dr. Weidenreich, formerly its director.

INTERNATIONAL METEOROLOGICAL ORGANIZATION

The sum of \$12,000 has been appropriated to the International Meteorological Organization to enable it to complete analysis and publication of data collected by the International Commission for the Polar Year 1932-1933. In this year 26 nations participated in a cooperative effort to gather planet-wide data on earth magnetism and electric currents, aurora and polar lights, electrical condition of the atmosphere, meteorological conditions especially at great heights, and the effect of these factors on radio transmission. Substantial support was provided by various governments and organizations, including The Rockefeller Foundation.

Due to the death of the director of the commission and subsequently to war-disrupted communications, analysis and publication of the records were delayed. The 1947 grant of the Foundation is equal to funds previously allocated for this purpose and allowed to lapse.

INSTITUTE FOR THE UNITY OF SCIENCE

The Unity of Science movement which began in Europe some twenty-five years ago has provided world

leadership in the efforts to evolve a sense of unity in science and to establish closer relationships between the natural sciences, the social sciences and the humanities. Interrupted by the war, the activities of the movement now center in the United States. A charter was recently granted to the Institute for the Unity of Science by the State of New York. The directors are Rudolph Carnap and Charles Morris of the University of Chicago, Philipp Frank of Harvard, Milton Konvitz of Cornell, and Hans Reichenbach of California. The purposes of the institute are to encourage the integration of knowledge by scientific methods; to conduct research in the psychological and sociological backgrounds of science; to publish pertinent bibliographies and other literature; and to support the International Movement for the Unity of Science.

The Rockefeller Foundation has allocated \$9,000 toward the activities of the institute for three years. A central office will be set up in Cambridge, Massachusetts, to facilitate continuation of the publications of the institute: *International Encyclopedia of Unified Science*, *Journal of Unified Science*, and *Library of Unified Science*. The institute also proposes to compile a critical bibliography in the field and to establish contacts with other groups active in England, the Netherlands and Italy as a step toward the organization of international congresses.

FELLOWSHIPS

In 1947 the Natural Sciences of The Rockefeller Foundation made available a fund of \$125,000 for fellowships, as compared with \$95,000 in 1946. During the year there were 56 fellows, whose main fields of study were biochemistry, genetics, physics, botany,

plant pathology, physiology, plant physiology, geology, mathematics, virology, irrigation methods, soil science, agricultural economics, plant breeding, organic chemistry, mathematical biology, molecular biology, agronomy, cytogenetics, chemical engineering, biology, physical chemistry, cell chemistry, geophysics, cytology and microbiology.

There were 8 fellows from Brazil; 7 from Mexico; 5 each from Colombia, Great Britain, Sweden and the United States; 4 from Denmark; 3 from France; 2 each from China, the Netherlands, Uruguay and Venezuela; and 1 each from Belgium, Chile, Costa Rica, Czechoslovakia, Iceland and Switzerland. Thirty of the fellows received Foundation aid for the first time; 17 fellowships were carried over from 1946; and 9 from 1945. The majority of the fellows studied in the United States; however, eight went to France, Sweden, Switzerland, England and Denmark.

The Rockefeller Foundation has supported natural sciences fellowships administered by the National Research Council continuously since 1918. In addition to regular fellowship funds, the Foundation since 1944 has appropriated \$585,000 for emergency predoctoral awards in the postwar period. In view of the proposed establishment of a National Science Foundation, which plans to devote large sums to scholarships and fellowships, the pattern of national support in this area may be profoundly influenced in the near future. In the meantime the need for advanced training is clearer and more pressing than it has been in the past, and the role of the National Research Council remains unchanged. During 1947 the Foundation grant of \$50,000 made possible 12 regular fellowship awards administered by the council. Ten of these were new awards, and two were continued

from other years. Under the council's predoctoral fellowship program there were 99 fellows during 1947. This program has enabled veterans whose training was interrupted by World War II to resume work toward advanced degrees.

In 1946 Brown University established a graduate division of applied mathematics in continuation of its training program in this field. The Rockefeller Foundation has supported the program for several years through the provision of funds for fellowships and other similar appointments. Twenty-one appointments were active in 1947. During and since the war New York University has also developed its facilities for advanced training and research in applied mathematics. With funds derived from a Foundation grant made in 1946, New York University administered 12 fellowships in applied mathematics in 1947.

GRANTS IN AID

The Natural Sciences division of The Rockefeller Foundation in 1947 administered a grant in aid fund of \$200,000. During the year the division made 53 grants, totaling \$199,967 and ranging in amount from \$700 to \$7,500.

Twenty-four of the grants were for research in the following fields: biochemistry, physiology, ecology, genetics, enzyme chemistry, protein chemistry, plant genetics, comparative neurophysiology, molecular and mathematical biology, organic chemistry, embryology and histology, botany, immunology and radiobiology. Thirteen grants were designated for travel. In five instances they permitted foreign scientists to attend the Fourth International Congress of Microbiology, Copenhagen, the Sixth International Congress of Experimental

Cytology, Stockholm, the summer symposium of the Society for Experimental Biology, at Oxford, a symposium of the Society for the Study of Development and Growth, Storrs, Connecticut, and the First International Biometric Conference, Marine Biological Laboratory, Woods Hole. Three grants were designated for agricultural study abroad by selected students in the schools of agriculture of Colombia and Honduras. One grant enabled the National Academy of Sciences to send a mission to Japan.

Other grants made it possible for European and South American research laboratories to obtain modern equipment. Those receiving such grants were: the Institute of Neurophysiology, University of Copenhagen; the Zoological Station of Naples; the Biochemical Institute, Helsinki; the Departments of Radiotherapeutics and Colloid Science and the Chemical Laboratory, University of Cambridge; the Strangeways Research Laboratory, Cambridge; the Department of Biochemistry, University College, London; the Laboratory of Biochemistry and Fats, University of Marseille; the Institute of Chemical Biology, University of Strasbourg; the Institute of Andean Biology, Lima; and the Faculties of Agronomy and Veterinary Medicine, National University of Colombia, Bogotá.

Among the institutions receiving aid for research were: Temple University, the University of Tennessee, the University of Cambridge, Swarthmore College, the University of Chicago, the American University of Beirut, the University of Stockholm, Northwestern University, University College, London, the University of California, Columbia University, Smith College, Yale University, Boston University, the University of Upsala, the University of Oxford, the Eidgenössische

Technische Hochschule, Switzerland, the Karolinska Institute, Stockholm, the University of Utrecht, the University of Amsterdam, the University of Leiden.

The American Mathematical Society received continued aid enabling it to contribute to the support of the Office of Scientific Personnel of the National Research Council. Assistance was also continued to the National Institute of Sciences of India for the publication of scientific journals in India.

The grants in aid were distributed to individuals in 14 countries: United States, 20; England, 9; Sweden and Colombia, 5 each; the Netherlands, 3; France and Denmark, 2 each; and 1 each in Italy, Lebanon, Finland, Honduras, India, Switzerland and Peru.

THE SOCIAL SCIENCES

THE SOCIAL SCIENCES STAFF

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THE SOCIAL SCIENCES

THE Rockefeller Foundation aims to build up a valid body of knowledge in the social sciences, to discover more generally applicable techniques for easing tensions and solving problems, and to train personnel in the use of these techniques. In the past it has placed considerable emphasis upon study of the national economy and the way in which this works, and upon research in international relations. More recently it has added to its program support to investigations of American political democracy, and in 1947 seven appropriations were made under the heading "Sociology, Social Psychology and Social Anthropology." In these broad fields, several subjects of immediate concern, such as civil liberties, housing and race relations are receiving attention. In addition, the important subjects of public opinion research and mass communication are now being studied with Foundation support.

The largest amount of money is still given, however, for research in economics and in international relations. The largest appropriation ever made by the division in the field of economics (\$1,300,000) was given in 1947 to the National Bureau of Economic Research for general support and for special programs in finance and fiscal policy. Other large grants, of \$100,000 or more, went to Harvard University, for its program of economic research, and to the Institute of Economic and Social Research in Paris for general support. The Brookings Institution received \$225,000 for research and education

in the fields of American foreign policy and international relations.

Funds were allocated by the Social Sciences in 1947 as follows:

The Functioning of the Economy	\$1,588,350
The Functioning of American Political Democracy	175,000
Sociology, Social Psychology and Social Anthropology	295,000
International Relations	518,025
Research and Training Agencies and Activities	180,000
Grants in Aid and Fellowships	295,000

Besides the fellowships administered directly by the Social Sciences, funds were given for fellowships to the Canadian Social Science Research Council and the Social Science Research Council in New York.

THE FUNCTIONING OF THE ECONOMY NATIONAL BUREAU OF ECONOMIC RESEARCH

A grant of \$1,300,000 was made by The Rockefeller Foundation in 1947 to the National Bureau of Economic Research toward the support of its general programs and for its special programs of research in finance and in fiscal policy during the next 12 years.

The bureau seeks to conduct, or assist in the making of, exact and impartial investigations in the field of economics, social science and industry. From the start it has included in its board leading representatives of diverse interests and ideologies. Socialists and conservatives, employers and trade unionists, practical men and economic theorists contributed to shaping its policy. Its investigators have not taken sides on issues of public policy. They have had one aim in common:

to substitute as far as possible fact for conjecture and tested theory for hypothesis, in order to give the world a sounder basis for teaching and for choosing among policy alternatives. Need for knowledge of this kind has grown more pressing and become more widely appreciated since the bureau's founding in 1920.

Beginning with investigations in the amount and distribution of national income, the bureau has gradually broadened its program to include studies in business cycles, employment, wages and prices. In the 1930's it added investigation in production and productivity trends, finance and fiscal policy. Work in all these fields continued during the 1940's. By entering new fields gradually and at the same time continuing work in old fields, following leads whenever results were promising, the various investigations have contributed to and built upon one another.

The program as it now stands deals with three broad topics: short-term fluctuations of activity of the economic system; the contemporary structure and operations of the economic system; and the long-term growth or decline of the economy and its parts.

Books, occasional papers, technical papers and bulletins issued to date by the National Bureau total approximately 200. The findings of these studies are cited in scientific and professional journals, textbooks, treatises and official documents. Practicing economists in business, editorial writers in the daily press, economic journalists, government departments and organizations in foreign countries which are similar to the National Bureau are making increasing use of bureau publications.

In 1948 the bureau proposes to inaugurate empirical and theoretical studies in the economic relations of the United States with other countries. Studies in the

growth of the American economy, now planned, suggest a broader emphasis on historical approach. The special programs of research in finance and fiscal policy will be continued, with the latter expanding somewhat because of the increased importance of fiscal policies in economic affairs resulting from the war and current developments in political-economic affairs.

HARVARD UNIVERSITY ECONOMIC RESEARCH

Since the years of the depression, the problem of business cycles and the issue of full employment have become both the subjects of theoretical discussion and the focusing point of much empirical investigation in the economic field. The development of a program of studies centered around the long-run questions of utilization and allocation of national economic resources, designed to study systematically the changing structural characteristics of the American economy by industries and regions, will fill an important need in this field of economics.

Professors E. S. Mason and Wassily Leontief at Harvard University are undertaking such a research program. With a view to establishing a coordinated approach to the problems involved, work is focused on a few specific topics:

1. Productivity in American industries: proceeding from a study of individual branches of production, transportation and distribution, the analysis will lead toward an integrated picture of the quantitative relationships between the resources used and the net output of the national economy.

2. Productive capital in the American economy: detailed statistical information available for individual

industries will be used to analyze the productive role of capital investment in the American economy, in particular the condition of its utilization, expansion, replacement and retirement.

3. New products and consumers' demand: the purpose of this sector is to collect and organize factual information on the experience which individual marketers, manufacturers and industries had prior to and with the introduction of new commodities. From this a workable analysis, a dynamic quantitative theory of consumers' demand for new goods, will be attempted.

4. Regional distribution of economic activities and long-run trends in locational patterns of production and consumption: on the basis of factual information collected and organized, the problems of locational shifts and developments will be studied in connection with the question of changed patterns of interindustrial relationships, the rise of new and the shift of old industries.

This program will complement and supplement the approaches of such organizations as the National Bureau of Economic Research, and will influence the advanced training of economists.

A grant of \$100,000 was made in 1947 to Harvard University for a program of economic research over a four-year period.

AMERICAN INSTITUTE OF ACCOUNTANTS

Income statements of corporations contain the basic data for a wide range of public and private policies and adjustments. Business policies and the decisions of tax authorities, legislative and administrative, and of rate regulatory bodies are based on these statements. In wage disputes between unions and management, ability to pay is discussed in terms of income statements; eco-

nomics students base their researches upon such accounting reports, and teachers use them as a constant point of reference.

There is, however, great confusion resulting from ambiguities and differences in the definition and use of terms. The American Institute of Accountants has, through its Committee on Terminology, drawn up a number of reports dealing with the most important commonly used terms, but real progress cannot be made except in cooperation with those who use the terms in their several disciplines. The committee has, therefore, initiated a survey and historical study of these accounting definitions and postulates and their varying significance in accounts and in financial statistics based on accounting material. An appropriation of \$30,000 from the Foundation will help to cover the expenses of this study over a period of three years.

The study is under the direct supervision of a small executive committee of institute members with the services of a research director, one or two assistants and a consultant. The committee will distribute material prepared under its direction to a study group, numbering from 30 to 40, drawn from the fields of economics, law, business and government, as well as persons in the accounting field. It is hoped that wide participation by concerned groups will encourage agreement on the use of terms in subsequent practice. The memoranda resulting will ultimately be published in the form of a report dealing with existing usages and presenting suggestions for clarification and standardization of terms.

INSTITUTE OF ECONOMIC AND SOCIAL RESEARCH, PARIS

During the war, the French Government set up a great number of official offices to conduct economic

surveys. Such multiplication of government organizations, instead of reducing the usefulness of private institutes for economic research, has, on the contrary, increased it. The studies of government agencies are most often directed toward immediate practical conclusions. The necessity of having a research center in economics and social science, the sole object of which is to find out and publish the development of the main factors of economic and social evolution becomes more urgent than ever.

Since its organization in 1933 under the directorship of Professor Charles Rist, the Institute of Economic and Social Research in Paris has carried on a research program in economics and closely related fields; and before the war it became a training center for teachers, research workers and public servants. During the war the institute was able to maintain a skeleton staff which continued some of its research; several important studies made at that time await funds for completion and printing. M. Bunle, former director of general statistics of the Government of France, has been appointed temporary assistant director of the institute, and is engaged in a major study of international exchange and French foreign trade.

The aim of the work is to make known the variations of world trade and the evolution of foreign trade in the principal countries during the last 50 years, and to determine the laws which have governed this trade in order to bring out the mechanism of its adjustment. The institute also plans to resume its prewar continuing study of economic fluctuations on a comparative basis, the results of which are published quarterly in the institute's *L'Activité Économique*.

The Rockefeller Foundation made a grant of \$130,000 to the institute, part of which was to be used during 1947 for equipment and for printing accumulated studies; the rest was given for the general expenses of the institute during 1947 and 1948.

UNIVERSITY OF OXFORD
AGRICULTURAL ECONOMICS RESEARCH INSTITUTE

A research project at the University of Oxford, supported by The Rockefeller Foundation in 1947 with a two-year appropriation of \$28,350, emphasizes the inter-relationships between agricultural and industrial activities, which have been often studied as though they constituted separate worlds. The work is under way in Oxford's Agricultural Economics Research Institute, under the directorship of Professor A. W. Ashby who, as head of the Bureau of Agricultural Economics at Aberystwyth in Wales, developed many of the best agricultural economists in Britain.

The group under Professor Ashby's direction will attempt to discover the relationships between the prosperity of industrial and of agricultural populations and the possibilities of industrial expansion with changes in agricultural productivity. The relative economic and personal mobility of agricultural and industrial populations will be studied under conditions handicapping and favoring desirable transfers between agricultural and other occupations. Estimates of the general possibilities of adjustment of productive and service capacities between agriculture and other industries and services will be undertaken.

The studies will cover selected countries with varying environments of agriculture and of industries. When

experience has been gained and methods fully determined, Professor Ashby will extend the geographical scope of the study as far as is possible.

**THE FUNCTIONING OF
AMERICAN POLITICAL DEMOCRACY**

**PACIFIC COAST BOARD OF
INTERGOVERNMENTAL RELATIONS**

The Foundation gave its support in 1947 to a pioneering educational experiment in intergovernmental relationships at the working level. On the Pacific Coast the governors of Washington, Oregon and California, the chairmen of the three State Leagues of Cities and State Associations of County Commissioners and the Coast regional chiefs of 11 Federal agencies, have created a Board of Intergovernmental Relations. The board aims to improve and coordinate government through meetings for the discussion of common problems, and acts as a non-profit association solely to inform its individual members and, through them, the public of general and current problems. It takes no action, directly or indirectly, which might be construed as carrying on propaganda, or otherwise attempting to influence legislation.

Thus far every meeting has had virtually full attendance, from the three governors down. Typical subjects discussed to date include federal-state-local tax and fiscal relationships; division of welfare costs; forest development, conservation and protection; educational programs for veterans and non-veterans; problems of minorities in metropolitan centers; employment and unemployment; public works planning and timing; adequate housing programs; industrial reconversion; availability of materials; and surplus property disposal.

The Foundation's assistance to the board amounted to \$30,000 for use over a three-year period.

CORNELL UNIVERSITY
STUDIES OF CIVIL LIBERTIES

Maintenance of civil liberties is one of the characteristics of our democracy in which we take pride. Studies such as those under way at Cornell University on civil liberties in wartime, under the direction of Professor R. E. Cushman, are a means of finding out how our policies measure up to our protestations. Foundation support of these studies, begun in 1944, was continued in 1947 with a one-year grant of \$10,000.

The new grant makes possible three studies on important problems. The military suppression of civil government in the Territory of Hawaii during nearly the entire period of World War II was held by the Supreme Court in 1946 to be unlawful. A careful study of this difficult and controversial situation by Mr. Garner Anthony, formerly attorney general of Hawaii, is already in process. The policies and procedures concerning the treatment of enemy aliens during and after World War II are in striking contrast to the experience following World War I. The whole problem is one of interest and importance. Mr. Thomas M. Cooley II, formerly head of the Enemy Alien Control Unit in the Department of Justice, is undertaking a thorough study of this subject. Professor Cushman is writing a history of civil liberty in World War II as a general review of the entire management of these problems during this period.

NATIONAL INSTITUTE OF PUBLIC AFFAIRS
TRAINING PROGRAM FOR PUBLIC SERVICE

The National Institute of Public Affairs recruits from the immediate graduates of the colleges and uni-

versities in the country talent for administrative and management posts in the Government of the United States and other jurisdictions. Sponsored by a board of public-minded citizens and acting as a liaison unit between the colleges and universities and the Federal departments, it has completed the twelfth year of its unique public service training program, under which 30 to 50 college graduates each year have been selected and given rotating assignments on a non-salaried basis within Federal agencies. The institute provides intensive orientation, supervision and a carefully planned program of reading, studies and conferences with public officials.

The Foundation has supported this program since 1935. Maintenance for about half the interns is financed by funds or fellowships raised by various colleges or their alumni. Encouraging is the competition and career interest which the program stimulates on college campuses throughout the country; also the rapidity with which graduates of the institute have risen to positions of responsibility in public life.

A natural complementary development, guided by the institute in its first stages is a parallel inservice training program, for selected personnel of some 15 Federal departments or agencies, which is now in its seventh six-month session under a coordinator furnished by the Civil Service Commission. The Departments of State, War, Navy, Commerce and Agriculture are supplementing this with coordinated programs of their own.

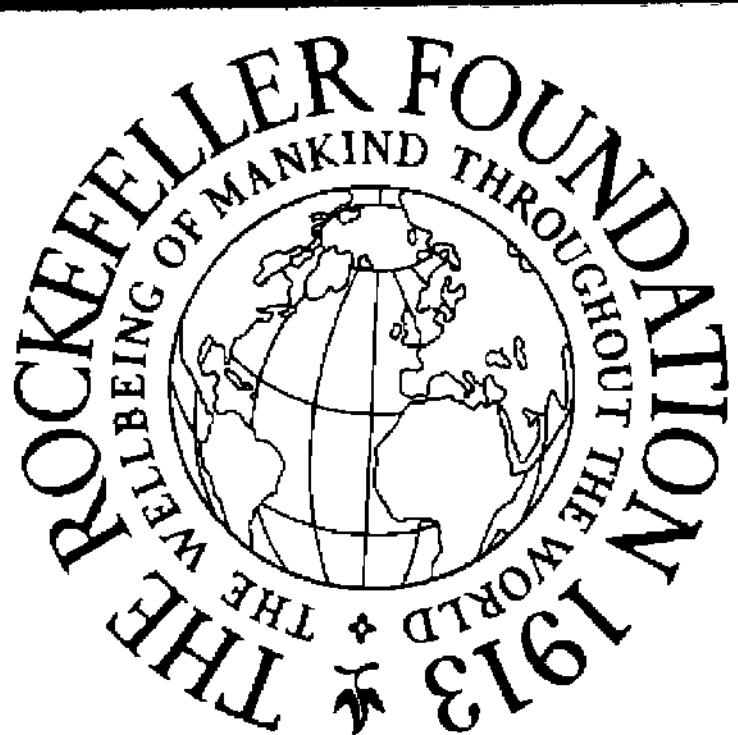
A two-year appropriation of \$70,000 from The Rockefeller Foundation in 1947 helped the institute in the initiation of a new plan. So far as is possible an inservice examination for junior professional assistants will be held annually in early November. The institute will have previously developed the maximum of candidates and will cooperate in selecting the best of the successful

applicants for institute training. It is hoped that the group so selected will then be placed on departmental payrolls immediately following graduation (eliminating the present maintenance problem), given educational leave in October for intensive orientation and then returned to their work for a further eight months of supervised work, outside study and conference. All this will be done within civil service regulations, thus integrating and identifying the program more closely with Government.

SOCIAL SCIENCE RESEARCH COUNCIL PLANNING IN HOUSING

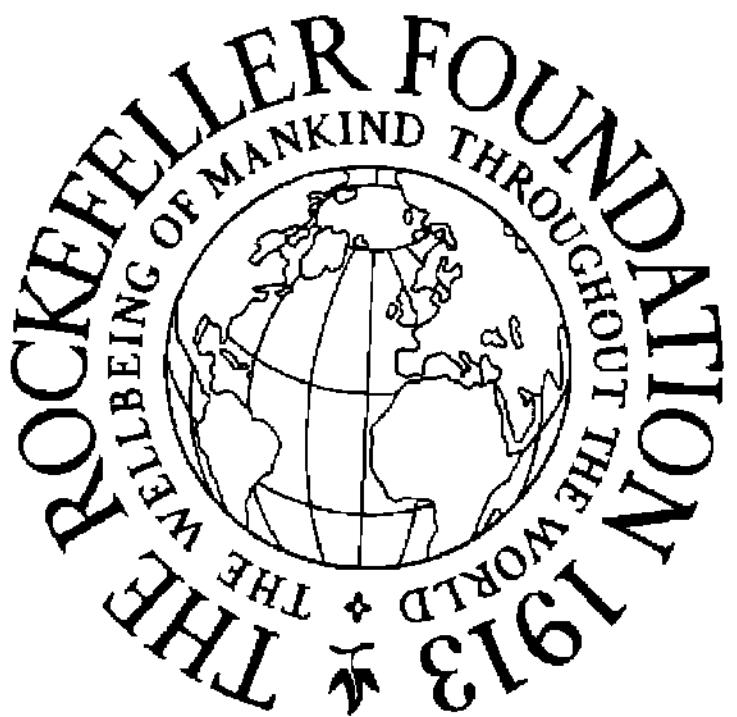
Housing research completed or in progress represents only a beginning toward the comprehensive, interdisciplinary research program which is essential to a solution of the housing problem. Some of the more important subjects which call for exploration are: housing market mechanisms and processes; housing industry; social requirements affecting housing standards; location factors in housing investment risk; sociology of housing demand; history and evaluation of basic housing legislation — federal, state and local. Basic studies are needed on housing standards, rural housing, housing management and administration, housing in the national economy, taxation of housing, police power regulation of housing, housing finance and the causal relationships between housing and ill health as well as personal, family and community disorganization.

A committee appointed by the Social Science Research Council to explore the situation recommended a continuing committee in the field to identify specific research needs and develop plans for projects, encourage the adequate training of personnel and promote research activity. Preparation of an outline of the topics



Photograph Excised Here

A study at the National Bureau of Economic Research.



Photograph Excised Here

Housing Research Committee, Social Science Research Council.

requiring investigation is the committee's first task, to be followed by intensive planning in selected areas and publication of a series of research planning reports. Subsequent activities will probably cover educational and training facilities, provision of advisory and informational services as a means of facilitating research projects, and cooperation with agencies working in the housing field.

With a few changes and additions the exploratory committee is being constituted as the continuing committee, with Professor Richard Ratcliff of the University of Wisconsin as chairman. The Rockefeller Foundation is supporting the work of this committee with a three-year appropriation of \$45,000.

UNIVERSITY OF NORTH CAROLINA COKER FAMILY BIOGRAPHY

The Social Sciences division made an appropriation of \$20,000 in 1947, outside of its regular program, for a biography of the Coker family, key leaders and builders of a region in the South. It was felt that the delineation of one of the outstandingly creative influences on the quality of southern life and living might suggest some conclusions as to the essentials of economic, intellectual and civic leadership in the South.

Professor Francis W. Coker, until recently chairman of the Political Sciences Department of Yale University, is making the study under the auspices and with the assistance of the Institute for Research in Social Science of the University of North Carolina. The study will trace out and, if possible, explain the contribution and achievement and influence of one of the leading families of the South. The study will begin with the circumstances and experiences of the Coker family in the

defeated and impoverished South at the end of the Civil War. It will analyze the family record as that of an especially persistent family unit which continued its strong local and regional attachments. The activities of the family's social, political, philanthropic, educational and scientific interests will be related to the hardships of a depressed South; to the shift from an old agriculture to a new; and to the transition from agriculture to industry.

**SOCIOLOGY, SOCIAL PSYCHOLOGY
AND SOCIAL ANTHROPOLOGY**

**STATE UNIVERSITY OF IOWA
CHILD WELFARE RESEARCH STATION**

An extremely encouraging factor in the current social science outlook has been the interchange of concepts and research methods between separate disciplines. The exchange has been particularly fruitful in the fields of social anthropology and psychology. The Child Welfare Research Station at the State University of Iowa is bringing the concepts and techniques of these two fields to bear on the problem of the psychological development of the child. A five-year appropriation of \$62,400 from the Foundation was approved in 1947 for support of this work.

The Iowa group plans to concentrate on the crucial period of preschool and elementary school development. They will start with a description and an analysis of the way in which children influence the behavior of other children, the way in which parents control child behavior and the ways in which the community affects the pattern of parental control of children. Under the direction of Professor Robert R. Sears, the research team will apply the latest anthropological and psycho-

logical methods and theories to the twin problems of the child as he enters his society, and the society as it assimilates the child. The team will consist of a child psychologist; a social psychologist, who will concentrate on parent-child relations and family influences; a social anthropologist interested in child culture; and a sociologist interested in adult culture. This pilot study will be done in Iowa communities in which there are close relationships between the Child Welfare Station and local leaders.

UNIVERSITY OF CHICAGO RACE RELATIONS

The problems of race relations and of minorities in the United States constitute a most critical aspect of American democracy. If they are not thoroughly understood and effectively treated, they will furnish a formidable threat to our social order and a serious obstacle to the social progress of America.

In 1947 the Foundation made an appropriation of \$75,000 to the University of Chicago toward support of a program in training and research in race relations over a five-year period. The program is under the direction of a committee headed by Professor Louis Wirth and representing the departments of sociology, anthropology, education, social psychology and industrial relations.

The committee is treating race relations and minorities as a generic problem and will use the discoveries in each specific case to help build up generally applicable knowledge and techniques. Pilot projects will be set up in cooperation with action agencies in order to test the programs of such agencies in the field. The committee will also develop manuals for public officials, such as

policemen and administrators, and such private groups as personnel managers and journalists.

The educational program, a most important by-product of the research, will consist of two essential features: (a) the infusion of authentic knowledge based upon research into the curricula of schools at all levels through the production of teaching materials and the improvement of communication, and (b) the advanced training of students and practitioners through seminars, field investigations and formal instruction.

The committee will have close connections with other departments and schools in the university. In addition, it will cooperate with the American Council on Race Relations and with other research workers in this field in various universities and private organizations.

UNIVERSITY OF MINNESOTA INDUSTRIAL RELATIONS CENTER

There has been in recent years a continuing and growing interest in industrial relations. The close of the war, labor-management relations in reconversion, the heightened public interest in industrial peace, all have tended to focus popular attention on industrial relations. Better labor market data and a clearer understanding of cause and effect relationships in labor markets are recognized as essentials in a sound long-term program of labor-management collaboration.

Of the universities which have active centers at work on labor-management problems, the University of Minnesota has concentrated particularly on the labor market. For more than 20 years, a team of psychologists and economists at this university has been actively engaged in studies of Minnesota's labor market. In 1945 the university created its Industrial Relations Training

and Research Center, designed to integrate and facilitate cooperation in training and in research in the effective utilization of human resources. In order to further research at this center, The Rockefeller Foundation in 1947 made the university a three-year appropriation amounting to \$45,000.

The policy and program of the new center are in the hands of an all-university faculty committee, representative of the departments of economics, psychology, political science, engineering, agricultural economics, business administration and sociology. An advisory council representative of the public, labor and management, provides active liaison with the community and its problems. The center will work on a variety of problems and services, concentrating its major effort on long-range studies in the areas of its greatest experience and strength.

The group at Minnesota is seeking explanations of the behavior that characterizes the labor market by whatever scientific approaches appear likely to shed additional light. It will combine the techniques of two or more sciences where such a combination appears likely to increase understanding of labor market phenomena. Through the accumulation of understanding gained from such many-sided attacks, it is possible that a general theory of labor market behavior can be developed.

COLUMBIA UNIVERSITY TRENDS IN LABOR UNION LEADERSHIP

Mr. J. B. S. Hardman has been a student of the labor movement for over a quarter of a century and, for many years, was an editor of labor publications. Under a three-year Foundation grant of \$23,500 to Columbia

University, Mr. Hardman proposes to study trends in union leadership and the elements in the American industrial scene which affect it. He will consider such factors as the influence of employer policy; the influence of certain legal decisions; the influence of political and social ideas whether from within the country or without; and the effect of the economic and political environment. Supplementing this will be an examination of union membership opinion through the use of the interview and question-answer method. In the proposed study, Mr. Hardman is utilizing his personal lifetime experience and the material already available, as well as data from field research.

NATIONAL OPINION RESEARCH CENTER

During the last two years, postwar problems have given a tremendous impetus to the use of opinion research in most of the countries of the world — so much so that at present there is a genuine shortage of experienced practitioners and an urgent need for the improvement and standardization of techniques.

In 1945 the Foundation made an appropriation to the Social Science Research Council for a study of sampling methods. This was the first in a series of studies developed by the Joint Committee of the Social Science Research Council and the National Research Council on the Measurement of Opinions, Attitudes and Consumer Wants, which is analyzing the problems of methodology involved in the conduct of polls of attitude and opinion and is undertaking, in fact, a complete and critical scientific review and appraisal of such methodology. The object is to make clear which are defensible methods in the conduct of polls and which are not, and to indicate the limits of utility of polls.

The second project recommended by the Joint Committee was a study of the isolation, measurement and control of interviewer effect. The Foundation in 1947 appropriated the sum of \$42,100 to the National Opinion Research Center in Denver, Colorado, to carry out such a study over a two-year period.

However great may be the possibility of bias at other stages in the survey procedure, errors arising from the handling of the interview situation are crucial, because it is in the interview that data are elicited and recorded. Reliance has to be placed upon the interviewers' character and competence. Yet this is the very stage of surveying that is often entrusted to the least skilled, lowest paid and most impermanent members of the survey staff. It is important, therefore, that interviewer effect on public opinion data be studied systematically in order to discover and utilize feasible means for preventing its distorting effects.

The study by the National Opinion Research Center aims (1) to isolate types of variables that are imported by interviewers to the interview situation and to determine the extent to which these variables bias respondents' behavior and interviewers' observations, and (2) to test the amenability of these variables to control through selection, training, assignment and supervision of interviewers, through questionnaire construction, through selection and improvement of interviewing methods, or other means.

COLUMBIA UNIVERSITY

BUREAU OF APPLIED SOCIAL RESEARCH: PANELS

A third project recommended by the Joint Social Science Research Council — National Research Council Committee on Measurement of Opinions, Attitudes

and Consumer Wants was a study of panel methods. The Bureau of Applied Social Research at Columbia University received in 1947 a two-year Foundation grant of \$27,000 to conduct such an investigation.

The purpose of the study is to analyze, codify and improve the techniques of panel surveys for research on opinion, attitudes and consumer wants. The panel process in consumer research has been used by commercial concerns for years. Upwards of 100 panels are now being conducted in New York alone. The work at Columbia, under the direction of Dr. Paul Lazarsfeld, centers around three exploratory surveys of existing materials:

- (1) A discussion of the main panels in use at present, including the opinions of the panel directors themselves as to the values of their own methods of operation.
- (2) A collection of available information on the attitudes of participants.
- (3) An analysis of available records concerning variation of replies from one group to another and from one inquiry to another within the same group.

In addition to these general surveys, two specific studies will be outlined on the basis of data collected: a study of those who participate and who do not participate, with special regard to the question of how selection of participants influences the main results of a panel inquiry; and a presentation of the theoretical problems and available evidence on the influences affecting the formation of opinion and the change of opinion.

This work at Columbia is a necessary step in the sequence of studies looking toward the improvement of the methodology of polling. Its results should be of wide interest to publishers, businessmen, politicians, govern-

ment administrators and students of the processes of public opinion.

COLUMBIA UNIVERSITY

BUREAU OF APPLIED SOCIAL RESEARCH: SPECIAL STUDIES

The activities of Columbia's Bureau of Applied Social Research fall into three categories: service jobs with scientific implications; research development; and student training. In order to make the results of its work more widely available and useful to other students of social problems, the bureau is undertaking three special studies, which The Rockefeller Foundation is supporting with an appropriation of \$20,000.

It will prepare a comprehensive volume on the social role of media of mass communication, based on data and findings developed during the past 10 years and some reappraisal and analysis of raw data. The bureau has collected considerable data and information on all the mass media of communication, their social control, their content, the structure of their audiences, and the extent and nature of their effects. Originally the bureau was concerned with the field of radio; later it branched out into the study of magazines and newspapers, and recently it has carried out investigations of comic strips and movies.

A second project is to develop a master sample of sociological data in New York City. On the basis of existing studies, the bureau will select a sample representing a social microcosm, comprising approximately a thousand blocks exhibiting the same averages and distributions as does the city as a whole. Annual municipal statistics and the decennial census will correct and keep the sample up to date. It is expected that funds for the latter purpose will be provided by local city organiza-

tions using the sample and that, as the practical uses of the sample become more apparent, the project will become self-supporting.

The third project is the preparation of a document appraising and coordinating methods of field work in community research. The bureau has conducted several studies of local communities and noted important gaps in prevailing research methods.

INTERNATIONAL RELATIONS

THE JOHNS HOPKINS UNIVERSITY

INTERNATIONAL RELATIONS

There is an urgent and ever-increasing need in this country for basic information on the economic and political structure of the world and on the trends and forces which prevail and collide in various parts of the world and which affect the United States in its international relations. It is not enough to point out these trends and forces, it is essential to measure and weigh them.

At Johns Hopkins University, Dr. W. S. Woytinsky has undertaken a piece of work which should help to answer this demand by giving an inclusive statistical picture of the different patterns of life of all nations of the globe and of the conditions in which they are facing the future. It will provide at least a partial background for discussion of such problems as the future of various races and continents; the fate of colonial empires; relations between industrial and agricultural nations; growth or decline of foreign trade; competition of raw materials, sources of energy, and means of transportation within the world economy; and conditions of world prosperity and peace. The work goes beyond the simple source book of statistics of international interest, in that these statistics are selected and organized with reference to specific problems of international importance.

The resulting volume, *America in the Changing World*, should be valuable in promoting a better understanding of statistics, not as a mathematical discipline but as quantitative thinking on human affairs. The Rockefeller Foundation is supporting this project with a three-year appropriation of \$37,400.

COUNCIL ON FOREIGN RELATIONS

The Council on Foreign Relations brings together the various skills of scholars, men of affairs and public officials, and provides effective management for their undertakings. The Rockefeller Foundation has supported its research activities for 20 years, and continued to do so in 1947 with an appropriation of \$60,000 for use over a period of three years, which provides a terminating grant in line with a policy of discontinuance of general support to non-university research agencies in this field in favor of support of specific projects.

The role of conflicting ideologies in foreign affairs is under discussion in a study group which the council has recently initiated on public opinion and foreign policy. The central problem of the group concerns the proper function of propaganda in the conduct of foreign affairs. Progress has been made on another study, the problem of Germany, which is financed by a special grant from The Rockefeller Foundation. (See page 209.) The Netherlands Institute of International Affairs invited the Council on Foreign Relations to participate in this study, which is being undertaken on an international basis.

In addition to these projects, which are conducted by the study group method, the council's Committee on Studies has research projects under way, the most recent of which is a study on the limitation on liberalism in commercial policy, by William Diebold, Jr. At present,

the council's discussion groups are dealing with American-Soviet relations; Western Europe (a subject of prime interest to this group will be the Marshall Plan); financial policy of the United States; American interests economic and political, in the Middle East; and postwar problems of international air transport.

The survey entitled, *The United States in World Affairs*, publication of which was suspended during the war, was issued in 1947 and will continue to appear annually. The council also serves the public through its quarterly journal, *Foreign Affairs*. Another product of its program of research and publication is the *Political Handbook of the World, 1947*.

BROOKINGS INSTITUTION INTERNATIONAL RELATIONS

The emphasis of the program of the Brookings Institution on research and education in the fields of American foreign policy and international relations is in terms of current problems.

Foreign policy presents itself as a series of specific problems—some highly immediate, others “emergent.” The institution’s method is to try to make clear what these problems are; what their relative importance is to the world and more particularly to the United States; why and how they have arisen or are likely to arise; what different ways there are of handling them, either by international action in which the United States participates or by a combination of international and national action involving the United States; and what the consequences are likely to be for the American people of each particular course of action.

In working toward its first aim the institution intends to publish the following studies and annual surveys:

Five basic studies:

- Origin and Interpretation of the UN Charter.
- Foreign Policy Objectives of the Major Powers.
- Influences Making for Economic War or Economic Peace in International Relations.
- New Concepts of International Security.
- International Organizations and Conferences as New Methods of Diplomacy.

Two annual surveys:

- A survey of the problems confronting the United States in the field of foreign policy.
- A survey of the operations of the United Nations and of the problems before the organization.

A series of special studies of current and long-range problems.

To further the training of specialists it plans an annual two-week seminar for about 100 teachers of international relations. A small book based on the materials presented to the seminar and on the discussion will be published each year as a guide for teachers and lecturers in the field.

The institution has repeatedly demonstrated its capacity to carry through its undertakings in time to be of constructive aid in the formulation of national policy. Its program is one of the few attempts to project analytical methods of the social sciences into the study of the future, to examine the research techniques which are applied in the study of future policy decisions, and to spread the understanding of these procedures of analysis to several hundred key persons working in international relations.

During the past year the institute organized a documentation and reference unit; Dr. Leo Pasvolsky, director of the new program, reached the final manuscript stage of his basic study on the origin and interpre-

tation of the United Nations Charter; the first number of the yearbook of the United Nations was brought near completion; the first annual seminar took place at Dartmouth College in the summer of 1947; and the institute made additions to its staff with a view to putting the program in full swing during 1947-1948. The Rockefeller Foundation continued its support of the program with a three-year appropriation of \$225,000.

COMMISSION OF THE CHURCHES ON INTERNATIONAL AFFAIRS

The Commission of the Churches on International Affairs, established in 1946, is proceeding experimentally in its effort to coordinate the resources of the churches affiliated with its parent bodies, the World Council of Churches and the International Missionary Council, toward the creation of a new type of moral mechanism. The commission has laid out three lines of activity: establishment of national commissions; continuing relations with national commissions; relations with the United Nations. Representatives of the commission observe and study happenings at the United Nations, and the results of their study on selected problems of international justice and world order, including economic and social questions, are placed at the disposal of the national commissions. The commission then calls to the attention of the churches the problems especially claimant upon the Christian conscience at any particular time and suggests ways in which Christians may act effectively in relation to these problems. Statements are prepared which reflect a consensus of its constituents throughout the world and the opinions reached by the commission or by local church groups are communicated to appropriate officers of the United Nations.

A major conference of the commission has been called for August 1948 to review its preliminary work and to determine the lines for permanent organization and activities. This will involve participation by the worldwide membership of the commission. An appropriation of \$15,000 from The Rockefeller Foundation will be used toward the expenses of preparing for and holding this and other international conferences during 1948.

NETHERLANDS INSTITUTE OF INTERNATIONAL AFFAIRS CONFERENCE ON THE GERMAN PROBLEM

Whatever the decisions now being reached with regard to the future of Germany, the economic and cultural interdependence of nations will long make Germany a key problem. For the purpose of considering the possibilities of arranging a conference to clarify the economic and cultural aspects of the German problem, representatives of the Royal Institute of International Affairs, London, The Centre d'Études de Politique Étrangère, Paris, the Institut de Science Économique Appliquée, Paris, and the Netherlands Institute of International Affairs, The Hague, met informally in Paris in July 1946.

The decision was reached to hold a six- to eight-day conference in the Netherlands. A representative standing committee was formed to direct preparatory activities, and the secretariat was entrusted to the Netherlands Institute. It was voted to invite, in addition to the four initiating groups, delegates from organizations concerned with research in international affairs from eight other countries.

Many of the countries of Europe are reaching out not only to reestablish contacts with the intellectuals of other countries, but to find the way toward a common policy. This conference, entirely apart from its practical

value, offers a fruitful medium through which students of international relations may come together and work towards the development of some common understanding and opinion and policy for Europe. The Rockefeller Foundation has supplied \$25,000 toward the expenses of the conference, now scheduled for April 1948.

COLUMBIA UNIVERSITY
RUSSIAN INSTITUTE

Two years ago The Rockefeller Foundation made an appropriation to Columbia University toward the development of a Russian Institute in the School of International Affairs. The institute was formed in order to advance knowledge in the Russian field through the coordinated research work of faculty and students, and to train students as American specialists in the Russian field. The institute provides a broad background and training in five disciplines (history, economy, law and government, international relations and the social and ideological aspects of literature) as applied to Russia; an intensive research training in one of these five disciplines elected by the student; and fundamental graduate training in the broader aspects of this elected discipline.

With many institutions now offering various aspects of Russian studies at the undergraduate level it has become urgent to find ways and means of raising the standard of existing instruction in this field and of promoting research interests among those who carry on that instruction. In a few years scholars trained at the Russian Institute at Columbia will be available to meet this broadened demand. But the problem of producing trained personnel is immediate. The institute, therefore, decided on assistance in the form of senior fellowships

to some of those persons now conducting instruction in Russian subjects in various universities to enable them to improve their equipment and to develop further their own effectiveness in Russian research.

Research fellows will be appointed from a number of leading institutions throughout the country. Choices will take into account both the contribution which the applicant is able to make in the general development of Russian studies at his institution and in the improvement of research technique. The sum of \$75,000 given by the Foundation in support of this program will provide in the neighborhood of 15 such awards.

ROYAL INSTITUTE OF INTERNATIONAL AFFAIRS

Professor Arnold J. Toynbee has been director of research for the Royal Institute of International Affairs since before the war. During the war, he headed the Foreign Research and Press Service, which for a time was an integral part of the institute, but later was taken over by the Foreign Office of the British Government. Since his return to peacetime activities, Professor Toynbee has become the director of the institute's study of the history of the war and of the peace settlement.

In addition to his responsibilities to the Royal Institute, Professor Toynbee has been engaged upon a monumental piece of research, his *Study of History*. About two-thirds of this has been completed and six volumes have been published. The value of continuing this work and completing publication as soon as possible has become increasingly evident, and it was to enable Professor Toynbee to do this that the institute proposed his release for a part of each year from the direction of the war and peace studies. With the aid of a five-year appropriation from The Rockefeller Foundation of

\$50,625, the Royal Institute of International Affairs will provide Professor Toynbee with periods of absence each year and will appoint for these periods a deputy director of research for the institute and also someone to take responsibility for the war history study.

CARNEGIE FOUNDATION, THE HAGUE LIBRARY OF THE PALACE OF PEACE

The Library of the Palace of Peace at The Hague is the library of the Permanent Court of Arbitration, the Academy of International Law and the International Court of Justice. Agents appearing for countries and organizations in cases before the International Court of Justice also rely on its library services.

During the war the library could not obtain publications from abroad, and although the subvention by the International Court of Justice is 20 per cent larger than that of the old court, available funds are inadequate for the purchase and cataloguing of materials which appeared during the period 1939-1946.

The Rockefeller Foundation in 1947 provided \$30,000, through the Carnegie Foundation at The Hague, to fill some of the gaps in the library's collection which might remain unfilled because of the understandable reluctance on the part of governments at this time to supply sufficient funds for reference purposes. The library will use the appropriation over a four-year period to purchase books, periodicals and pamphlets and to catalogue these materials.

RESEARCH AND TRAINING AGENCIES

COMMITTEE ON FINANCING HIGHER EDUCATION AND RESEARCH

It has become increasingly evident that a crisis is confronting administrators of universities and colleges

in the financing of their institutions. Inflation in enrollments, the increased demands for the results of research, the rising costs of all budget items have come at a time when a sound educational system is vital to the maintenance of a democratic government and of peace. If governmental aid becomes a factor, means must be found for preserving a balance and division of labor between educational institutions whether they derive their support from governmental sources, private sources, or a combination of both.

The problem is so vast that foundation funds in themselves cannot offer a solution. On October 24, the director for the Social Sciences of the Foundation called a conference for the purpose of discussing the problem and means of approaching a solution. In addition to Foundation and General Education Board officers, there were present representatives of university administrations and organizations concerned with some of the problems of higher education.

The conference group agreed that a study or series of studies concerned with the internal efficiency of educational institutions, methods of getting more return on funds from present sources, methods of developing new sources of support, implications of governmental aid, and finally the role of and need for higher education and research would be important and helpful. The group further favored the immediate appointment by the Foundation of a small independent committee, representative as far as possible of the various types of officials concerned, to assume the responsibility for submitting to the Foundation within the next few months recommendations covering the definition of the problem and the planning of the task.

Provost Paul Buck of Harvard University has agreed to assume the chairmanship of the committee; and Neil

Jacoby, dean of the College of Business Administration, University of California, at Los Angeles, has consented to become the vice-chairman and active director of staff investigation. Other members are as follows:

Provost James P. Adams, University of Michigan
Dr. Donald R. Young, executive director, Social Science Research Council
Mr. Guy Emerson, chairman, Executive Committee, John Price Jones Corporation
Vice-President George A. Brakeley, Princeton University
Vice-President James A. Perkins, Swarthmore College.

The Foundation has appropriated \$10,000 for the expenses of this committee.

ÉCOLE PRATIQUE DES HAUTES ÉTUDES, PARIS

In 1868 the French Minister of Education founded the École Pratique des Hautes Études for the purpose of providing France with an independent organization devoted to research and to the teaching of methods of research. It provides teaching, technical and research staff for the faculties of universities, of governmental and private institutions and for the Centre National de la Recherche Scientifique of the French Government. Like graduate schools and research institutes in the French educational system, it is supported largely by the French Government and is under the supervision of the director of higher education.

During 1947 the school organized for the first time a section for economic and social sciences with a few professors from the other sections who were in fact teaching in the field of the social sciences. The director of higher education, Pierre Auger, will add four new chairs in 1948 and hopes ultimately to secure from three to five additional staff members. The new section will deal with

critical history, economic history, economic law, labor law, economics, geographic economics, social and economic research, statistics, cartography, demography and economic theory. Foundation support, given through the Office National des Universités, Paris, and amounting to \$30,000 will provide funds for some personnel as well as for research materials and books.

SOCIAL SCIENCE RESEARCH COUNCIL FELLOWSHIPS

One of the greatest problems in the academic world today in all fields is the shortage of well-trained personnel. In the social sciences, the Social Science Research Council, through its fellowships, is making an effective contribution toward the alleviation of the shortage and the improvement of quality.

The fellowship program of the council was one of its major continuing interests until 1944, when this was to a large extent replaced by a program of demobilization awards, which made possible special action to aid persons either in government or in military service to resume scholarly work. The flexibility with which this program has been administered has permitted a more effective use of fellowship funds under the circumstances created by the postwar situation.

Three factors are perpetuating the war-created deficit of well-qualified social science research personnel in the younger age groups. The tremendous demand for college teachers has led many men to accept teaching positions without completing their training. Secondly, large numbers of potential research workers who received salaries in government or industry far above the prevailing academic rate are not in a position to make the economic sacrifices necessary to obtain further training on their

own. And in the third place, men who might have completed research training have been acquiring family responsibilities which make such sacrifice even more difficult. These economic needs must be met if the group whose training was most seriously affected by the war is to complete its preparation for research careers.

The Social Science Research Council, therefore, is continuing its fellowship program with some changes in its administration indicated by the experience with the demobilization awards. The Rockefeller Foundation is continuing support of the program with an appropriation of \$100,000 for allocation during the year beginning July 1947.

CANADIAN SOCIAL SCIENCE RESEARCH COUNCIL FELLOWSHIPS

The Social Science Research Council in the United States has for a number of years given fellowships to Canadian scholars in the social sciences. It has become increasingly apparent that Canada should have its own fellowship program for this purpose. The Canadian Social Science Research Council, in addition to administering small grants in aid, has provided professorial assistance at upper levels. It has now undertaken a fellowship program, which will deal with applications of an intermediate nature and is designed to assist junior staff members of small institutions who can arrange for leaves of absence. In setting up this program careful consideration has been given to regional problems. The committee which will be responsible for selecting fellows is made up of professors representing different fields in the social sciences from various parts of Canada. Plans for the program are at the moment flexible and will take shape as needs become evident. The sum of \$10,000

given by the Foundation in support of this program will provide fellowships for two years.

COLUMBIA UNIVERSITY
COUNCIL FOR RESEARCH IN THE SOCIAL SCIENCES

The general function of the Council for Research in the Social Sciences at Columbia University is to encourage and develop scholarly research in the social sciences among the faculty members. The objective in practical terms is to serve the creative scholar and ensure an environment conducive to research. In 1947 The Rockefeller Foundation provided the sum of \$30,000 to permit the council to sponsor the projects which in its opinion most merit support. Selection of projects to be aided will ultimately be made by the general university authorities, and council action will be limited to submitting nominations and making recommendations. Sixteen projects, many of which will require from two to three years for completion, were approved for the year 1947-1948. Some of the subjects to be studied include the following: American economic thought, comparative economic organization, history of planning in the United States, the theory of public utility rate-making, succession taxes, Soviet law, Soviet economic theory and the business cycle, determinants of occupational choice.

FELLOWSHIPS AND GRANTS IN AID

In 1947 the Foundation appropriated the sum of \$125,000 to be allocated for fellowships in the social sciences during 1948. A similar sum was allocated during 1947 from funds appropriated during the previous year. Twenty-eight awards were made during 1947 and 29 fellows were active during some part of that year. Of

the latter group 1 was from Australia, 5 from Belgium, 3 from China, 1 from Czechoslovakia, 5 from Denmark, 1 from France, 1 from Great Britain, 3 from the Netherlands, 8 from Norway and 1 from Sweden. The fields represented include economics, sociology, political science, statistics, geography and social psychology.

There were 159 fellows appointed through funds appropriated by The Rockefeller Foundation to the Social Science Research Council who were on fellowship during 1947. Of this group 28 were appointed during the calendar year 1947 and the others were carried over from previous years. Due to war service, many of the fellows appointed under the program of demobilization awards were not able to take advantage of the fellowship opportunities offered them until this past year.

A fund of \$175,000 was appropriated by the Foundation for allocation by the officers as grants in aid during 1948. A similar fund was made available to the officers for allocation in 1947. As in previous years and particularly since the end of the war, many of these grants have been for the purpose of aiding scholars from other countries to renew their professional contacts outside their own national boundaries. Among those who were invited to the United States during 1947 by the Foundation were Dr. Franklin Ho of the China Institute of Economics, Professor Jorgen Pedersen of the University of Aarhus, Dr. Frantisek Roucek of Charles University, Prague, and Professor Arnold Toynbee of the Royal Institute of International Affairs. Foundation funds facilitated the trips of Professor Thorsten Sellin of the University of Pennsylvania to Sweden, Professors Friedrich Lutz and Oskar Morgenstern of the Princeton faculty to Germany and Austria and Professor Frank Knight of the University of Chicago to the London

School of Economics. Grants in aid to the Centre d'Études de Politique Étrangère, to the National Opinion Research Center and to the International Statistical Institute permitted these organizations to invite foreign delegates to their conferences. Other grants were made to universities and research organizations for studies which supplement the work which is now currently supported under the regular program of the division.

THE HUMANITIES

THE HUMANITIES STAFF
During 1947

Director
DAVID H. STEVENS

Associate Director
JOHN MARSHALL

Assistant Directors
CHARLES B. FAHS
EDWARD F. D'ARMS¹

¹ Appointment effective June 1, 1947

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THE HUMANITIES

THE Humanities in 1947 continued an emphasis on research and education in languages and foreign cultures, on North American studies and on the betterment of libraries and museums, drama, film and radio. Fellowships and grants in aid helped to build up a body of trained personnel, stimulated work in important fields that have received little attention, and encouraged individuals and institutions that are trying to regain ground lost during the war. Thirty larger appropriations, exclusive of the amounts appropriated for fellowships and grants in aid administered by the Humanities, amounted to \$1,183,600. Major appropriations went to institutions in the United States, England, France, Mexico and China. The total of the year for all purposes was \$1,508,600.

Fourteen of the 30 grants supported studies in languages and foreign cultures. Of these, three of the largest (\$100,000 each) were given to the American Council of Learned Societies for aid in procuring and reproducing materials on Slavic subjects; to the University of California for development of personnel in Slavic studies; and to the University of Washington for research on the Far East. The work at the University of Washington centers in the Far Eastern Institute, which is organizing personnel interested in the Far East from all departments in the university into a single research team to attack a planned program of studies on northeastern Asia. Other areas which received attention in the Foundation program besides the Slavic and Far Eastern were the Near East, eastern Europe and India,

all of which have been to a large extent disregarded in American universities.

Another grant of \$100,000 went to the Institute of International Education for maintenance and extension of its program for facilitating international exchange of students, teachers and specialist groups. Throughout the country there are new evidences that individuals and organizations increasingly believe the interchange of such persons to be one of the most effective ways of building for peace. Leadership, however, is needed to suggest the ways in which belief can be translated into a positive contribution.

Three universities in France received aid in developing their programs in the humanities. The grants are moving work forward from the point at which the occupation stopped it. Aid for development of the humanities went also to the National Tsing Hua University in China, a continuation of help comparable in potential national influence to that given in France. Another continuation on a larger scale was support to American studies. For several years the Foundation has had a part in enlarging the understanding of American life at varied levels, and through general channels as well as through institutions of learning. Such advance in understanding within the United States is essential to the recognition here and abroad of American values and as a contribution to recognition among nations of the values in all contemporary cultures.

STUDIES IN LANGUAGE AND FOREIGN CULTURES
AMERICAN COUNCIL OF LEARNED SOCIETIES
NEAR EASTERN STUDIES

During recent years Near Eastern studies in the United States have lagged behind studies of China, Japan and the Soviet Union. The decline in relative

emphasis on the ancient Near East has not been offset by adequate attention to what goes on in the minds of Near Easterners today. This is unfortunate because Near Eastern thought has unrivalled historical depth, great cultural breadth, and unquestioned contemporary importance.

The need for more effective encouragement of Near Eastern studies, with balanced attention to both contemporary developments and their older cultural and historical antecedents was recognized by the American Council of Learned Societies in 1947 in the replacement of its separate committees on Near Eastern studies and on Arabic and Islamic studies by a single Committee on Near Eastern Studies. This committee proposes to explore the contributions which studies of the Near East might make to our civilization, to survey and evaluate the research facilities and personnel already available, and to formulate programs to fill the more important gaps between opportunity and performance thereby revealed.

For the support of this planning and development committee over three years The Rockefeller Foundation appropriated \$12,000.

UNIVERSITY OF PENNSYLVANIA MODERN INDIAN LANGUAGES

Another area which has received far too little attention in American universities is India. Indic studies in the United States originated in the interest of linguists in Sanskrit. Various other departments, such as anthropology, history or geography, in scattered institutions have taken some interest in India. There has, however, been no center in the United States offering a broad and integrated program of Indic studies in various departments.

During the war, the University of Pennsylvania was the only institution in the country to undertake for the Army a program of regional courses on India and modern Indian languages. It was also selected during the summer of 1947 to undertake a summer Institute of Indic Studies for the American Council of Learned Societies. With this background the University of Pennsylvania recently decided to develop Indic studies as a major field of interest. It will continue its existing work on the Near and Far East, placing special emphasis on the relations of those areas to India and its problems. The program, under the direction of Professor Norman Brown, includes undergraduate and graduate instruction, research and publication. Professor Zellig Harris is in charge of a separate department of linguistics. In support of the new program in Indic studies, the University has received funds to make possible new appointments for work on India of professors in the departments of economics, sociology, anthropology and history, as well as a professor of Persian language and literature. To round out this program, The Rockefeller Foundation in 1947 provided \$60,000 for the support of work during five years in modern Indian languages including the appointment of two professors for Indo-Aryan and Dravidian languages respectively, a linguist and native speaker each year to assist in elementary intensive instruction, and funds for library and administration.

UNIVERSITY OF WASHINGTON FAR EASTERN STUDIES

About ten colleges and universities in this country maintain three or more faculty members full time on Far Eastern subjects. Almost all of these institutions

have received some measure of support from The Rockefeller Foundation during the last 15 years. The services of faculty and students in the war in the Pacific showed the value of such studies. The war experience also showed, however, the shortcomings of departmentalized and individual research. Research on foreign areas must increasingly be performed by teams of scholars representing a number of departments in the humanities and social sciences.

The University of Washington is developing such a group research program. Before 1947 the Foundation had given the university \$134,150 for Far Eastern studies. In 1947 it made an additional appropriation of \$100,000 for general expenses of research on the Far East in the university's Far Eastern Institute during a seven-year period.

The university is giving primary attention among foreign areas to northeastern Asia — China, Siberia and Japan — with North China as a focus. The program is directed by Dr. George E. Taylor, who during the war directed the Far Eastern program of the Office of War Information.

Dr. Taylor is attempting to organize scholars interested in the Far East from all departments in the university into a research team to attack over a period of years a single planned program of studies. This program has started with study of the beginnings of the Chinese revolution in the middle of the nineteenth century, the key period in the transition to modern times. As methods of team work and standards of scholarship are established, it is hoped to move rapidly into studies of China since 1911 under the Republic.

The aim is a study of Chinese society in transition. The joint research program, in which all members of

the institute will cooperate, was planned to provide over a period of years a coherent and accurate series of studies of national significance.

UNIVERSITY OF WASHINGTON SOURCE MATERIALS ON CHINESE HISTORY

An additional two-year appropriation of \$50,000 to the University of Washington in 1947 was made for production of English translations of source materials on Chinese history. The Foundation has supported this project since 1939, but until the present year through the American Council of the Institute of Pacific Relations. The project is an attempt to do two things: to make available in English a significant part of the Chinese dynastic histories, and to formulate anew the history of China, combining social, economic and cultural aspects with the usual political history.

In the past eight years Chinese and American specialists, under the direction of Dr. K. A. Wittfogel, have advanced systematically the preparation of annotated translations of certain parts of the voluminous 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).

The Liao volume, including a valuable appendix on Central Asian history, will be published soon under the joint auspices of the American Philosophical Society and the Macmillan Company. The much more extensive manuscripts on Ch'in and Han, the great Chinese dynasties contemporary with Rome, and Ch'ing, the last imperial dynasty before the Republic, are well advanced, but will require several years for completion.

During 1946 Dr. George E. Taylor of the University of Washington assisted the Institute of Pacific Relations

in the planning and administration of this project. With the consent of the institute, the University of Washington has now assumed sponsorship. With the exception of some of the work on the Ch'ing dynasty, which supplements admirably the program of cooperative research on modern China already in process in Seattle, the project will continue in the present New York location generously provided by Columbia University.

The Chinese history project will, it is hoped, contribute to new methods of writing social history, stimulate the study of China in the West, provide more reliable information for world history studies, and guide the work of Chinese historians away from old stereotypes and into more promising fields of social and cultural history.

YALE UNIVERSITY CHINESE STUDIES

The Rockefeller Foundation has contributed since 1935 to programs in Far Eastern studies at Yale. An appropriation of \$100,500 made in 1945 is enabling the university, over a period of seven years, to consolidate its language work with teaching in other departments. The progress of Far Eastern and Slavic studies at Yale has made this one of the major institutions in the country for undergraduate and graduate courses dealing with language and area problems.

The undergraduate major in Chinese studies covers the essential aspects of Chinese culture in a general manner. The student is prepared in language to the level of reading ability in classic and contemporary Chinese. He is introduced to the essential elements of Chinese thought in the fields of anthropology, the arts, history, political science, philosophy and religion. To make these courses constantly more effective the uni-

versity increased in 1946 its appropriations for library purchase.

Results at Yale have demonstrated the importance of giving all students constant use of sound recording and reproducing equipment. Foundation assistance was given in 1945 for improved equipment.

Advanced students in Chinese are in residence at Yale University under varied auspices and with a certain amount of support from government, business organizations, or mission boards. The enrollments in the graduate school range from 70 to 100 students. Among this student body are several of unusual capacity who have had valuable experience during the war. These persons should be retained during study periods ranging up to three years. The estimate of possible aid to these selected students from all sources was far short of the amount needed, and without assistance many if not all of the students would have been compelled to discontinue their work. The Rockefeller Foundation, therefore, made an additional grant to Yale of \$25,000 to be used during the next three years to maintain the group.

UNIVERSITY OF CALIFORNIA FAR EASTERN LANGUAGE TEACHING

During the past half century the University of California has constantly sought to build up its teaching and research resources in the languages, literature, histories and cultures of the peoples of Asia.

A particularly strong following for studies in the Pacific area developed at the university during the war. Its Extension Division conducts intensive work in the languages of this region with offerings on the cultures of Japan, China, Korea, Russia, Siam and the South Pacific. The entire program is devised to stimulate interest in modern problems of the Pacific, and to pre-

pare personnel for teaching and research or for the direct application of the training in careers. Mr. Richard J. Miller, the director, and a staff of 13 full-time teachers, all mature scholars with wartime experience, are aided by lecturers and investigators in language, anthropology, social and cultural history from the various departments of the college and graduate school.

The outline for teaching Siamese gives an idea of the process of introduction to a new culture. A student will have, during a 12-week course, 14 hours weekly in conversation, dictation and reading; two hours of area lectures; two hours or more in the sound laboratory and heavy assignments in background reading. After giving all his time to this subject for 12 weeks, he is then ready to take a second subject, while carrying forward his intensive work in Siamese during the remainder of the year, and to begin specialization in one or more departments.

In addition to holding together a staff of specialists in unusual languages, the Foundation's three-year appropriation of \$30,000 will be used to maintain research on teaching methods and for production of new text material.

UNIVERSITY OF CALIFORNIA SLAVIC STUDIES

Work in Russian language and literature was begun at the University of California in 1901 under George R. Noyes. Since then, work in other Slavic languages and literatures has been added with new staff members. More limited concern with Slavic studies in other departments, such as political science and economics, has laid a groundwork for a comprehensive plan of further development. The current programs show 37 undergraduate courses and eight graduate courses in Russian

and related languages and literatures, eight courses on the history of Russia and eastern Asia, one on the geography of the Soviet Union, and basic courses on eastern Asia in other departments. These are organized to form group and regional majors under faculty committees.

In the autumn of 1947 the total number of students enrolled in Slavic languages was 626, and in Russian history 268, a large number being candidates for higher degrees. The University of California is planning further interdepartmental collaboration and expansion in the field of Russian studies. It is evident, however, that there are not enough qualified senior scholars available in the United States to meet the need for appointments in various departments, such as law, economics, ethnology and art, without competition for personnel which would be detrimental to established programs at other institutions. On the other hand, the situation is excellent for the inservice training of some of the very promising young Ph.D.'s who are now being graduated at several institutions. If these young men are to be ready as soon as possible to accept greater responsibilities, they must have the time necessary for development of courses and new subjects, and the unusual opportunities for research at other institutions or abroad.

With this aim in mind, the Foundation has appropriated \$100,000 to the University of California toward development of personnel for Slavic studies.

COLUMBIA UNIVERSITY SLAVIC STUDIES

Slavic studies are also receiving support at Columbia University. In 1945 The Rockefeller Foundation, under its program in the social sciences, gave Columbia University a sum for the establishment and support for five years of a Russian Institute to advance knowledge

in the Russian field and to train students. The Russian Institute relies on assistance from four other administrative units in the university, namely, the faculties of political science and philosophy and the schools of business and international affairs. For the work during the next five years of the Department of Slavic Languages in the Faculty of Philosophy, the Foundation has now appropriated \$25,000. This fund will enable the department, under the direction of Professor Ernest J. Simmons, to intensify its work in developing new teaching materials and new resources of research in the history, languages and literatures of all Slavic countries.

The Department of Slavic Languages has been enlarged and reorganized by additions of staff and by consolidation of work previously given in its Extension Division. Four main divisions carry programs in Russian, Polish, Czech and Slovak, Balkan Slavic and related languages. The present staff of 24 includes six professors to direct major lines of work.

The immediate purpose is to produce a series of advanced Russian readers for the intensive courses in language and area studies, a Russian grammar and an anthology of Russian verse. This plan is to be paralleled by work in Polish. The research program includes collection of Slavic materials from first- and second-generation Slavic communities in New York and vicinity, and studies of American-Slavic cultural relation, with emphasis on poetic, musical and linguistic aspects and American influences in these fields.

AMERICAN COUNCIL OF LEARNED SOCIETIES SLAVIC TRANSLATIONS

The need for making basic works about Russia by *Russians* accessible in English translation, became acute after the First World War and the Revolution of 1917,

and it has increased with the defeat of Germany in the Second World War and the influence of the Soviet Union among the great powers. In bridging the gap between cultures, neither journalism nor the best evaluations of foreign writers in the more permanent form of books, can take the place of an adequate and growing library of standard works by native scholars.

In 1943 The Rockefeller Foundation provided the American Council of Learned Societies with the sum of \$50,000 for translating from Slavic languages materials essential for the development of Slavic studies in the United States. It has now followed up this aid with an additional appropriation of \$25,000.

No feasible translation program could include more than a small fraction of the vast accumulated store and the enormous current production of Russian material. The primary task has been the discriminating selection of books, in order to achieve a rich and balanced program. Books have been chosen on the basis of their worth for the task in hand, regardless of whether they were products of the Imperial or of the Soviet regime.

The Foundation's first grant has been used or assigned for translating 26 books containing about 13,000 pages, or about 5,000,000 words. Nearly all of these titles are in final form for publication. Of four titles in history, one significant for contemporary use is Romanov's *Russia in Manchuria 1892-1906*, published in 1928; in geography, two works — *The Natural Regions of the U.S.S.R.* and *Economic Geography of the U.S.S.R.*; in law, Andrey Vyshinsky's *Soviet Public (State) Law*; in art, Grabar's *History of Russian Art*; in drama, Varneke's *History of the Russian Theatre*, now in its third edition.

The Foundation's supplementary grant is based on estimates of cost and need for English versions of 25

other titles from the current list. Dr. Chapin Huntington of Washington gives full time to the task of securing capable translators and editing the submitted texts for publication. Publication has now been arranged with the Macmillan Company of New York, with four titles listed for appearance during the spring of 1948.

AMERICAN COUNCIL OF LEARNED SOCIETIES SLAVIC MATERIALS

Besides needing translations of important Russian works, universities, institutes and news-gathering agencies in this country and abroad are urgently in need of a better supply of publications originating in the Soviet Union. Most of the standard older works which should be in the libraries of those scientifically interested in the Russian field are out of print and unobtainable except at rarity prices. Everyone interested in the study of present-day Russia is handicapped by lack of materials. Current books, periodicals, newspapers and magazines are almost impossible to obtain except in single copies.

Information on what the Russian presses are producing is hard to secure. Though there are current Russian bibliographical publications, no American library has a complete file of them, especially of recent numbers. Procuring and distributing Russian works in sufficient quantities to meet the need all over the country is also difficult. The American Council of Learned Societies has therefore established a small committee including representation of the interests of the Social Science Research Council, the American Library Association, the Special Libraries Association and other agencies, for the purpose of developing and carrying forward an enterprise to improve American collections for the study of Russia. This committee will, first of all, distribute to

all interested institutions information as complete as can be obtained respecting current publication in the Soviet Union. It will then take all possible steps to improve the procurement of publications from Russia in whatever numbers of copies may be available, and when necessary arrange for the reproduction in the United States of such Russian works as may be immediately in demand.

An appropriation of \$100,000 from The Rockefeller Foundation to the American Council of Learned Societies in 1947 is to aid in procuring and reproducing Slavic materials during a three-year period.

INDIANA UNIVERSITY
EAST EUROPEAN STUDIES

Finnish and Hungarian, spoken by some 11 million people, are the two principal representatives of a family of languages which includes Estonian, Karelian, the so-called Permian languages (spoken by about a million persons, principally in the northeastern part of Russia) and the Finno-Volga languages with over a million and a half speakers along the Volga. Because of their complex syntax and the lack of relation between their structure and vocabulary and those of other better-known languages, these languages are the most difficult in Europe. Knowledge of them has an essential place in the study of eastern Europe.

In sharp contrast to the vigorous activity in Finno-Ugric studies in the Old World, the United States has paid scant attention to the languages, or even the cultures, of these peoples. As a result it has been impossible to obtain training or to carry on extended research in the Finno-Ugric field except by going to Europe.

Indiana University has good facilities for studies of

eastern Europe in the area from the Baltic states south through Poland, Czechoslovakia and the Balkans, to Turkey. With the aid of a five-year appropriation from The Rockefeller Foundation amounting to \$27,500, the university hopes to develop its interests in this field into a coordinated program of studies in the languages and cultures of eastern Europe. As an initial step, the university is placing the work in Finnish and Hungarian on a sound basis by inviting as visiting lecturers during the next five years leading scholars in these languages and cultures from various European academic centers, and by aiding a small number of capable graduate students.

The program will enable the student to obtain a knowledge of one or more of the Indo-European languages (Norwegian, Swedish or Russian, for example) as well as specific training in Finno-Ugric and Altaic, and also a knowledge of the areas in which all these languages are spoken. In addition to a general orientation, students may also concentrate on the culture, folklore, history, geography and government of the peoples within the scope of the program.

COLEGIO DE MÉXICO LINGUISTIC STUDIES

In 1947 The Rockefeller Foundation followed up a previous grant to the Colegio de México for its Center for Historical Studies, with a two-year appropriation of \$12,500 toward its program in linguistic studies.

The colegio has advanced its work in history and literature to the point of training its own investigators and teachers. Exchanges of men with this and other countries and appointment of persons on fellowship have brought the work in Mexico City to general influence

internationally. A strong publishing outlet makes for broad distribution of the studies of staff and visiting lecturers.

The conditions of work in universities of Argentina has given the Colegio de México an opportunity to add to its program a unit for research and training in Spanish-American linguistics and in the general history of language. Foundation support helped to bring Dr. Raimundo Lida, formerly on the staff of Professor Amado Alonso, who was head of the Institute of Linguistics of the University of Buenos Aires, to the faculty of the Colegio de México, and will also assist the publication there of a new journal for subscribers to the *Revista de Filología Hispánica*, issued until recently in Buenos Aires under Dr. Lida's editorship.

Dr. Lida's formal training under Dr. Alonso in Buenos Aires was supplemented by a year in the United States on a Guggenheim fellowship. His publications deal with philosophy, the history of language and theories of linguistic change. Dr. Lida has translated several volumes from English and Spanish in the areas of his special interests. In his work at the Colegio de México he is continuing as editor and as lecturer, and will develop the framework of graduate studies leading to the production of a historical dictionary of Latin-American Spanish. In this work Professor Alonso, Professor William Berrien, and other North American scholars will participate.

AMERICAN STUDIES

NEWBERRY LIBRARY

STUDIES IN MIDWESTERN CULTURE

The Newberry Library, the chief reference and research library in the humanities for the metropolitan

area of Chicago and the surrounding region, inaugurated in 1944 a fellowship program to stimulate the writing of studies in the history of the Middle West. The library is primarily interested through this program in producing books which, falling within the general classification of the humanities, explain, describe or interpret those aspects of midwest culture which are both its peculiarity and its strength. The essential points are that the book be soundly conceived, embody as much intelligent research as is necessary for the purpose, and be readable.

The governing intention is to make grants to those persons whose plans and abilities give promise of works of distinction that will be widely read. Assistance is given to three kinds of fellows: scholars working on mid-western subjects in history and literature; those skilled in reaching a wide audience, such as journalists, radio writers, biographers; and creative writers. Each fellowship carries an honorarium of at least \$2,000, for one year. Under a previous Foundation grant, the library made 12 awards.

The Foundation is continuing its aid to the Newberry Library in support of these studies with a five-year appropriation of \$50,000.

ABRAHAM LINCOLN ASSOCIATION

The Abraham Lincoln Association in Springfield, Illinois, was organized in 1909 and reorganized in 1924 as a non-profit corporation to collect and disseminate information on all phases of the life of Abraham Lincoln. The association has brought out collected papers and 13 volumes by Lincoln scholars, and since 1942 has published a quarterly which is distributed to about a thousand members. Executive secretaries of the associ-

ation have prepared and published four volumes constituting a day-by-day record of Lincoln's acts from 1809 to 1861.

In 1947 The Rockefeller Foundation gave the association a grant of \$30,000 for use over a period of five years in preparing an accurate and annotated edition of the complete writings of Abraham Lincoln. The officers and directors of the association have appointed Professor Roy P. Balser, editor of Lincoln's writings, as executive secretary in charge of the project.

Familiar resources of material on Lincoln, such as the *Official Records of the Union and Confederate Armies*, naval records, and smaller bodies of material held by the Government or by private individuals, will be thoroughly searched. The most important new source will be the collection of some 15,000 documents, deposited with the Library of Congress in 1925 by Robert Todd Lincoln, which became available to scholars on July 26, 1947.

DRAMA AND RADIO

STEVENS INSTITUTE OF TECHNOLOGY SOUND EFFECTS IN THE THEATER

In 1939 The Rockefeller Foundation made a grant to Stevens Institute of Technology for research in the control of sound and light for dramatic purposes. One of the objectives of the project was to discover, develop and make available to the theater the principles and equipment by which the art of the theater might be enhanced through the control of sound. The work was under the direction of Professor Harold Burris-Meyer, director of the College Theatre at Stevens Institute, who has combined his training in the teaching of English and drama with expert knowledge of electronics and acoustics.

Under this grant Professor Burris-Meyer developed electronic equipment of great scope and sensitivity, and techniques which make possible in the theater a control of the intensity of sound, the sound spectrum, reverberation, apparent direction of the sound, and apparent distance from which the sound comes. With these techniques it is possible to facilitate and enrich the use of voice and music, and to add new sound effects. The result is a greatly increased range of esthetic and emotional effects available to the dramatic artist.

Demonstrations of the Stevens Institute equipment and techniques have created a demand for their use in both commercial and non-commercial productions. The complete system is, however, too expensive for general adoption under current methods of theater financing. No cheaper, limited-purpose unit and no way of assembling a complete system from such units have been developed. For this final step in making sound control available the Foundation appropriated in 1947 the sum of \$9,600.

COLUMBIA UNIVERSITY
GERMAN RADIO PERSONNEL.

In 1947 the Humanities division granted to Columbia University the sum of \$25,000 to be used for the study of broadcasting outside Germany by personnel from stations in Germany. The study will deal with broadcasting techniques as well as the function of radio in the community. Stress will be laid on methods of program organization to widen the range of public interest and discussion. Training will be given in American communities and regions of varied kinds, direction of plans being from this central source.

Four of the six persons chosen for training will come from the five radio stations in the American Zone, one

from the British Zone and one from the French. The reason for such distribution is that each station in AMZON has its own program, whereas both the British and French use a single hookup from one station. Personnel for the project will be chosen by consultation among the Germans of each station, subject to the approval of the Information Control Division of the Army, or the comparable British and French organization.

The purpose of the project is entirely educational. There is no desire to convince the participants that the American radio represents the only, or necessarily the best, way of conducting a radio station. Part of this experience will be to observe the operational techniques of British and Canadian broadcasting. From the beginning, the Information Control Division has picked its staffs most carefully and has tried to train them to a feeling of responsibility to the public, with the basic purpose that they will demonstrate more and more that the radio must not become the spokesman for any government or social or economic group to the exclusion of other points of view.

LIBRARIES AND MUSEUMS

AMERICAN LIBRARY ASSOCIATION INTERNATIONAL RELATIONS BOARD

The International Relations Board of the American Library Association, which became active with Foundation assistance in 1943, has increased year by year its services to foreign countries and to our own Government. Its work includes book and periodical purchase and distribution; supplying information to foreign institutions; promoting translations of library literature; ad-

ministering and aiding library schools in Latin America; and bringing foreign librarians to the United States for short study periods.

In addition to its regular program, during the war the board was frequently called upon by various agencies of the United States Government and international organizations for help in meeting international library needs. It has disbursed approximately \$900,000 for international library projects for various branches of the Government. A further service has involved caring for the requirements of the book trade and of American libraries in matters of distribution and exchange of materials. The board cooperated in the creation of the American Book Center, now a medium for distribution of thousands of titles to foreign countries. It has also made effective many plans of the Department of State through its cooperation in selecting personnel for overseas libraries.

In performing these services the International Relations Board has carried work that normally is in the province of the Library of Congress, the Department of State, and the Office of Education in the Department of the Interior. Other functions will become the responsibility of UNESCO. Governmental and international bodies are now in the process of taking over the services developed in large part by the International Relations Board. The sum of \$25,000 from The Rockefeller Foundation will assist the board during 1948.

WOODROW WILSON FOUNDATION
LEAGUE OF NATIONS DOCUMENTS

Thousands of hitherto restricted, internal working papers of the League of Nations are now available to

research scholars for the first time through the extensive cataloguing work of the Woodrow Wilson Foundation, New York. The League of Nations documents, particularly the non-sale documents, provide unique source material for the study of the 1920-1940 period, and of the early experiments in international cooperation in a systematic fashion and on a large scale. Continuing analysis and classification of documentation of the League has brought the final cataloguing to over half the total collection of materials. Work of the past year has revealed the existence of occasional papers in private hands. Such additions to the file are to give this collection a more complete coverage than can be had by research workers in any other location.

The Rockefeller Foundation supported this work in 1946 and made a further appropriation in 1947 of \$31,500. The staff has been increased and volunteer aid has been enlisted in the Library of Congress, the New York Public Library and several centers in Europe. It is estimated that the seven remaining sections of material to be classified and catalogued can be completed under present working plans by the end of 1948. Four of the completed sections deal with intellectual cooperation, of value today in organizing UNESCO; refugees; mandates; and administrative commissions (Saar and Danzig) and minorities. The Library of Congress is printing the cards without cost to the project and supplying buyers in any part of the world with duplicates.

A by-product of the project is the demonstration to other libraries of costs and methods of dealing with such documents. Furthermore, the work has shown the necessity of a division of responsibility among the

libraries of New York concerned with materials of this type.

POLISH LIBRARY, PARIS

CATALOGUE

The Rockefeller Foundation provided \$14,000 in 1947 to the Polish Library of Paris toward expenses of producing a catalogue of its printed holdings.

The Polish Library was created in 1838 by refugee Polish patriots who came to France after the ill-fated revolution of 1831. For more than a century the library, under French protection, remained one of the few Polish institutions to have an independent life. During that period, there were collected in it books and archival documents brought from Poland by refugees.

The Polish Library of Paris was one of two Parisian libraries pillaged by the Germans. Its collections, apart from what had been hidden in places of safety, were taken off to Germany. On the occupation of Germany, they were discovered and sent by error to Warsaw. During the summer of 1947, they were returned to the library in Paris, with the result that the prewar collections of the library have been reconstituted almost in their entirety. These collections comprise some 80,000 volumes, approximately 9,000 prints, 1,000 manuscripts inclusive from the sixteenth to the nineteenth century, and a collection of some 2,500 maps. All in all, the library represents the single most important collection on Poland and its neighboring countries now accessible in western Europe.

Since the prewar catalogue of the library was hardly satisfactory for making known its holdings to students, Mr. François de Pulaski, the director, now has undertaken preparation of a new catalogue with cards con-

forming to the cataloguing rules of the Bibliothèque Nationale of France. This catalogue will be microfilmed, and copies of the film or catalogue cards reproduced from it will be available for deposit elsewhere.

BRITISH MUSEUM MICROFILM LABORATORY

Beginning in 1905 the British Museum stored its great collection of newspapers in two buildings at Hendon. In 1940 the older building and some of its contents were destroyed by bombing. Since then the 70,000 volumes of newspapers saved out of the original 100,000 volumes have been stored unclassified in the other building, and all current issues have been accumulated in the same space. As a result, this unequaled source for studies of British history is now unavailable for use and conditions are becoming steadily worse.

To preserve permanently the deteriorating stock and to avoid continuous expansion of storage space, the trustees of the museum plan to put all British newspapers on microfilm. The Ministry of Works will erect a new building to cost approximately \$500,000. Museum trustees also propose to increase the annual budget for continuous operations of the laboratory.

An appropriation of \$56,000 from The Rockefeller Foundation will help to purchase needed American equipment and to bring the equipment to location for use as promptly as possible.

GENERAL DEVELOPMENT

AMERICAN COUNCIL OF LEARNED SOCIETIES PLANNING AND DEVELOPMENT

Over a number of years The Rockefeller Foundation has contributed \$142,000 for planning and development

in the humanities under committees of the American Council of Learned Societies.

The council's program falls into two categories: (1) established programs, as for special projects like the *Linguistic Atlas*, and sustained programs for fellowships, grants, or assistance to publication; and (2) those activities which seek to find desirable new directions in scholarship and to keep the council responsive to changes in need, not only within scholarship but within broader intellectual and social spheres as well. It is to the latter activities that the term "planning and development" is applied.

Former appropriations of the Foundation to the council for planning and development activities have gone into fact-finding, exploration of new proposals, and the establishment of programs to put these proposals into effect. There is a general feeling in the American Council of Learned Societies that the time has come to place less emphasis on the tools of scholarship, and more on the relation of the humanities to contemporary society. It now plans to explore, for example, the relation of the humanities to contemporary American life at the three levels of secondary, college and graduate school work, and in relation to adult education. With regard to educational interests and all other new policies, it is anxious to secure as complete an exchange of ideas as is possible — both within and without the council. Towards this end it will provide more extensive travel for staff members and occasionally will call together key men for informal conferences.

The \$65,000 provided by The Rockefeller Foundation in 1947 continues its support of this new line of inquiry on a national scale. It also will maintain certain exploratory committees, will provide for special conferences,

will assist the planning activities of the constituent societies, and will sustain investigations and reports on an international basis.

KENYON COLLEGE
SCHOOL OF ENGLISH STUDIES

The need for a new definition of English studies is evident in the traditions of scholarship in this field, especially within the United States. Twenty years ago the routine to attain the highest graduate degree was virtually fixed in method. Students were given exhaustive courses in language to enable them to trace words through changes in form. They learned how a past generation lived and thought, how an individual author developed, but gave little attention to the interpretation of values for contemporary readers. In its most extreme forms, this training was unimaginative and produced scholars of narrow, highly specialized abilities.

During the past 20 years in graduate schools of English, the study of literature has increasingly emphasized ideas and ideals, and the esthetic and imaginative qualities of writers. Biographical study has been minimized and philological work has been made more realistic. Now, it is essential that universities and colleges give greater attention to original work in the usual literary forms and in criticism as elements in training of personnel.

As a step in this direction, Professor John Crowe Ransom of Kenyon College, Professor Lionel Trilling of Columbia University and Professor F. O. Matthiessen of Harvard University have developed a plan for a School of English Studies to be held at Kenyon College. The objective is to give teachers and advanced graduate students practical experience in modern methods of

literary criticism under a staff of experienced instructors who have published distinguished critical writings.

The staff will present critical analyses of individual authors or schools of literature, to demonstrate methods of treatment in teaching and in the writing of criticism. One course in writing will be open to 20 persons capable of advanced writing, whether critical or creative, and all courses will be at the graduate level. By announcing the plan for a three-year period, the committee of selection will make possible to applicants the choice of time suited to their leaves of absence from duty and to the school a careful selection of members in successive years.

A grant of \$40,000 from The Rockefeller Foundation is in support of three sessions of this school.

KENYON COLLEGE THE KENYON REVIEW

In an effort to provide outlets of expression to new writers and critics and to raise the level of current taste and literary judgment, the Foundation has in the past made several small grants toward editorial expenses of journals that have small circulation but perform a valuable service in the humanities. At the present time the publication of work for special classes of readers is important but increasingly difficult. In this situation the service of the critical, literary magazine is more valuable than ever.

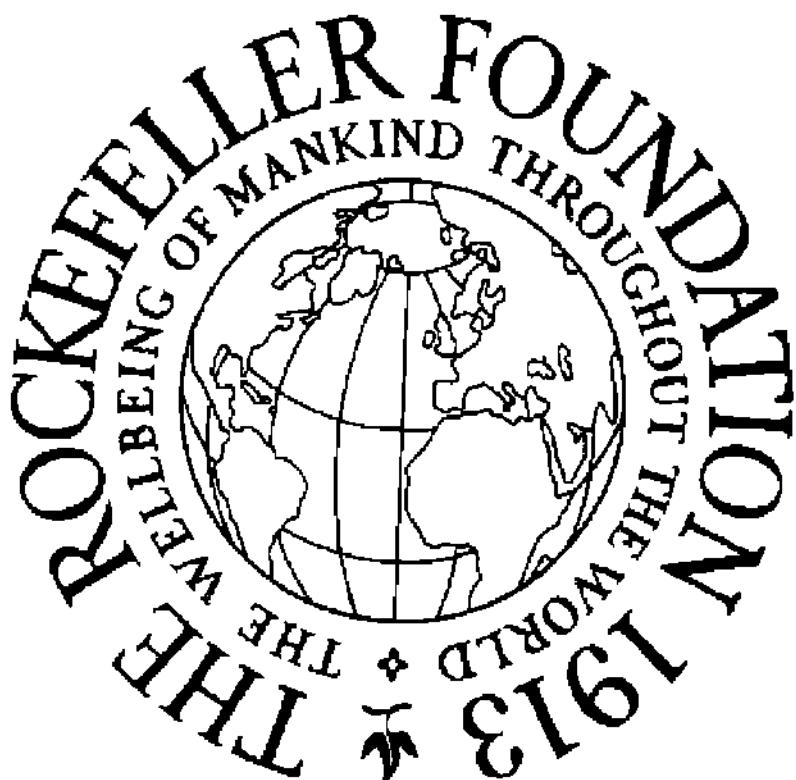
The Kenyon Review, a quarterly established at Kenyon College in 1939, is recognized as one of a few American literary magazines that are of direct use to literature in the United States. The *Review* is edited by John Crowe Ransom, with another member of the faculty, Philip Blair Rice, as his associate editor, and

four leading critics, Eric Bentley, Cleanth Brooks, Lionel Trilling and Robert Penn Warren, as advisers. Four issues annually, to some 2,400 subscribers, contain fiction, critical articles, poetry, book reviews and occasional chronicles of recent developments in the humanities.

Whereas magazines of large circulation accept for publication literary work certain to have wide appeal, such journals as *The Kenyon Review* accept work of writers who later prove to have great literary importance. Remaining small in terms of circulation, such journals have little income from sales and advertising. They survive through service from editors on minimal salaries or none at all, and contributions by writers who allow the publication of their work at very nominal rates. An increase in rates, made possible by a five-year grant of \$22,500 from the Foundation, will enable writers dependent on earnings to publish in the *Review*. It also will enable the editors to commission articles on important subjects and to improve still further their book reviews. The quarterly should then become even more valuable for students of contemporary literature in and outside the universities.

AMERICAN COUNCIL OF LEARNED SOCIETIES STUDY OF SCHOLARLY PUBLISHING

Increasingly the university presses in this country are assuming responsibility for scholarly publishing, especially for books which, important in themselves, cannot anticipate a sufficient sale to interest commercial publishers. With rising printing costs, university presses will necessarily assume larger responsibility for the important book which at the outset anticipates sales between 1,500 and 5,000 copies. Any board of university



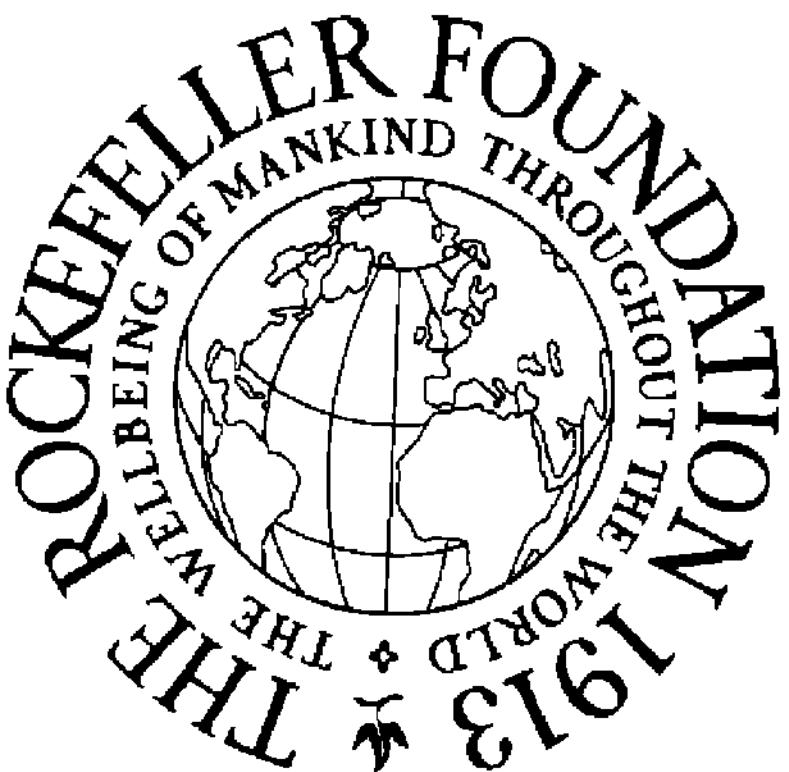
Photograph Excised Here

Consulting Chinese texts, University of Washington,



Photograph Excised Here

American Library Association exhibit of books published by
university presses.



Photograph Excised Here

Eastern European studies at Indiana University. Sound recording
and reproduction.



Photograph Excised Here

Books and journals for a European library.

trustees would agree that the production of print for the uses of scholars, scientists and many special classes of readers is a university obligation. Not many have determined the form and degree of this obligation under changing conditions or perhaps under any fixed formula of normal operations.

If the universities are to meet more effectively their responsibility to produce and disseminate useful knowledge, they must have a reliable, detailed body of data on the whole subject of present scholarly publication.

In an attempt to provide such data, the Association of American University Presses, under the sponsorship of the American Council of Learned Societies, is undertaking a study of scholarly publishing in the United States, centering around analysis of the accounting practices of the presses. The association has as regular members the important university presses of the United States, and as associate members the American branches of the Oxford and Cambridge Presses, and the Huntington Library. It engages in a number of cooperative activities, such as maintaining the joint mailing list established at the University of Chicago with support of The Rockefeller Foundation, arranging joint exhibits of books, and publishing a joint catalogue for foreign purchasers. The Foundation in 1947 gave \$30,000 toward expenses of this study.

INSTITUTE OF INTERNATIONAL EDUCATION EXCHANGES

The war has acted as a powerful stimulus to the interchange of students, teachers and professors between the United States and other countries. This country has become the new mecca for foreign students in all fields. Between the two world wars the largest number of

foreign students who came to the United States was 9,773 in 1929-1930. In the academic year 1946-1947 there were 15,000. Nor is the traffic one way. Greater numbers of American students and teachers are going to foreign countries than ever before.

All of these people are looking for information and advice on courses, scholarships, teaching and lecturing opportunities. It is the business of the Institute of International Education to gather and compile such information. The institute's function is to arrange for Americans and non-Americans to study under an exchange of persons program in the United States and abroad. Arrangements include evaluation of academic records, placement in institutions, operation jointly with the Department of State of orientation centers, travel service, sending of periodic compensation to holders of fellowships, and the counseling and guidance of foreign students in the United States through personal visits of the institute's staff members.

The institute is handling a greater volume of work than ever before. It has been chosen as an administrative agency for the international exchange of persons by the Department of State and by various foreign governments. The institute estimates that it has assisted approximately 5,000 students now in the United States and has been completely in charge of almost 1,000 institute-sponsored students.

A great increase is expected in the numbers of professors, students and specialist groups, all desirable exchange personnel, for whom the institute has been able to do very little. The number of students will increase further under the Fulbright Bill. Exchange of such persons with former enemy countries will soon, it is hoped, be revived. The institute has generously as-

sisted, without compensation, efforts to bring promising personnel from the occupied areas to the United States for study. A larger staff, more space, and extended publication facilities are necessary if these tasks are to be successfully performed until federal and other sources are found to supply full administrative support.

A two-year appropriation of \$100,000 from The Rockefeller Foundation will help towards this end.

UNIVERSITIES OF LYON, BORDEAUX, TOULOUSE HUMANITIES DEVELOPMENT

In 1946 The Rockefeller Foundation made an appropriation to the University of Oslo to help develop its work in the humanities. Similar grants have now been given three universities in France. In 1947 the Foundation provided \$25,000 to the University of Lyon; \$25,000 to the University of Bordeaux; and \$18,000 to the University of Toulouse.

In teaching and research in the humanities these universities are second in rank only to the University of Paris. Indeed, their ranking second is in considerable measure caused by the practice of filling chairs in Paris by appointments from their faculties. The reorganization of university education now in progress in France aims to avoid this practice, and everything possible is to be done to strengthen the universities outside Paris, as a means of rectifying the over-centralization of advanced study in that city. The opportunity for the early development of their work in the humanities is further promising for the reason that, unlike Paris, their enrollments remain approximately what they were before the war. As a result, members of their faculties have more time to devote to students and to their own research.

Development in the work of these universities in the

humanities is handicapped by needs for which the Ministry of Education cannot as yet provide. The funds supplied to Lyon, Bordeaux and Toulouse will help meet these needs. They will be used for foreign travel for members of their faculties of letters; for the purchase of specifically needed materials in print; and for a limited number of assistantships in the humanities. It is expected that French sources will shortly make further provision for assistantships and that aid toward publication will also be secured from sources in France.

NATIONAL TSING HUA UNIVERSITY HUMANITIES PROGRAM

Tsing Hua University was founded and supported for many years with funds from the American portion of the Boxer Indemnity remitted by the United States Government for promotion of Chinese education. Because of this origin, Tsing Hua developed an unusually successful combination of Chinese and American educational methods and acquired a reputation for outstanding instruction in English language and literature. The Department of English Literature counts among its graduates a high proportion of modern Chinese leaders in literature and drama -- men who applied the appreciation of humanities acquired through English to the development of Chinese vernacular literature.

The Rockefeller Foundation has appropriated \$20,000 to Tsing Hua University, the sum to be paid in annual installments for five years, for support of the humanities program, principally under Mr. Robert Winter.

AMERICAN PHILOSOPHICAL ASSOCIATION VISITING PROFESSORS

While Continental European philosophy and philosophers are well known throughout Latin America, in

part owing to actual visits from European philosophers, American philosophy and philosophers have had comparatively little interchange of ideas and individuals. There is at present a desire and need on the part of Latin American philosophers to find out about North American philosophy and on the part of the American Philosophical Association to become better acquainted with Latin American philosophical outlook. Taking advantage of this opportunity for cultural interchange, the American Philosophical Association invited Latin American universities and other institutions to send representatives to an Inter-American Philosophical Congress held in the United States in December 1947.

In addition to the representatives who attended at the expense of their institutions, the association wished to assure the attendance at the congress of certain leading philosophers from Central and South America. The prominence of these men in the field is such that they are wanted as visiting professors by different American universities. Thus, their attendance at the congress was assured if the universities in question were in a position to invite them for service as visiting professors over a period which included the dates of the congress. The Rockefeller Foundation, therefore, with an appropriation of \$30,000, enabled the association to make available to the universities the difference between what the universities could allot for such visiting professorships and the total expense of the visitors.

GRANTS IN AID AND FELLOWSHIPS

In addition to these larger appropriations, the Humanities appropriated during 1947 the sum of \$175,000 for grants in aid, given to institutions, mostly to encourage development of new fields, and \$100,000 for the

advanced training of scholars provided by fellowships. Like the larger appropriations, many of these smaller grants supported research in languages and foreign cultures. Others helped to raise the level of work in American studies and improve drama, radio programs, libraries and museums. More small grants than large were given for general development of the humanities, including support of work in literature, philosophy and history.

In all, 93 fellowships administered directly in 1947 by the Humanities were active during the year. This number included 47 new grants and 46 carried over from previous years. Fellows came from 16 countries, most of them studying in the United States, others going to England, Ireland, France, Belgium, Russia, Canada, Australia and New Zealand, China, Japan, India and countries in South America. Of the 93 fellows, 49 received the special postwar, predoctoral fellowships, described in last year's report, for training, interrupted by the war, of much-needed younger personnel in the humanities.

Grants in aid given in 1947 numbered 65, plus 6 renewals. They ranged in amount from \$100 to \$7,500, with a majority of the grants over \$2,000. In the classification below, grants in aid listed as "Other Grants" covered a wide variety of subjects, including art and music. One grant aided the purchase of working collections of books on American law for use in Japan, where the adoption of new legal codes has created an urgent need for basic American reference works on constitutional and criminal law and on judicial procedure. Another grant went to the American Council on Education for an emergency investigation of methods of textbook revision. There is a need to analyze developments in

textbook revision within this country with a view to establishing advisory services to the German workers on new materials for German schools. The American Council on Education also received a grant toward expenses of selecting, purchasing and forwarding to institutions in Japan and Korea various publications of importance in helping those institutions to consider the role of higher education in democratic society and the implications of this role for curriculum and teaching. Aid was given for purchasing and shipping to Germany material to be used by Dr. Erich J. Hylla in completing his book on American education, *Die Schule der Demokratie*.

Fellowships and grants in aid were given in the following general fields:

	<i>Grants in Aid</i>	<i>Fellowships</i>
Language and Foreign Cultures	19	26
American Studies	3	5
Drama and Radio	7	14
Libraries and Museums	5	4
Literature	1	18
Philosophy	4	10
History	10	12
Other Grants	16	4

OTHER APPROPRIATIONS

OTHER APPROPRIATIONS

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OTHER APPROPRIATIONS

AMERICAN LIBRARY ASSOCIATION PURCHASE OF JOURNALS

The hunger for books is second only to the hunger for food in many parts of the world. Collections in many libraries in war areas were seriously damaged or completely destroyed. Almost all of the libraries failed to receive significant numbers of scholarly and scientific journals during the war period. In 1941 The Rockefeller Foundation, anticipating this situation, requested the American Library Association to administer a project involving the acquisition of wartime issues of outstanding journals in all important subject fields. From printed lists and recommendations of specialists, some 400 journals were selected for possible inclusion in the program. A total of 235 publishers, as well as a number of library and professional groups participated in the program. At the conclusion of the war the association's Committee on Aid to Libraries in War Areas was ready to begin distribution operations. Letters were sent to central agencies in 25 countries asking for information on the need for American journals in their libraries, and the first collections were shipped to France during 1945. By June 1947, 6,037 titles and 9,320 sets of journals had been sent to 33 countries.

Since 1941 the Foundation has made five appropriations totaling \$389,000 to the American Library Association for this project. In 1947 a grant of \$9,000 was made to take care of final details of the project, chiefly for the photoduplication of out-of-print journal issues.

GENERAL EDUCATION BOARD

In continuation of policy laid down in 1946 The Rockefeller Foundation in 1947 allocated \$1,500,000 in support of the work of the General Education Board. An appropriation of \$7,500,000 for five years was made in 1946, with the provision that the condition would be reviewed in each succeeding year so that the Board would have continually at its disposal funds covering a future period of five years. Previously the General Education Board had almost exhausted its own financial resources. Support from The Rockefeller Foundation will enable it to continue outstanding contributions to educational work in the United States. A complete account of the activities of the General Education Board in 1947 will be published in a separate report.

EUROPEAN REHABILITATION PROGRAM

Since V-J Day The Rockefeller Foundation has appropriated more than \$5,000,000 for specific projects in Europe. In 1947 a general fund of \$200,000 was set aside for new projects in European rehabilitation. Additional sums up to \$300,000, also for allocation by the officers, may be appropriated for this same purpose from time to time.

Officers of the Foundation have already allocated funds for ten projects under the European Rehabilitation Program as follows:

New School for Social Research (\$1,400), for a trip to Germany by Professor Eduard Heimann, as guest professor at the Universities of Göttingen and Hamburg; Germanistic Society of America (\$69,000), for the purchase of periodicals and medical books for university libraries in Germany and Austria; Karl Brandt of Stanford University (\$6,500), for a trip to Ger-

many, as guest professor at the University of Heidelberg; World Student Service Fund (\$13,000), for the Salzburg Seminar in American Civilization; American Association of Colleges for Teacher Education (\$38,060), for a program of assistance in the reconstruction of teacher education in Germany and Austria; American Music Center (\$7,500), for travel expenses of American artists to Germany and Austria; Mrs. Jella Lepman, of the International Youth Library, Munich (\$1,500), for a trip to the United States; College of William and Mary (\$1,000), for a trip to Germany by Professor Curt Bondy, as guest professor at the University of Göttingen; University of Notre Dame (\$1,000), for a trip to Germany by Professor Ferdinand A. Hermens, as guest professor at the Universities of Bonn and Muenster; Union Theological Seminary (\$1,500), for a lecture tour in Germany by Professor Paul J. Tillich.

NATIONAL RESEARCH COUNCIL
JOINT COMMITTEE ON PERSONNEL PROBLEMS

National needs during the recent war, and interruption of training, have revealed broad problems of selection, training and utilization of research personnel in all scholarly fields. The present shortage of highly trained and highly competent personnel is a matter of grave national importance.

Certain agencies, notably in the Army and Navy, have already moved energetically to ensure for themselves a satisfactory supply of young persons of high quality. The over-all problems of national supply and needs in various fields, however, were taken up this year on an exploratory basis by a joint committee on personnel problems, operating under the auspices of

the National Research Council, the American Council of Learned Societies, the Social Science Research Council and the American Council on Education. These organizations are convinced that a study of our population is urgently needed to determine our resources in competent youth for advanced training in research fields. It would seem equally necessary to evaluate the present situation of supply and demand, and to estimate a suitable distribution of future demands. It is the function of the committee to help inaugurate the work, guide policy, recommend investigations, and, ultimately, to endeavor to bring the results of the work to bear on educational and other national policy. The committee itself is composed of outstanding representatives of the various fields, and consultant services of other authorities are available.

An analysis of the nation's resources of youth qualified for training to the level of research competence, and the problem of relating this to the growing demands of our civilization, can involve many things. There appear to be four main areas where significant work may be undertaken as an initial attack on the problem.

As a means of evaluating the academic and other abilities of the young people in our population, and hence their potentialities as research personnel, there are already available records of a variety of test programs, carried out by colleges, military services and others. These records need to be analyzed to provide a more complete picture and in some cases to indicate the need for additional test programs.

Another essential part of this investigation is a reasonably accurate inventory of existing research personnel, with information about them. The Office of Scientific Personnel of the National Research Council has

under way two studies — one on practices in the United States in listing information on scientific and professional specialists, and another to compile a complete roster of natural scientists.

Perhaps the most frequent request for information concerns the future demand for various types of personnel. This area is obviously one of difficulty because it involves several unpredictable factors — possible economic depression, the national budget, industrial support of research, and the future demands of educational institutions and of foreign countries. A technique for obtaining and analyzing pertinent information needs to be worked out.

Finally, there has been initiated a study of the prerequisite qualities for success in research, in addition to intellectual abilities. This type of study has considerable value since it has a bearing on all scholarship activities, on manpower legislation, on employer recruitment programs, and on educational planning and guidance programs.

In 1947 The Rockefeller Foundation allocated \$20,000 to the National Research Council for exploratory studies of the four-council committee on personnel problems.

CHINA MEDICAL BOARD, INC.

The Rockefeller Foundation in 1947 made a terminal grant of \$10,000,000 to the China Medical Board, Inc., for support of the Peiping Union Medical College. After a lapse of almost six years entailed by the war this outstanding Chinese medical school has again opened its doors. Founded in 1906 through the efforts of a group of missionary organizations, the college was taken over in 1915 by the China Medical Board, at that time an operating division of The Rockefeller

Foundation. This Board assumed full support of the college and after a series of careful studies allocated almost \$10,000,000 to purchase land and erect a plant. The new buildings, located in the old Tartar section of Peiping, were formally dedicated in 1921. Seven years later the China Medical Board was incorporated as a separate entity and provided with an endowment fund of \$12,000,000 to be used in support of the Peiping Union Medical College and other like institutions. From that time until 1941 the Board used the income from this fund, supplemented by annual grants totaling another \$12,000,000 or so from the Foundation, exclusively to maintain the Peiping college. Including its terminal grant of \$10,000,000 made in 1947 the Foundation has given a total of \$44,652,490 toward the development of this modern medical school.

This year the college resumes its unique place in Far Eastern medicine. On January 1st it had no director, no budget, no program, and its buildings were occupied by the executive headquarters of the peace commission which was endeavoring to arbitrate the difficulties between the Chinese National Government and the Communists. Most of its valuable medical equipment had been stolen or removed to military hospitals by the Japanese. The same conditions prevailed in the teaching hospital, the health station and the School of Nursing. By May, however, the peace headquarters were closed out, and the newly appointed director of the college, Dr. C. U. Lee, arrived to take up his duties. The next few months were given over to the arduous tasks of setting up administrative machinery, reconditioning the buildings, and obtaining essential supplies and equipment. Entrance examinations were held in Peiping and Shanghai for 34 candidates for admission. With the

cooperation of professors from Tung Nan Medical College, Shanghai, Pei Ta Medical College and Tsing Hua University, formal instruction began in October with a registration of 22 first-year medical students. The School of Nursing admitted 16 first-year students at this time, bringing its total undergraduate enrollment to 47. A group of graduate students of public health nursing completed a six-month course during the year. In addition to its regular service program the health station has been providing instruction and field experience in public health nursing to the undergraduate nursing students. There being no public health teaching program for medical students the health station has also cooperated with the National Institute of Health to provide training for health officers and tuberculosis control officers.

In preparation for the reopening of the hospital in 1948 an intensive program of rehabilitation and re-equipment has been carried out, and a skeleton staff has been at work in the pharmacy, organizing and arranging the drugs and chemicals left by the Japanese and preparing the pharmacy to receive fresh stocks.

Dr. Harold H. Loucks, representative of the China Medical Board, Inc., who with Dr. Alan Gregg and Dr. C. Sidney Burwell, visited China in 1946 to study the problem of the development of medicine and public health, has aided the officers of the college in drawing up budgets and formulating long-term plans.

REPORT OF THE TREASURER

TREASURER'S REPORT

IN the following pages is submitted a report of the financial transactions of The Rockefeller Foundation for the year ended December 31, 1947:

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THE ROCKEFELLER FOUNDATION

BALANCE SHEET — DECEMBER 31, 1947

ASSETS

SECURITIES (Ledger value)..... \$152,280,588.73
 (Market value \$232,438,681.59)

CURRENT ASSETS

Cash on deposit

In New York.....	\$4,619,317.98
In London — £17-7-11 @ \$3.665.....	63.82
In Canada — Can. \$404,380.22 @ .90654...	366,586.66
	<hr/>
Advances and deferred charges.....	\$741,289.92
Sundry accounts receivable.....	107,164.92
	<hr/>

		4,985,968.46
		<hr/>
Advances and deferred charges.....	\$741,289.92	
Sundry accounts receivable.....	107,164.92	848,454.84
		<hr/>

EQUIPMENT

In New York.....	66,761.44
	<hr/>
	\$158,181,773.47
	<hr/>

TREASURER'S REPORT

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BALANCE SHEET — DECEMBER 31, 1947

FUNDS AND OBLIGATIONS

PRINCIPAL FUND..... \$118,071,816.04

COMMITMENTS

Unpaid appropriations.....	\$30,747,162.29
Unappropriated authorizations.....	1,494,767.00
	<hr/>
	32,241,929.29

FUNDS AVAILABLE FOR COMMITMENT

Appropriations Account No. 1.....	\$389,620.08
Appropriations Account No. 2.....	7,306,400.00
	<hr/>
	7,696,020.08

CURRENT LIABILITIES

Accounts payable.....	105,246.62
-----------------------	------------

EQUIPMENT FUND..... 66,761.44

\$158,181,773.47

PRINCIPAL FUND

Balance, December 31, 1946.....					\$138,005,205.64
Add					
Balance of Bequest under Will of Robert Marsh, Jr.....					3,298.94
Partial payment of Bequest under Will of William O. Wakenight.....					8,889.71
Value of 68,351 shares Central & South West Corp. Com. Stock (Par \$5).....					\$666,422.25
Less					
Amount by which the proceeds of securities sold, redeemed, etc., during the year failed to equal the ledger value.....			\$611,998.21		
Charges for registration of securities.....		2 29		612,000.50	54,421.75
					\$138,071,816.04
Deduct					
Amount transferred to Appropriations Account No. 2				\$10,000,000.00	
Amount appropriated to China Medical Board, Inc., from Principal Fund.....				10,000,000.00	20,000,000.00
Balance, December 31, 1947.....					\$118,071,816.04

APPROPRIATIONS AND PAYMENTS

Unpaid appropriations, December 31, 1946.....					\$30,727,897.32
Appropriations during the year 1947 (For detail see pages 284 to 316)					
China Medical Board, Inc.....					\$10,000,000.00
General Education Board.....					1,500,000.00
Public Health.....					2,250,000.00
Medical Sciences.....					1,521,125.00
Natural Sciences.....					1,670,090.00
Social Sciences ..					3,051,375.00
Humanities.....					1,508,600.00

Miscellaneous	\$229,000.00
Administration	
Scientific Services	995,494.00
General.....	320,374.00
	<hr/>
Unused balances of appropriations allowed to lapse	823,046,058 00
	689,296 82
	<hr/>
	322,356,761.18
	853,084,658 50
Payments on 1947 and prior years' appropriations (For detail see pages 284 to 316)	
China Medical Board, Inc.....	810,000,000.00
General Education Board.....	1,500,000.00
Public Health.....	3,296,102.23
Medical Sciences	1,518,592.94
Natural Sciences	1,834,620.60
Social Sciences.....	1,892,350.36
Humanities.....	1,155,851.08
Miscellaneous..	41,596.02
Administration	
Scientific Services	801,160.75
General.....	297,222.23
	<hr/>
Unpaid appropriations, December 31, 1947.....	22,337,496.21
	<hr/>
	330,747,162 29
UNAPPROPRIATED AUTHORIZATIONS	
Unappropriated authorizations, December 31, 1946	\$1,277,210.00
Add	
Authorizations during 1947 for later appropriation by the Executive Committee.	\$367,557.00
Less: Authorizations allowed to lapse	150,000 00
	<hr/>
Unappropriated authorizations, December 31, 1947.....	217,557 00
	<hr/>
	31,494,767.00

FUNDS AVAILABLE FOR COMMITMENT

APPROPRIATIONS ACCOUNT No. 1

Funds available for commitment, December 31, 1946.....	\$221,431.46
Add	
Income and refunds received during 1947	
Income.....	\$10,011,756.14
Refunds.....	37,150.66
Unused balances of appropriations and authorizations allowed to lapse.....	839,296.82
	10,888,203.62
	<hr/>
	\$11,109,635.08
Deduct	
Appropriations from this account during 1947.....	\$10,352,458.00
Authorizations during 1947.....	367,557.00
	10,720,015.00
	<hr/>
Funds available for commitment, December 31, 1947.....	\$389,620.08
	<hr/>

APPROPRIATIONS ACCOUNT No. 2

Funds available for commitment, December 31, 1946.....	\$ 0
Add	
Amount transferred from Principal Fund as of January 1, 1947.....	10,000,000.00
Amount appropriated from Principal Fund to China Medical Board, Inc.....	10,000,000.00
	<hr/>
	\$20,000,000.00
Deduct	
Appropriations from this account during 1947 (including \$10,000,000 to China Medical Board, Inc.).....	12,693,600.00
	<hr/>
Funds available for commitment, December 31, 1947.....	\$7,306,400.00
	<hr/>

APPROPRIATIONS AND UNAPPROPRIATED AUTHORIZATIONS

Commitments, December 31, 1946

Unpaid appropriations.....	\$30,727,897.32
Unappropriated authorizations.....	1,277,210.00

Add

Amount appropriated and authorized during 1947

Appropriated.....	\$23,046,058.00
Less: Appropriations lapsed during 1947	689,296.82
			22,356,761.18
Authorized.....	\$367,557.00
Less: Authorizations lapsed during 1947	150,000.00
			217,557.00
			22,574,318.18
			\$54,579,425.50

Deduct

Payments on 1947 and prior years' appropriations.....	22,337,496.21
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Commitments, December 31, 1947

Unpaid appropriations.....	\$30,747,162.29
Unappropriated authorizations.....	1,494,767.00

EQUIPMENT FUND

	BALANCE	CHANGES DURING 1947		BALANCE
	DEC. 31, 1946	EXPENDITURES	DEPRECIATION	DEC. 31, 1947
Library.....	\$12,375.00	\$729.97	\$425.97	\$12,679.00
Equipment.....	39,908.40	15,524.22	1,350.18	54,082.44
	<u>\$52,283.40</u>	<u>\$16,254.19</u>	<u>\$1,776.15</u>	<u>\$66,761.44</u>

**APPROPRIATIONS DURING 1947, UNPAID BALANCES OF PRIOR YEAR APPROPRIATIONS,
AND PAYMENTS THEREON IN 1947**

	APPROPRIATIONS PRIOR YEARS	1947	1947 PAYMENTS
PUBLIC HEALTH			
International Health Division of The Rockefeller Foundation *			
Prior Years (RF 42105, 43092, 44106).....	\$2,123,749.22		
1947 (RF 46130).....	2,200,000.00	8.....	\$2,544,128.07
1948 (RF 47123).....	2,200,000.00
Revolving Fund to provide working capital (RF 29093).....	200,000.00
The Rockefeller Foundation Health Commission * (RF 42106, 43093, 44107).....	1,044,215.79	451,974.16
Harvard University, Cambridge, Massachusetts. School of Public Health			
General budget (RF 45109).....	900,000.00	100,000.00
Health Insurance Plan of Greater New York			
Development and operation of a medical insurance program (RF 46131).....	150,000.00	150,000.00
Rockefeller Institute for Medical Research, New York City			
Toward general expense of administration and operation (RF 47056).....	50,000.00	50,000.00
University of Toronto, Canada. School of Nursing			
Construction of new building (RF 45037).....	300,000.00
TOTAL — PUBLIC HEALTH.....	\$6,917,965.01	\$2,250,000.00	\$3,296,102.23

MEDICAL SCIENCES

Psychiatry, Neurology and Allied Subjects

American Psychiatric Association, New York City

Work of Committee on Psychiatric Nursing (RF 43013, 45005, 47107).....

\$17,744.10

\$15,000.00

\$9,915.11

*A complete financial statement of the work of the International Health Division and The Rockefeller Foundation Health Commission for 1947 will be found on pages 318 to 335.

Burden Neurological Institute, Bristol, England						
Research in neurophysiology and neurosurgery (RF 47088)	. . .	\$.. .	850,625 00		\$5,040 63	
Catholic University of America, Washington, D. C.						
Teaching and research in psychiatry and child guidance (RF 44059)	. . .	16,000 00	.. .		\$,000 00	
Child Research Council of Denver, Colorado						
Psychological studies and studies in child growth and development (RF 46086)		20,990 00			13,780 00	
Columbia University, New York City						
Investigation of genetic factors in the incidence of nervous and mental diseases peculiar to old age (RF 45002, 47068)	. . .	10,000 00	31,500.00		8,810 03	
Research in brain chemistry (RF 47008)	. . .		19,500 00		3,250 00	
Dalhousie University, Halifax, Nova Scotia						
Development of teaching in psychiatry (RF 44058, 47069)		4,822 14	19,500 00		5,892 35	
Dikemark Mental Hospital, Asker, Norway						
Research on mental disease (RF 39044)	5,946 16		Cr. 1,936 01		
Duke University, Durham, North Carolina						
Teaching and research in psychiatry and mental hygiene (RF 40005)	13,664 55	.. .		12,500 00	
Georgia State College for Women, Milledgeville						
Research in medical genetics (RF 47055)	10,000 00		2,000 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 46073)	13,211 40			1,719 56	
Harvard Medical School, Boston, Massachusetts						
Teaching and research in psychiatry (RF 45033)	48,000 00			35,876 73	
Harvard University, Cambridge, Massachusetts						
Research in epilepsy at Harvard Medical School and Boston City Hospital (RF 42109)	55,901.90		19,000.00	

	PRIOR YEARS	APPROPRIATIONS 1947	1947 PAYMENTS
MEDICAL SCIENCES — <i>Continued</i>			
Psychiatry, Neurology and Allied Subjects — <i>Continued</i>			
Johns Hopkins University, Baltimore, Maryland			
Research and training in psychiatry (RF 43053).....	\$58,734.47	\$.....	\$37,946.95
Karolinska Institute, Stockholm, Sweden			
Research in neurophysiology (RF 45003).....	25,082.45	11,136.78
London County Council, England			
Research in psychiatry at Maudsley Hospital (RF 38061).....	37,207.83	Cr. 1,700.06
Massachusetts Institute of Technology, Cambridge			
Expenses of a project in mathematical biology to be conducted jointly with the National Institute of Cardiology, Mexico City (RF 47009).....	13,750.00	2,750.00
McGill University, Montreal, Canada			
Maintenance of Department of Psychiatry (RF 43046).....	78,354.57	27,099.73
Research in brain chemistry (RF 46069).....	45,467.42	9,065.16
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).....	15,764.71	12,261.16
National Mental Health Foundation, Philadelphia, Pennsylvania			
General purposes (RF 47010).....	50,000.00	25,000.00
New York University, New York City			
Teaching and research in Department of Psychiatry (RF 43078).....	31,161.47
Roscoe B. Jackson Memorial Laboratory, Bar Harbor, Maine			
Studies of genetic factors of intelligence and emotional variation in mammals (RF 45008).....	139,200.00	46,400.00

Tavistock Clinic, London, England				
Research and teaching in the field of psychiatry (RF 46013).....	\$44,701.24	\$.....	\$26,598.01	
Tufts College Medical School, Boston, Massachusetts				
Research in brain chemistry (RF 44098).....	28,000.18	7,000.00	
University College, London, England				
Research in physiology (RF 45085).....	60,789.37	8,061.25	
University of Brussels, Belgium				
Research in neurophysiology (RF 46015).....	9,651.93	280.07	
University of Cambridge, England				
Research in neurophysiology (RF 46014).....	48,641.24	6,729.26	
Psychological Laboratory. Training and research (RF 46084).....	40,114.10	8,467.55	
University of Chicago, Illinois				
Teaching and research in psychiatry (RF 44024, 47050).....	17,500.00	150,000.00	35,000.00	
University of Cincinnati, Ohio				
Teaching and research in psychiatry (RF 47121).....	175,000.00	
University of Edinburgh, Scotland				
Research in psychiatry, neurology and neurosurgery (RF 47007).....	20,250.00	3,665.20	
University of Illinois, Urbana				
Research in the biochemical aspects of schizophrenia (RF 45001).....	85,000.00	22,500.00	
Research in epilepsy (RF 47106).....	27,000.00	4,500.00	
University of London, England. Galton Laboratory				
Research in problems of human heredity (RF 46085).....	19,853.70	4,233.81	
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).....	500.00	500.00	
University of Zurich, Switzerland				
Research in nervous and mental diseases (RF 46016).....	10,337.30	5,241.90	

MEDICAL SCIENCES — *Continued***Psychiatry, Neurology and Allied Subjects — *Continued***

Vanderbilt University School of Medicine, Nashville, Tennessee

Support of a liaison service between psychiatry and surgery (RF 45004)..... \$3,243.28 \$..... \$2,668.78

Washington University, St. Louis, Missouri, School of Medicine

Support of Department of Neuropsychiatry (RF 44025, 47041)..... 20,803.97 150,000.00 37,405.22

Wilhelmina Hospital, Amsterdam, Netherlands

Research in psychosomatic medicine (RF 47105)..... 20,000.00

Yale University, New Haven, Connecticut, School of Medicine

Development of psychiatry (RF 42108)..... 48,925.59 37,500.00

Endocrinology

Columbia University, New York City

Research in endocrinology (RF 43012, 46026)..... 42,734.83 9,573.13

Indiana University, Bloomington

Development of the library collections of the Institute for Sex Research, Inc.
(RF 47091)..... 14,000.00 14,000.00

Institute of Biology and Experimental Medicine, Buenos Aires, Argentina

Support of research (RF 44136, 47067)..... 2,118.54 15,000.00 778.37

Massachusetts General Hospital, Boston

Research in endocrinology and metabolism (RF 43003, 46071)..... 10,134.97 4,000.00

McGill University, Montreal, Canada

Research in endocrinology (RF 41074, 46070)..... 28,103.07 8,158.64

National Research Council, Washington, D. C.

Committee for Research in Problems of Sex (RF 44002, 46051, 46134)..... 208,646.19 81,881.26

University of California, Berkeley

Research on hormones and vitamins (RF 44064)..... 16,250.00 8,750.00

Medical Education

American University of Beirut, Lebanon				
Equipment for the School of Medicine (RF 47065)	\$	\$100,000.00	\$30,000.00	
Association of Honorary Consultants of the Army Medical Library, Washington, D. C.				
General expenses (RF 45006)	3,000.00	2,995.23	
Bingham Associates Fund of Maine, Boston, Massachusetts				
Developing a program of postgraduate medical education in certain rural areas and towns in Massachusetts (RF 45073)	200,000.00	41,715.08	
Dalhousie University, Halifax, Nova Scotia				
Teaching facilities for medical students at Victoria General Hospital (RF 42038)	50,000.00	50,000.00	
Fifth International Congress of Pediatrics, New York City				
Traveling expenses of European pediatricians to Congress (RF 47018).	15,000.00	15,000.00	
Forsyth Dental Infirmary for Children, Boston, Massachusetts				
Expenses of a consultant in dental education (RF 47011)		12,000.00	6,000.00	
Graduate Medical Education, Eighth Service Command, Dallas, Texas				
For graduate medical education under direction of the medical consultant of the Eighth Service Command in Army hospitals of that area (RF 45040)	1,000.00	..	35.10	
Harvard University, Cambridge, Massachusetts				
Development of legal medicine (RF 43017, 44001)	63,252.44	10,952.73	
Johns Hopkins University, Baltimore, Maryland				
Institute of History of Medicine (RF 38022)	22,500.00	15,000.00	
Meharry Medical College, Nashville, Tennessee				
Current expenses (RF 47070)	100,000.00	50,000.00	
Postwar appointments for medical graduates from armed services (RF 43103, 44135)	324,589.28	132,414.03	
Publication of French contributions to medicine during the war years (RF 46028)	8,275.00	7,530.85	

	PRIOR YEARS	APPROPRIATIONS 1947	1947 PAYMENTS
MEDICAL SCIENCES — <i>Continued</i>			
Medical Education — <i>Continued</i>			
Royal Society of Medicine, London, England			
Expenses of a Central Medical Library Bureau (RF 45115).....	\$174,913.89	\$.....	\$58,341.28
University of Brussels, Belgium			
Teaching and research in preventive medicine (RF 47122).....	33,000.00
Teaching and research in social medicine (RF 45090).....	5,532.86	10.20
University of Iceland, Reykjavik			
Scientific equipment for School of Medicine (RF 42039).....	279.35	17.87
University of San Marcos, Peru. Faculty of Medicine			
Equipment and supplies for Department of Pathology (RF 46087).....	18,211.12	13,532.03
University of Zagreb, Yugoslavia			
Teaching public health to medical students (RF 46088).....	21,000.00	9,008.30
Washington University, St. Louis, Missouri, School of Medicine			
Maintenance (RF 38059).....	71,467.07	39,648.17
Teaching of preventive medicine (RF 44062, 47042).....	6,737.35	30,000.00	9,000.00
Group Medicine and Medical Economics			
University of Michigan School of Public Health, Ann Arbor			
Teaching of medical economics (RF 44061).....	5,702.99	5,702.99
General			
Columbia University, New York City			
Study of the effects of fetal and neonatal injury on growth and functional development (RF 47051).....	75,000.00	17,455.00
Medical Research Council, London, England			
Purchase of scientific equipment (RF 47066).....	20,000.00

Research Council of the Department of Hospitals, New York City			
Research on chronic diseases (RF 45056).....	\$11,175.30	\$.....	\$11,000.00
Fellowships and Grants in Aid			
Fellowships			
Administered by The Rockefeller Foundation (RF 43118, 44084, 44139, 45119, 46102, 46135, 47134).....	249,457.32	125,000.00	117,820.16
Medical Research Council, London, England (RF 45042, 46029).....	67,195.51	2,318.60
National Health and Medical Research Council, Department of Health, Can- berra, Australia (RF 45074, 47017).....	7,500.00	30,000.00	15,000.00
National Research Council, Washington, D. C.			
Medical sciences (RF 42040, 46133).....	224,302.67	42,701.04
Welch fellowships in internal medicine (RF 41028).....	122,427.24	18,246.93
Scholarships for British Medical Students (RF 42110, 43101).....	1,985.00	263.78
Grants in Aid (RF 42137, 43122, 44143, 45123, 46120, 46139, 47089, 47138).....	283,104.62	200,000.00	153,980.33
Special Emergency Grant in Aid Fund			
For scientific equipment to medical science laboratories of universities and tech- nical schools in the Netherlands (RF 45089).....	34,770.72	11,602.67
TOTAL — MEDICAL SCIENCES.....	\$3,389,206.08	\$1,521,125.00	\$1,518,592.94

NATURAL SCIENCES

Experimental Biology			
Amherst College, Massachusetts			
Research in biology (RF 46095).....	\$35,500.00	\$.....	\$9,724.53
California Institute of Technology, Pasadena			
Support of combined programs in biology and chemistry (RF 46064, 47043)...	25,000.00	50,000.00	50,000.00
Carlsberg Foundation, Copenhagen, Denmark			
Research in biochemistry (RF 46107).....	24,791.00	5,273.16

NATURAL SCIENCES — *Continued***Experimental Biology — *Continued***

	APPROPRIATIONS	1947	PAYMENTS
	PRIOR YEARS	1947	
Catholic University of America, Washington, D. C.			
Research on decomposition and synthesis (RF 40059).....	\$15,062.73	\$.....	\$.....
Columbia University, New York City			
Research on electrical properties of cells and tissues (RF 41093).....	11,411.13
Research in enzyme chemistry (RF 45058).....	2,500.00	2,500.00
Research on vitamins and related substances in relation to plant growth (RF 45086).....	19,000.00	5,000.00
Research on variation in genetic constitution in relation to growth and development (RF 44115).....	30,000.00	15,000.00
Research in immunochemistry (RF 46010).....	16,000.00	8,000.00
Research in biochemistry (RF 46098).....	20,500.00	4,500.00
Connecticut Agricultural Experiment Station, New Haven			
Research in genetics and growth in plants (RF 40106).....	3,246.87	3,246.87
Cornell University, Ithaca, New York			
Research in enzyme chemistry (RF 42050).....	10,410.00	3,000.00
Research in protein chemistry (RF 45094).....	42,200.00	7,800.00
Duke University, Durham, North Carolina			
Research on physical chemistry of proteins (RF 43051, 46096).....	24,000.00	5,000.00
Eidgenössische Technische Hochschule, Zurich, Switzerland			
Laboratory of Organic Chemistry			
Research on constitution and synthesis of physiologically active compounds (RF 46099).....	147,662.41	27,746.13
Harvard University, Cambridge, Massachusetts			
Basic studies in chemotherapy (RF 45014).....	31,106.92	17,378.04
Research in the Medical School on the application of physical and chemical methods to problems of tissue structure (RF 46019).....	33,500.00	7,500.00

Indiana University, Bloomington			
Research in cytogenetics (RF 45036).....	\$69,500.00	\$.....	\$23,500.00
Iowa State College, Ames			
Research in genetics (RF 46032).....	12,000.00	5,805.70
Johns Hopkins University, Baltimore, Maryland			
Research in infrared spectroscopy (RF 45071).....	20,000.00	10,000.00
Karolinska Institute, Stockholm, Sweden			
Medical Nobel Institute. Equipment for Departments of Biochemistry and Cell Research (RF 45068).....	44,071.27	41,403.92
Research in biochemistry (RF 46116, 47100).....	22,500.00	61,525.00	20,892.52
Massachusetts Institute of Technology, Cambridge			
Development of biological engineering (RF 40039).....	46,876.37	46,668.59
Expenses of a project in mathematical biology to be conducted jointly with the National Institute of Cardiology in Mexico City (RF 47009).....	13,750.00	2,750.00
Research in biology (RF 47039).....	250,000.00	21,000.00
Research in the physical chemistry of protein solutions (RF 45107).....	60,000.00
New York University, New York City			
Research in nutrition (RF 44127).....	3,750.00	3,750.00
Princeton University, New Jersey			
Research in organic chemistry (RF 40058).....	26,466.72	3,000.00
Research in genetics (RF 47076).....	10,000.00	2,525.00
Roscoe B. Jackson Memorial Laboratory, Bar Harbor, Maine			
Establishing and maintaining a mammalian stock center (RF 43024).....	11,572.00	7,661.00
Construction and equipment of animal quarters (RF 46062, 47040).....	75,000.00	10,000.00	42,500.00
Stanford University, Palo Alto, California			
Research in biochemistry (RF 45023, 45084).....	13,292.00	6,956.68

		APPROPRIATIONS PRIOR YEARS	1947	1947 PAYMENTS
NATURAL SCIENCES — <i>Continued</i>				
Experimental Biology — <i>Continued</i>				
University of California, Berkeley				
Construction and installation of cyclotron (RF 42001).....	\$352,496.33	\$.....	\$.....	
Research in immunochemistry (RF 46033).....	9,000.00	9,000.00	
Research in biochemistry (RF 46034).....	10,000.00	5,000.00	
Research in the comparative biochemistry of marine organisms (RF 47077)...	12,000.00	3,000.00	
University of Cambridge, England				
Molteno Institute of Biology and Parasitology				
Research in cell physiology (RF 47101).....	30,375.00	
University of Chicago, Illinois				
Research in molecular spectra (RF 41101).....	12,470.45	6,500.00	
Research in application of spectroscopic methods to biological problems (RF 40021).....	20,470.25	
University of Copenhagen, Denmark				
Research on the biological uses of isotopes (RF 47083).....	17,000.00	4,250.00	
University of Illinois, Urbana				
Research in biochemistry of amino acids (RF 45059)	5,000.00	5,000.00	
University of Leeds, England				
Research in molecular biology (RF 45070, 47081).....	1,779.06	85,000.00	276.98	
Research on X-ray analyses of biological tissues (RF 46108).....	5,000.00	2,036.15	
University of London, England				
King's College. Research in molecular biology (RF 47082).....	21,000.00	
Imperial College of Science and Technology. Research on vitamins, sterols and related compounds (RF 38070)	21,213.91	2,108.01	
University of Minnesota, Minneapolis				
Research in biophysics (RF 41062).....	10,500.00	1,214.45	

University of Missouri, Columbia				
Research in genetics (RF 47054).....	\$.....	\$10,500.00	\$3,000.00	
University of Oxford, England				
Dyson Perrins Laboratory of Organic Chemistry				
Research in organic chemistry (RF 47084).....	19,440.00	2,420.25	
Sir William Dunn School of Pathology				
Biochemical investigation of penicillin (RF 44125).....	47.16	Cr.214.55	
Research on antibiotics (RF 46021, 47003).....	13,422.95	15,000.00	21,513.38	
University of Pennsylvania, Philadelphia				
Research in experimental biology (RF 43038)	2,338.60	Cr.156.58	
Research on permeability of the red blood cell (RF 44056).....	6,796.98	2,654.73	
University of Rochester, New York				
Research in genetics (RF 44031).....	1,980.00	838.33	
University of São Paulo, Brazil. Faculty of Philosophy				
Equipment for research in the Department of Physics (RF 45061).....	66,868.55	3,250.68	
University of Stockholm, Sweden				
Research in cell physiology (RF 47014).....	12,600.00	11,699.33	
University of Texas, Austin				
Research in genetics and biochemistry (RF 47053).....	12,000.00	3,000.00	
Research in genetics of drosophila (RF 46020).....	24,239.90	8,950.00	
University of Toronto, Canada				
Research in nutrition (RF 44117).....	3,221.51	2,207.46	
University of Upsala, Sweden				
Research on physical-chemical properties of proteins and other substances of biological and medical importance (RF 46129).....	50,000.00	50,000.00	
University of Utrecht, Netherlands				
Research in the biochemistry of growth substances (RF 46035).....	4,237.50	3,406.50	
	-5,011.20	12,000.00	6,780.15	

NATURAL SCIENCES — *Continued***Experimental Biology — *Continued***

		APPROPRIATIONS	1947	PAYMENTS
		PRIOR YEARS	1947	
University of Wisconsin, Madison	Research in biochemistry of symbiotic nitrogen fixation (RF 40071, 46118)....	\$25,141.39	\$.....	\$2,854.48
	Research in physical chemistry (RF 45015).....	9,000.00	5,195.43
Uruguay, Ministry of Public Health, Montevideo	Equipment for the Research Institute of Biological Sciences (RF 47078).....	10,000.00	2,548.62
Washington University, St. Louis, Missouri	Research in general physiology and experimental embryology (RF 46097)....	25,000.00	8,750.00
Yale University, New Haven, Connecticut	Research in enzyme chemistry (RF 45095).....	6,500.00	2,875.47
Yerkes Laboratories of Primate Biology, Orange Park, Florida	Building and general budget (RF 47019).....	190,000.00	17,500.00
Fellowships	Administered by The Rockefeller Foundation (RF 41114, 42134, 44085, 45080, 46110, 46136, 47135).....	206,207.85	150,000.00	85,542.85
Brown University, Providence, Rhode Island	Support of scholarships, assistantships and fellowships in advanced applied mathematics (RF 46063).....	50,000.00	15,000.00
National Research Council, Washington, D. C. (RF 41112, 44112, 46008, 47057) ..	430,686.55	50,000.00	236,550.42	
New York University, New York	Development of graduate work in applied mathematics (RF 46009).....	54,000.00	13,000.00
General				
Agricultural Program in Mexico	General expenses (RF 45105, 46126, 47115).....	262,613.51	266,900.00	167,316.77
	Construction and equipment of experimental laboratory (RF 44070, 44114)....	22,009.83	22,005.49
	Support of special program of improvement of the Mexican substations for agricultural research and demonstration (RF 45106).....	37,429.51	15,083.18
	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).....	\$10,150.03	\$..	\$8,500.00
American Mathematical Society, New York City				
Expenses of International Congress of Mathematicians (RF 37108).....	5,000.00	
American Museum of Natural History, New York City				
Research in human paleontology (RF 47016).....	5,000.00	5,000.00
American-Soviet Science Society, New York City				
Support of general activities (RF 46100).....	25,000.00	
California Institute of Technology, Pasadena				
Completion of the 200-inch telescope project (RF 46128).....	250,000.00	250,000.00
Centre National de la Recherche Scientifique, Paris, France				
Special equipment for natural science research laboratories of France (RF 46048)	235,527.46	118,862.64
Travel of non-French delegates to conferences of scientists (RF 46049).....	97,838.85	14,887.25
China Medical Board, Inc., New York City				
Peiping Union Medical College, China				
Human paleontological research in Asia (RF 41102, 45024).....	36,760.80	12,805.12
Grants in Aid (RF 42138, 44144, 45081, 45124, 46106, 46140, 47058, 47139)....	257,066.77	225,000.00	144,030.67
Harvard University, Cambridge, Massachusetts				
For research, and publication of research, in the history of science (RF 47013)	10,000.00	1,500.00
Institute for the Unity of Science, Cambridge, Massachusetts				
Support of activities (RF 47131).....	9,000.00	
International Meteorological Organization, Lausanne, Switzerland				
Analysis and publication of data collected during the International Polar Year of 1932-1933 (RF 47132).....	12,000.00	
Massachusetts Institute of Technology, Cambridge				
Study of electronic computation (RF 46061)....	75,000.00	Cr.25,000.00

	PRIOR YEARS	APPROPRIATIONS 1947	1947 PAYMENTS
NATURAL SCIENCES — <i>Continued</i>			
General — <i>Continued</i>			
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).....	\$25,000.00	\$.....	Cr. \$6,500.00
National Research Council, Washington, D. C.			
American Geophysical Union. General expenses (RF 44053).....	3,500.00	3,500.00
National University of Colombia			
Faculty of Agronomy, Cali-Palmira. Equipment (RF 47118).....	10,000.00
Faculty of Agronomy Medellin. Equipment (RF 47117).....	60,000.00
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).....	15,150.00	8,000.00
Special Emergency Grant in Aid Fund			
For scientific equipment for natural science laboratories of universities and technical schools in the Netherlands (RF 45089).....	40,000.00	11,602.67
University of Iceland, Reykjavik			
Cost of building and equipping an Institute of Experimental Pathology (RF 45048).....	146,131.91	89,581.29
University of Leiden, Netherlands			
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	\$.....	\$15,540.44
University of São Paulo, Brazil			
Research in physics (RF 42090).....	1,179.25
University Research Fund. Equipment and consumable supplies (RF 47059).....	30,000.00	5,270.40
Yale University, New Haven, Connecticut			
Laboratories of Primate Biology. Maintenance (RF 42037).....	16,785.04	15,000.00
TOTAL — NATURAL SCIENCES.....	\$3,953,268.10	\$1,670,090.00	\$1,834,620.60
SOCIAL SCIENCES			
American Institute of Accountants, New York City			
Study of accounting definitions and postulates and their effect upon political-economic policies (RF 47073).....	\$30,000.00	\$5,000.00
Brookings Institution, Inc., Washington, D. C.			
Research in international relations (RF 46079).....	37,500.00	37,500.00
Research and education in fields of American foreign policy and international relations (RF 47027).....	225,000.00	37,500.00
Canadian Institute of International Affairs, Toronto, Canada			
General budget (RF 46036).....	37,967.42	9,065.16
Canadian Social Science Research Council, Montreal, Canada			
Stimulation of social science research in Canada (RF 46074).....	20,000.00	13,658.91
Carnegie Foundation, The Hague, Netherlands			
Purchase of books, periodicals and pamphlets and for cataloguing (RF 47028)...	30,000.00
Centre d'Études de Politique Étrangère, Paris			
General budget (RF 46075).....	43,129.56	19,945.18

	PRIOR YEARS	APPROPRIATIONS 1947	1947 PAYMENTS	300
SOCIAL SCIENCES — Continued				
Christian Michelsen Institute, Norway				
Development of research and popular education in international relations in Norway (RF 46076).....	\$10,424.85	\$.....	\$3,030.15	
College of William and Mary, Williamsburg, Virginia				
Study of the impact of war on the Hampton Roads area (RF 45013).....	11,412.53	9,677.32	
Columbia University, New York City				
Bureau of Applied Social Research				
Cost of three special studies (RF 47022).....	20,000.00	10,000.00	
Study of panel methods in research on public opinion, attitudes and consumer wants (RF 47090).....	27,000.00	
Support of the program of the Council for Research in the Social Sciences (RF 47075).....	30,000.00	15,000.00	
School of International Affairs				
Development of the Russian Institute (RF 45034).....	225,000.00	50,000.00	
Study of Russian foreign policy, with special reference to the Far East (RF 45088).....	14,500.00	
Study of the theory of public utility rates (RF 43034).....	20,650.00	Cr.3,350.00	
Study of trends in labor union leadership (RF 47006).....	23,500.00	2,000.00	
Commission of the Churches on International Affairs, New York City				
For expenses of international conferences (RF 47104).....	15,000.00	
Committee on Financing Higher Education and Research, New York City				
Survey of possibilities of a study of financing higher education and research (RF 47124).....	10,000.00	45.49	
Cornell University, Ithaca, New York				
Studies of civil liberties in wartime (RF 44049, 47052).....	1,500.00	10,000.00	11,500.00	
Council on Foreign Relations, New York City				
General research program (RF 47102).....	60,000.00	

History of the foreign relations of the United States during World War II (RF 46002).....	\$104,250.00	\$.....	\$25,229.82
War and peace studies and general research program (RF 46077).....	30,000.00	30,000.00
Dutch Economic Institute, Netherlands			
General budget (RF 46057).....	8,209.70	3,784.05
Fellowships			
Administered by The Rockefeller Foundation (RF 45121, 46103, 46137, 47108, 47136).....	182,299.14	120,000.00	52,209.42
Canadian Social Science Research Council, Montreal, Canada. Fellowships (RF 47093).....	10,000.00
Columbia University, New York City. School of International Affairs			
Special fellowships in the Russian Institute (RF 47045).....	75,000.00	12,325.00
Social Science Research Council, New York City (RF 44021, 45065, 45118, 46053, 47046).....	273,500.00	100,000.00	213,000.00
Foreign Policy Association, New York City			
Research program (RF 45116).....	150,000.00	50,000.00
Geneva Graduate Institute of International Studies, Switzerland			
Maintenance (RF 46078).....	70,000.00	35,000.00
Grants in Aid			
Regular program (RF 43059, 43124, 45125, 46105, 46113, 46141, 47140).....	266,199.28	175,000.00	146,574.54
Special fund for travel, studies and conferences, relating to problems arising from the release of atomic energy (RF 45093).....	24,516.21	13,699.26
Harvard University, Cambridge, Massachusetts			
Program of economic research (RF 47126).....	100,000.00
Research in social sciences (RF 35086).....	11,372.65
Harvard University and Radcliffe College, Cambridge, Massachusetts			
Research in field of international relations (LS 993).....	18.45

SOCIAL SCIENCES — *Continued*

		APPROPRIATIONS	1947	PAYMENTS
		PRIOR YEARS	1947	
Institute for Advanced Study, Princeton, New Jersey				
Study of the Law of International Civil Aviation (RF 45046).....	\$24,000.00	\$.....	\$8,000.00	
Study on the theory of value-formation in society (RF 46083).....	10,500.00	7,000.00	
Institute of Economic and Social Research, Paris, France				
For general expenses, equipment and printing accumulated studies (RF 47005)	130,000.00	16,908.28	
Institute of Economics and History, Copenhagen, Denmark				
Toward general budget, and printing of manuscripts now ready for publication (RF 46060).....	19,687.20	3,135.00	
Institute of International Affairs, Stockholm, Sweden				
Research and popular education in international problems (RF 46059).....	22,110.45	12,532.80	
Institute of Pacific Relations				
American Council, New York City. General expenses (RF 46044).....	45,000.00	15,000.00	
Pacific Council, Honolulu, Hawaii. General expenses and research (RF 46045)...	132,000.00	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).....	22,364.63	22,364.63	
Study to measure and interpret trends and forces affecting the United States in its international relations (RF 47103).....	37,400.00	7,466.69	
League of Nations, Princeton, New Jersey				
Economic, Financial, and Transit Department. Research programs (RF 45078) ..	8,172.84	
London School of Economics and Political Science, University of London, England				
Library development (RF 31030).....	9,391.70	1,563.44	
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) ..	7,500.00	5,000.00	

Miami University, Oxford, Ohio				
Studies of population redistribution (RF 46080).....	\$77,212.50	\$.....	\$13,373.00	
Study by the Scripps Foundation for Research in Population Problems on the influence of population factors upon labor market problems (RF 44110).....	3,476.00	
Nankai University, China. Institute of Economics				
General expenses (RF 46005).....	18,750.00	18,750.00	
National Bureau of Economic Research, New York City				
Support of general programs and special programs of research in finance and fiscal policy (RF 44020, 47120).....	330,000.00	1,300,000.00	110,000.00	
National Institute of Economic and Social Research of Great Britain, London				
General budget (RF 44108).....	97,295.65	21,991.20	
National Institute of Public Affairs, Washington, D. C.				
Training of personnel for the federal services (RF 43055, 47029).....	26,250.00	70,000.00	40,723.73	
National Opinion Research Center, Denver, Colorado				
Study of the isolation, measurement and control of interviewer effect in attitude and opinion studies (RF 47072).....	42,100.00	11,385.00	
Netherlands Institute of International Affairs, The Hague				
Conference on economic and cultural aspects of the German problem (RF 47004).....	25,000.00	25,000.00	
Office National des Universités, Paris, France				
Expenses of a section for the social sciences in the École Pratique des Hautes Études (RF 47125).....	30,000.00	
Pacific Coast Board of Intergovernmental Relations, San Francisco, California				
General expenses (RF 47030).....	30,000.00	5,000.00	
Princeton University, New Jersey				
Industrial Relations Section				
Research (RF 44046).....	3,750.00	3,750.00	
Office of Population Research of the School of Public and International Affairs (RF 44109).....	170,000.00	20,000.00	

		APPROPRIATIONS PRIOR YEARS	1947	1947 PAYMENTS
SOCIAL SCIENCES — <i>Continued</i>				
Royal Institute of International Affairs, London, England (Chatham House)				
History of the war and of the peace settlement (RF 45045, 47071).....	\$106,594.02	\$50,625.00	\$35,265.63	
Preparation of a history of the League of Nations (RF 46122).....	13,387.50	8,981.65	
Research program (RF 45044).....	95,567.30	32,245.05	
Social Science Research Council, New York City				
Administrative budget (RF 43058).....	45,000.00	30,000.00	
Conferences and planning (RF 44077).....	150,000.00	62,500.00	
General research projects (RF 31126).....	62,000.54	16,093.78	
Grants in aid of research (RF 41077, 46054)	76,350.00	14,945.61	
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).....	15,150.00	8,000.00	
Purchase of social sciences publications and their distribution to certain European libraries (RF 46046).....	17,000.00	10,000.00	
Research in economic history of the United States, the islands and nearby territory (RF 40116)	182,500.00	24,375.00	
Research planning in housing (RF 47020).....	45,000.00	5,000.00	
Stanford University, Palo Alto, California				
Food Research Institute				
International history of food and agriculture during World War II (RF 46041) ..	270,000.00	60,000.00	
Research program (RF 43056).....	15,000.00	
State Historical Society of Colorado, Denver				
Study of the western range cattle industry (1865-1895) (RF 44003).....	24,400.00	12,200.00	
State University of Iowa, Iowa City				
Study by Child Welfare Research Station of social and cultural factors in child development (RF 47032)	62,400.00	4,358.35	

Tufts College, Medford, Massachusetts				
Experimental program in the psychiatric approach to training and research in sociology (RF 45019).....	\$15,000.00	\$.....		\$8,992.35
University of Alabama, Tuscaloosa				
Bureau of Public Administration				
Study of the electoral process in the South (RF 46003).....	20,000.00		10,000.00
University of California, Berkeley				
Bureau of Business and Economic Research				
Toward its research program (RF 46111).....	35,000.00
Bureau of Public Administration				
Study of effects of Japanese migration and resettlement in California (RF 45018)	5,000.00		5,000.00
University of Cambridge, England				
Department of Applied Economics				
General budget (RF 46001).....	91,141.10		20,872.91
University of Chicago, Illinois				
History of Sears, Roebuck and Company, with emphasis on its implications to American society and economy (RF 46004).....	18,000.00		12,000.00
Program in education, training and research in race relations (RF 47031).....		75,000.00
Research in the Division of the Social Sciences (RF 45064).....	75,000.00		50,000.00
Studies of costs of commercial atomic energy (RF 46042).....	30,000.00		30,000.00
University of Denver, Colorado				
Burcau of Business and Social Research				
General budget (RF 45027).....	7,500.00		7,500.00
University of Glasgow, Scotland				
Development of research and training in the social sciences (RF 45026).....	42,551.87		12,312.78
University of Manchester, England				
Economics Research Section				
Research program (RF 46112).....	64,816.25		10,077.50

SOCIAL SCIENCES — <i>Continued</i>				
University of Minnesota, Minneapolis				
Industrial Relations Center				
General expenses (RF 47021).....	\$.....	\$45,000.00	\$7,500.00	
Research in the field of intergovernmental relations (RF 46052).....	66,550.00	16,340.50	
University of North Carolina, Chapel Hill				
Institute for Research in Social Science				
Expenses of a study of the Coker family (RF 47023).....	20,000.00	5,000.00	
University of Oslo, Norway				
Institute of Economics				
Research program (RF 46058).....	20,000.00	10,000.00	
University of Oxford, England				
Agricultural Economics Research Institute				
Studies of the relations between agriculture and industry (RF 47074).....	28,350.00	7,056.88	
Nuffield College				
Additional research faculty in the social sciences (RF 46132).....	162,000.00	
Social Studies Research Committee (RF 45017).....	10,537.64	10,378.91	
University of Pennsylvania, Philadelphia				
Wharton School of Finance and Commerce				
Industrial Research Department				
General budget (RF 44111).....	105,000.00	35,000.00	
Exploratory program of research in distribution (RF 44050).....	7,500.00	7,500.00	
School of Government				
Development of program (RF 40124).....	2,000.00	2,000.00	
University of Virginia, Charlottesville. Bureau of Public Administration				
General budget (RF 46082).....	39,300.00	26,800.00	

University of Wisconsin, Madison				
Program of research in housing (RF 46081).....	\$58,500.00	\$.....	\$19,053.03	
Yale University, New Haven, Connecticut				
Institute of International Studies				
Research program (RF 44022).....	62,500.00	25,000.00	
Labor and Management Center				
Study of labor market structure and wage determination (RF 46056).....	36,757.50	17,662.36	
TOTAL — SOCIAL SCIENCES	<u>84,647,024.43</u>	<u>\$3,051,375.00</u>	<u>\$1,892,350.36</u>	

HUMANITIES

Studies in Language and Foreign Culture

American Council of Learned Societies, Washington, D. C.				
Cataloguing American collections of Chinese and Japanese books (RF 37120)...	\$9,464.61	\$.....	\$.....	
Committee on Far Eastern Studies (RF 41029).....	1,303.28	
Committee on Near Eastern Studies (RF 47094).....	12,000.00	2,000.00	
Preparing materials for Slavic studies in the United States (RF 43099, 47049)...	4,605.25	25,000.00	14,605.25	
Procurement and reproduction of materials on Slavic subjects (RF 47127).....	100,000.00	
Toward completing a revised and enlarged edition of Redhouse's English and Turkish Lexicon (RF 45075).....	6,700.00	6,700.00	
Colegio de México, Mexico, D. F.				
Expenses of Center for Historical Research (RF 44134).....	28,260.00	14,130.00	
Program in linguistic studies (RF 47026).....	12,500.00	5,960.00	
Colorado School of Mines, Golden. Recording and reproducing equipment for lan- guage instruction (RF 45021).....	2,500.00	2,500.00	
Columbia University, New York City				
Department of Slavic Languages				
Development of teaching materials and methods of research (RF 47047)....	25,000.00	4,500.00	

HUMANITIES — *Continued***Studies in Language and Foreign Culture — *Continued***

		APPROPRIATIONS	1947	PAYMENTS
		PRIOR YEARS	1947	
Cornell University, Ithaca, New York				
Development of a Division of Modern Languages (RF 45091).....	\$95,000.00	\$.....	\$30,000.00	
Slavic Studies (RF 43097).....	14,637.71	
Duke University, Durham, North Carolina				
Purchase of books and other documentation in field of Latin American studies (RF 40049).....	5,500.00	
Grants in Aid				
Special fund for temporary addition of representative Chinese scholars to teaching staffs and projects in the United States (RF 44044).....	24,319.12	9,500.00	
Harvard University, Cambridge, Massachusetts				
Development of Slavic studies (RF 43098).....	4,232.17	4,232.17	
School of Education				
Training of teachers in English (RF 44075).....	7,500.00	5,000.00	
Indiana University, Bloomington				
Development of East European studies (RF 47002).....	27,500.00	5,500.00	
Institute of Pacific Relations, American Council, New York City				
English translations of source materials on Chinese history (RF 46093).....	12,500.00	12,497.42	
Ministry of Public Education, Guatemala				
Expenses of an expert to aid in development of National Archaeological Museum (RF 46012).....	3,000.00	3,000.00	
National Institute of Anthropology and History, Mexico City				
Development of teaching and research program and reorganization of library resources (RF 43083).....	17,794.83	10,399.94	

National Tsing Hua University, Kunming, China				
Support of work in humanities (RF 47099)	\$.....	\$20,000.00	\$.....	
Development of its program of teaching in humanities (RF 44076)	1,520.08	39.41	
National University of Mexico, Mexico, D. F.				
Aid to individual research projects in Center of Philosophical Studies and support of library (RF 44073)	2,500.00	2,500.00	
Pan American Union, Washington, D. C.				
Expenses of preparing for use its resources of Latin American newspapers and art material (RF 43084)	950.00	
Polish Library of Paris, France				
Expense of producing a catalogue of its printed holdings (RF 47133)	14,000.00	
Pomona College, Claremont, California				
Development of Far Eastern and Slavic studies (RF 44131)	27,300.00	7,000.00	
Princeton University, New Jersey				
Development of Near Eastern studies (RF 46066) ..	38,250.00	
Stanford University, Palo Alto, California				
Development of Far Eastern and Slavic studies (RF 44130)	57,000.00	3,750.00	
Development of teaching and research in the areas and languages of the Pacific, Eastern Asia and Russia (RF 45009)	35,000.00	..	4,601.39	
Hoover Institute and Library on War, Revolution and Peace				
Slavic studies (RF 46092)	185,000.00	38,888.58	
University of California, Berkeley				
Development of Slavic and Far Eastern studies (RF 44129)	60,000.00	10,000.00	
Development of Far Eastern language and area courses (RF 47063)	30,000.00	5,000.00	
Development of personnel in Slavic studies (RF 47128)	100,000.00	
University of Chicago, Illinois				
Analysis and evaluation of methods of teaching modern languages (RF 44100) ..	13,848.84	2,067.76	
University of Colorado, Boulder				
Development of Far Eastern studies (RF 44042)	10,000.00	2,888.31	

	APPROPRIATIONS PRIOR YEARS	1947	1947 PAYMENTS
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HUMANITIES — *Continued***Studies in Language and Foreign Culture — *Continued***

University of Leiden, Netherlands. Chinese Institute

Training of personnel and purchase of books (RF 46023).....

\$13,303.19 \$..... \$9,674.71

University of Pennsylvania, Philadelphia

Work in modern Indian languages and literatures (RF 47129).....

..... 60,000.00

University of Stockholm, Sweden

Development of Far Eastern studies in Sweden, Norway and Denmark (RF 46068).....

8,600.00 5,000.00

University of Washington, Seattle

Development of Far Eastern and Slavic studies (RF 44128).....

59,446.48 6,513.42

Far Eastern Institute

Research on the Far East (RF 47035).....

..... 100,000.00 10,000.00

Production of English translations of source materials on Chinese history (RF 47036).....

..... 50,000.00 12,500.00

Purchase of materials for Far Eastern and Slavic studies (RF 45111).....

50,000.00 25,015.00

Yale University, New Haven, Connecticut

Support of Far Eastern studies (RF 45110).....

89,062.50 34,312.50

Development of personnel in the field of Chinese studies (RF 47064).....

..... 25,000.00 6,850.00

American Studies

Abraham Lincoln Association, Springfield, Illinois

Preparing annotated edition of the complete writings of Abraham Lincoln (RF 47038).....

..... 30,000.00 5,000.00

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

Regional studies of the Southwest (RF 43096).....

24,589.04 9,237.98

Library of Congress, Washington, D. C.

American studies (RF 43095).....

54,000.00

Newberry Library, Chicago, Illinois Studies in midwestern culture (RF 44034, 47034).....	\$6,999.10	\$50,000.00	\$12,160.46
Northwestern University, Evanston, Illinois Teaching and field studies in American culture (RF 46067).....	20,000.00	5,000.00
Princeton University, New Jersey Study of program in American civilization (RF 45092).....	19,905.70	19,872.75
Texas State Historical Association, Austin Southwestern history study (RF 46119).....	15,000.00	6,000.00
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	Cr.1,065.26
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).....	65.18
University of Montana, Missoula Studies of the life and traditions of Montana (RF 44016).....	2,500.00	2,500.00
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)....	10,000.00	5,000.00
University of Saskatchewan, Saskatoon, Canada Studies in western history (RF 43037)	4,280.61	4,280.61
University of Utah, Salt Lake City Collection and use of historical source materials (RF 45022).....	3,000.00	3,000.00
University of Virginin, Charlottesville Preparation of a biography of Thomas Jefferson (RF 44033).....	3,803.85	2,877.64
University of Wisconsin, Madison Program in research and teaching in the materials of American civilization (RF 46011).....	50,000.00	12,500.00

		APPROPRIATIONS PRIOR YEARS	1947	1947 PAYMENTS
HUMANITIES — <i>Continued</i>				
American Studies — <i>Continued</i>				
Washington University, St. Louis, Missouri				
Studies in the history of western migrations in the United States (RF 45011)...	\$1,334.00	\$.....		\$1,334.00
Libraries				
American Library Association, Chicago, Illinois				
Development of a library school in São Paulo, Brazil (RF 43006).....	7,764.18		6,163.90
For work of its Board on International Relations (RF 44133, 47048).....	25,411.73	25,000.00		23,933.22
Interchanges of library personnel and materials by its International Relations Board (RF 46022).....	20,000.00		20,000.00
Selection and purchase for libraries in war areas of reference books published during the years 1939-1946 (RF 45038).....	30,000.00		15,000.00
Association of Special Libraries and Information Bureaux, London, England				
Preparation of a catalogue of periodicals in British libraries (RF 44004).....	38,729.67		3,665.20
Boone Library School, Wuchang, China				
General support (RF 44035).....	5,000.00		5,000.00
British Museum, London, England				
Establishment of a microfilm laboratory (RF 47087).....	56,000.00	
To enable the museum to offer to American libraries, at a discount, subscriptions to the new edition of its Catalogue of Printed Books (RF 30076).....	77,891.33		420.03
Massachusetts Institute of Technology, Cambridge				
For work of the Cooperative Committee on Library Building Plans (RF 46037) ..	2,500.00		2,500.00
University of Buenos Aires, Argentina				
Expenses of establishing a bibliographical center and an institute of library prac- tice (RF 42128).....	173.53
University of Oxford, England				
Development of the Bodleian and other university libraries (RF 31121).....	470,419.37		109,669.22

University Research Fund, University of São Paulo, Brazil					
Bibliographical information service (RF 45035)	822,872 76	\$...			\$5,854.67
Woodrow Wilson Foundation, New York City					
Cataloguing of a collection of documents of the League of Nations (RF 46094, 47086)	15,750.00	31,500.00			23,625.00
Drama, Film and Radio					
American Film Center, Inc., New York City					
General budget (RF 44092)	29,750.00			5,425.00
Columbia University, New York City					
Expenses of a training program for German radio personnel (RF 47130)		25,000.00			
National Theatre Conference, Cleveland, Ohio					
Support of activities and projects (RF 45028)	115,000.00			36,456.19
Play House Foundation, Cleveland, Ohio					
Construction and rehabilitation of the play house (RF 45083)	25,000.00			
Stevens Institute of Technology, Hoboken, New Jersey					
Study of electronic control of sound in the theater (RF 47110)	9,600.00			4,800.00
University of Nanking, Nanking, China					
Department of Educational Cinematography					
General support (RF 44043)	2,500.00			2,500.00
Other Subjects					
American Council of Learned Societies, Washington, D. C.					
Committee on the Protection of Cultural Treasures in War Areas (RF 44081)	1,800.00			
General support, planning and development (RF 41029, 46089, 47025)	228,272.38	65,000.00			62,500.00
Pacific Coast Committee					
Activities in the humanities (RF 46091)	31,500.00			7,000.00
Study of scholarly publishing in the United States by the Association of American University Presses (RF 47033)	30,000.00			10,000.00

	APPROPRIATIONS PRIOR YEARS	1947	1947 PAYMENTS
HUMANITIES — <i>Continued</i>			
Other Subjects — <i>Continued</i>			
American Philosophical Association, Philadelphia, Pennsylvania			
To enable colleges and universities to invite Latin American philosophers to the United States as visiting professors (RF 47024).....	\$.....	\$30,000.00	\$10,000.00
American School of Classical Studies, Athens, Greece			
Museum to house objects excavated in the Agora (RF 37089).....	138,354.94
Institute of International Education, New York City			
Maintenance and extension of its program for facilitating international exchange of persons (RF 47085).....	100,000.00	25,000.00
Kenyon College, Gambier, Ohio			
Expenses of a School of English Studies (RF 47098).....	40,000.00	6,000.00
Toward payment of writers whose work is published in the Kenyon Review (RF 47037).....	22,500.00	4,500.00
Special microfilming projects in England in connection with the program of the American Council of Learned Societies (RF 43064).....	2,318.03	174.90
University of Birmingham, England			
Awards in literature and for administration expenses (RF 45112).....	39,000.00	20,000.00
University of Bordeaux, France			
Development of its work in humanities (RF 47061).....	25,000.00
University of Lyon, France			
Development of its work in humanities (RF 47060).....	25,000.00
University of Oslo, Norway			
Development of work in the humanities (RF 46047).....	24,858.31	13,937.52
University of Toulouse, France			
Development of work in the humanities (RF 47062).....	18,000.00

Fellowships and Grants in Aid**Fellowships**

Administered by The Rockefeller Foundation (RF 44083, 44142, 45122, 46104, 46138, 47137).....	\$149,395.58	\$125,000.00	\$54,140.06
American Council of Learned Societies, Washington, D. C.			
Fellowships in the humanities (RF 46090).....	150,000.00	75,000.00
Special fellowship fund for postwar development of personnel in the United States (RF 44132, 45052, 46038).....	174,021.44	67,375.20
Grants in Aid (RF 43125, 44146, 45126, 46121, 46142, 47109, 47141).....	248,668.83	200,000.00	130,386.93

TOTAL — HUMANITIES.....**\$3,187,065.27 \$1,508,600.00 \$1,155,851.08****MISCELLANEOUS**

American Library Association, Chicago, Illinois

Committee on Aid to Libraries in War Areas

Purchase or microfilming of American scholarly journals for institutions, chiefly in Europe and Asia (RF 47015).....

China Medical Board, Inc., New York City

For its corporate purposes (RF 47001).....

Committee for Rehabilitation of Polish Science and Culture, Inc., New York City

Providing printed materials for libraries of Poland (RF 46024).....

European Rehabilitation (RF 47116).....

Exchange Fund (RF 46123).....

Expenses of a commission to study the problems of the development of medicine and public health in China (RF 46040).....

Fellowships, China

Foreign and local (RF 40044, 43021, 44038).....

Fund for miscellaneous expenses in connection with the United Nations organization (RF 46039).....

\$.....	\$9,000.00	\$9,000.00
.....	10,000,000.00	10,000,000.00
20,000.00	20,000.00
.....	200,000.00
18,068.80
5,500.70	37.78
7,481.99	951.18
4,666.08

	PRIOR YEARS	1947	1947 PAYMENTS
MISCELLANEOUS — <i>Continued</i>			
General Education Board, New York City			
Support (RF 46125, 47119).....	\$7,500,000.00	\$1,500,000.00	\$1,500,000.00
Grants in Aid. China (RF 41037, 42041, 43021, 44038).....	14,343.85	1,607.06
National Research Council, Washington, D. C.			
Expenses of a joint committee on personnel problems (RF 47044).....	20,000.00	10,000.00
TOTAL — MISCELLANEOUS.....	\$7,570,061.42	\$11,729,000.00	\$11,541,596.02
ADMINISTRATION AND SCIENTIFIC SERVICES			
Scientific Services			
Prior Years.....	\$35,521.85	\$.....	\$11,628.46
1947.....	725,340.00	104,926.00	789,532.29
1948.....	890,568.00
General Administration			
Prior Years.....	29,797.16	14,409.14
1947.....	272,648.00	35,178.00	282,813.09
1948.....	285,196.00
TOTAL — ADMINISTRATION.....	\$1,063,307.01	\$1,315,868.00	\$1,098,382.98
	\$30,727,897.32		
LESS			
Unused balances of Appropriations allowed to lapse			
The Rockefeller Foundation.....	\$548,075.90		
International Health Division.....	141,220.92	689,296.82
GRAND TOTALS.....	\$30,038,600.50	\$23,046,058.00	\$22,337,496.21

REFUNDS ON PRIOR YEAR CLOSED APPROPRIATIONS

American Library Association, Chicago, Illinois	(RF 44032)	\$1,951.74
Child Research Council of Denver, Colorado	(RF 44060)	1,005.00
College of Chinese Studies, Peiping, China	(RF 41007)	455.46
Columbia University, New York City	(RF 43026, 45074)	371.97
Cornell University, Ithaca, New York	(RF 46043)	518.94
Encyclopaedia of the Social Sciences, New York City	(RF 32114)	122.36
Geneva Research Center, Switzerland	(RF 38095)	712.22
Grants in Aid		
Humanities 1943	(RF 43032)	6,406.01
Natural sciences 1941	(RF 40139)	104.50
Natural sciences 1942	(RF 41118)	50.40
Library of Congress, Washington, D. C.	(RF 43061, 44096)	2,522.85
Massachusetts Institute of Technology, Cambridge, Massachusetts	(RF 45050)	1,062.89
Medical Research Council, London, England	(RF 36132)	343.03
Mississippi Coordinated School, Jackson	(IH 43011)	2,336.55
National Research Council, Washington, D. C.	(RF 43009)	6,535.81
Northwestern University, Evanston, Illinois	(RF 45079)	6,446.98
Oxford Nutrition Survey, Oxford, England (C-26)	(IH 42015)	22.26
Social Science Research Council, New York City	(RF 40089)	1,889.93
State University of Iowa, Iowa City	(RF 45076)	86.51
Tulane University, New Orleans, Louisiana	(RF 40051)	1,329.00
United States Navy Study of Infective Hepatitis (C-21)	(IH 42015)	62.17
University of Michigan, Ann Arbor	(IH 43016)	917.29
University of Minnesota, Minneapolis	(RF 43030)	589.51
University of Oxford, England	(RF 43074, 43112, 44088)	900.74
University of Tennessee, Knoxville	(RF 45055)	125.35
Washington University, St. Louis, Missouri	(RF 43039)	199.86
Western Reserve University, Cleveland, Ohio	(RF 44009)	81.33

TREASURER'S REPORT

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\$37,150.66

INTERNATIONAL HEALTH DIVISION

DESIGNATIONS DURING 1947, UNPAID BALANCES AS AT DECEMBER 31, 1946
OF PRIOR YEAR DESIGNATIONS, AND PAYMENTS THEREON DURING 1947

	PRIOR DESIGNATIONS	1947 DESIGNATIONS	1947 PAYMENTS
CONTROL AND INVESTIGATION OF SPECIFIC DISEASES AND DEFICIENCIES			
Diphtheria			
United States			
Johns Hopkins University, Baltimore, Maryland. School of Hygiene and Public Health			
1946-1948 (IH 46002).....	\$7,200.00	\$.....	\$7,195.45
Malaria			
Caribbean Area			
Trinidad and Tobago			
1945-1946 (IH 44019).....	4,274.38	2,279.16
Europe, Africa, and Near East			
Egypt			
1944-1945 (IH 44013).....	590.42	18.15
Netherlands			
Survey			
1947 (IH 46032).....	2,500.00
Control demonstration			
1947-1948 (IH 47003).....	12,500.00	12,500.00
Far East			
China			
1945-1947 (IH 44020, 46028).....	37,519.08	25,218.06
Mexico			
1943-1947 (IH 42058, 45050, 46039).....	5,256.12	6,600.00	4,878.66

South America						
British Guiana						
1946 (IH 45024)	\$1,131.63	\$..	\$1,064.11	
Colombia						
1946-1947 (IH 46011, 46040)	5,600.00	28,755.00	16,449.40	
Peru						
1946-1947 (IH 45055)	14,713.40	\$107.58	
Venezuela						
1946-1948 (IH 46021)	24,891.60	12,311.98	
United States						
Florida						
1944-1947 (IH 43027, 45023, 46037)	14,196.33	5,000.00	10,329.89	
University of Chicago, Illinois						
1944-1947 (IH 43051, 46038)	2,000.40	2,000.00	4,000.00	
Mental Hygiene						
United States						
Johns Hopkins University, Baltimore, Maryland. School of Hygiene and Public Health						
1945-1950 (IH 45006, 45047, 46029)	53,903.01	17,935.55	
Nutrition						
Canada						
University of Toronto, Ontario						
1944-1950 (IH 43019, 46042)	1,529.06	13,500.00	3,935.22	
Far East						
All India Institute of Hygiene, Calcutta						
1945-1946 (IH 44024)	1,656.28	1,448.31	
Mexico						
1944-1945 (IH 43020, 44057)	4,683.48	

	PRIOR DESIGNATIONS	1947 DESIGNATIONS	1947 PAYMENTS
CONTROL AND INVESTIGATION OF SPECIFIC DISEASES AND DEFICIENCIES — <i>Continued</i>			
Nutrition — <i>Continued</i>			
United States			
North Carolina			
1945-1947 (IH 44021, 45025).....	\$17,994.50	\$.....	\$10,754.40
Tennessee (In cooperation with Vanderbilt University, Nashville)			
1942-1947 (IH 43002).....	2,164.29	Cr. 1,129.42
Vanderbilt University, Nashville, Tennessee. School of Medicine			
1947-1950 (IH 46041).....	45,000.00	17,000.00
Respiratory Diseases			
Influenza Studies			
United States			
California			
1944-1947 (IH 44008, 44054, 45027).....	10,127.55	3,360.05
Respiratory Virus Research			
South America			
Argentina			
1945-1946 (IH 45007).....	1,511.43	1,018.73
Syphilis			
United States			
Johns Hopkins University, Baltimore, Maryland. School of Hygiene and Public Health			
1941-1949 (IH 40067-68, 45048-49).....	69,664.61	27,121.85
North Carolina			
1945-1948 (IH 44027, 45028, 46043).....	10,500.00	10,805.00	21,125.69

Tuberculosis					
United States					
Tennessee					
1945-1949 (IH 44028, 47012)	\$9,264.00	\$29,550.00	\$1,975.88		
Typhus Fever					
Far East					
China					
1944-1947 (IH 43022, 44029, 45029)	12,765.43	1,361.82		
Mexico. Louse Control Studies					
1945 (IH 44056)	583.35		
United States					
Florida					
1946-1947 (IH 44006, 47002)	1,000.00	20,000.00	18,961.91		
Yellow Fever					
Africa					
Central and East Africa					
1945-1947 (IH 44034, 45034, 46047)	36,677.44	24,625.00	48,567.60		
West Africa					
1946-1947 (IH 45035, 46048)	40,720.95	37,080.00	44,664.46		
Caribbean Area					
Panama					
1946-1947 (IH 45031)	1,874.55	645.89		
South America					
Brazil					
1946-1947 (IH 45033, 46045)	20,249.08	75,000.00	80,013.48		
British Guiana					
1946 (IH 45030)	1,830.52	1,576.74		

	PRIOR DESIGNATIONS	1947 DESIGNATIONS	1947 PAYMENTS
CONTROL AND INVESTIGATION OF SPECIFIC DISEASES AND DEFICIENCIES — <i>Continued</i>			
Yellow Fever — <i>Continued</i>			
South America — <i>Continued</i>			
Colombia			
Control and investigation			
1946-1947 (IH 45032, 46044)	\$37,802.97	\$22,440.00	\$44,496.79
Laboratory construction and equipment			
1945-1947 (IH 44058)	7,580.23	3,945.66
Ecuador			
1945-1947 (IH 44033, 46046)	8,087.11	17,000.00	15,342.73
Peru			
1943-1947 (IH 42038, 45056-57)	37,929.23	17,100.45
Other Studies			
Control of Insect Vectors with DDT			
Mexico			
1946-1947 (IH 45051, 46049)	5,570.11	8,800.00	4,208.30
Gastro-Intestinal Diseases Inquiry			
All-India Institute of Hygiene, Calcutta			
1946-1947 (IH 45037)	4,650.00	2,248.12
Rodent Ecology and Control			
Johns Hopkins University, Baltimore, Maryland. School of Hygiene and Public Health			
1945-1948 (IH 45005)	20,282.83		19,819.93
Rural Water Standards Study			
All-India Institute of Hygiene, Calcutta			
1945-1946 (IH 44036, 45036)	3,055.01		2,735.46

Taxonomic Center and Insectary Johns Hopkins University, Baltimore, Maryland. Department of Parasitology 1946-1948 (IH 46018, 47001)	83,400.00	\$15,650.00	\$18,536.48
LABORATORIES OF THE INTERNATIONAL HEALTH DIVISION			
Maintenance 1946-1947 (IH 45038, 46050)	19,380.80	148,500.00	131,882.19
Moving and Installation Expenses 1946-1947 (IH 49018, 45039)	165,561.41	142,949.59
STATE AND LOCAL HEALTH SERVICES			
State Health Services			
Canada			
Manitoba			
Division of Industrial Hygiene 1946-1947 (IH 46004)	3,250.00	2,083.37
Division of Maternal and Child Hygiene and Nutrition 1946-1949 (IH 46019)	12,000.00	3,467.99
New Brunswick			
Division of Nutrition 1945-1948 (IH 43003)	11,250.00	8,138.26
Division of Sanitary Engineering 1947-1951 (IH 46033)	15,375.00	4,928.79
Prince Edward Island			
Provincial Laboratory 1946-1951 (IH 38035)	15,300.00	4,522.39
Quebec			
Division of Health Education 1943-1945 (IH 42056)	2,330.40	1,353.66

PRIOR DESIGNATIONS	1947 DESIGNATIONS	1947 PAYMENTS
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STATE AND LOCAL HEALTH SERVICES — *Continued***State Health Services — *Continued*****Caribbean Area****Dominican Republic****General health survey**

1947-1949 (IH 46020).....

\$13,406.00 \$..... \$3,879.62

Public Health Laboratory

1946-1948 (IH 45053).....

29,846.30 8,951.31

Leeward and Windward Islands**Public Health Engineering Unit**

1946-1947 (IH 45042).....

8,242.33 3,356.82

Europe**Netherlands****Netherlands Applied Research Council, Sanitary Engineering Section**

1948 (IH 47063).....

..... 3,000.00

Norway**Statistical Division**

1947-1949 (IH 46027).....

6,225.00 4,082.57

Mexico**Office of Special Sanitary Service (Cooperative Central Office)**

1946-1947 (IH 45041, 46052).....

820.10 4,720.00 2,871.95

South America**Bolivia****Division of Endemic Diseases**

1943-1947 (IH 42043).....

69,960.14 28,486.98

Chile				
Tuberculosis survey 1945-1948 (IH 45009).....	\$44,263.75	\$.....	\$5,632.12	
Ecuador				
National Institute of Hygiene 1941-1946 (IH 41025, 43006).....	6,190.81	
Peru				
National Institute of Hygiene 1945-1949 (IH 44015, 47025).....	128,973.79	25,245.00	44,456.69	
Division of Study and Development of Local Health Services 1946-1950 (IH 45054, 47027).....	17,893.59	3,795.00	3,049.72	
Department of Selection and Training of Personnel for Ministry of Health 1947-1951 (IH 46034, 47026).....	30,690.00	3,567.82	
United States				
California				
Virus Laboratory, Research and diagnosis 1946-1949 (IH 45040, 46051).....	16,076.92	58,000.00	45,000.00	
Mississippi				
Coordinated School-Health-Nutrition Service 1946-1948 (IH 46003).....	23,000.00	13,811.81	
New York City				
Department of Health, Statistical Service 1945-1949 (IH 44014).....	25,206.50	5,776.38	
North Carolina				
Public Health Education and School Health Service 1944-1948 (IH 43014).....	12,346.30	4,157.35	
Pan American Sanitary Bureau				
Salary and travel of staff nurse 1947-1948 (IH 47014).....	8,500.00	4,250.00	

PRIOR DESIGNATIONS	1947 DESIGNATIONS	1947 PAYMENTS
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STATE AND LOCAL HEALTH SERVICES — *Continued***Local Health Departments****Canada****British Columbia**

1936-1952 (IH 36021, 38024).....	\$15,270.18	\$.....	\$326.38	THE ROCKEFELLER FOUNDATION
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Manitoba

1944-47 (IH 44003).....	4,970.92	2,728.25	
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Nova Scotia

1943-47 (IH 41077, 42055).....	20,083.84	16,469.59	
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Europe**Finland**

1940-45 (IH 40012, 40079).....	18,748.85	10,000.00	
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Far East**India, Bengal**

1945-46 (IH 44046).....	5,180.88	2,158.60	
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Mexico

1944-49 (IH 43052, 44042).....	36,732.56	8,227.88	
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South America**Bolivia**

1945-49 (IH 44044).....	35,552.99	12,906.07	
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Brazil

1945-46 (IH 45008, 46006).....	5,715.02	3,956.26	
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Chile

1942-1948 (IH 42013-14, 46035).....	22,904.12	12,000.00	4,040.61	
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Peru

1945-1949 (IH 44045, 46030, 47024).....	134,072.16	23,365.00	42,248.72	
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Survey of an area for possible regional planning as basis for public health services 1948 (IH 47065).....	\$.....	\$60,000.00	\$.....
MEDICAL CARE			
American Public Health Association, Washington, D. C. 1947 (IH 46053).....	25,000.00	25,000.00
Group Health Cooperative, Inc., New York 1946-1947 (IH 46009).....	2,665.00	2,665.00
Health Insurance Plan of Greater New York, New York City 1947-1948 (IH 47013).....	138,000.00	138,000.00
Study of Medical Care Programs in the United Kingdom and Europe 1946 (IH 46010).....	2,486.25	1,472.47
University of California, Berkeley. Department of Public Health and Medical Ad- ministration 1947-1948 (IH 47010).....	26,760.00	26,760.00
PUBLIC HEALTH EDUCATION			
Schools and Institutes of Hygiene and Public Health			
Canada			
University of Toronto, Ontario 1944-1949 (IH 42053, 43018, 46005).....	35,842.23	10,823.81
Europe			
Netherlands			
Institute of Preventive Medicine, Leiden 1948 (IH 47064).....	7,500.00
Sweden			
State Institute of Public Health, Stockholm 1947-1949 (IH 46036).....	10,000.00
Turkey			
School of Hygiene, Ankara 1940 (IH 39059).....	1,680.61

PUBLIC HEALTH EDUCATION — *Continued***Schools and Institutes of Hygiene and Public Health — *Continued***

		PRIOR DESIGNATIONS	1947 DESIGNATIONS	1947 PAYMENTS
Far East				
China				
National Institute of Health				
1944-1947 (IH 43043, 45043, 46054).....	\$9,301.47	\$17,000.00	\$18,070.44	
South America				
Chile				
School of Public Health, Santiago				
1944-1948 (IH 43055).....	35,356.16	8,559.00	
United States				
Harvard University, Cambridge, Massachusetts				
School of Public Health				
Department of Nutrition				
1942-1947 (IH 41070).....	19,422.41	19,422.41	
Department of Sanitary Engineering				
1944-1947 (IH 43009).....	3,820.13	3,820.01	
Johns Hopkins University, Baltimore, Maryland. School of Hygiene and Public Health				
Developmental aid				
1944-1949 (IH 43049).....	94,616.88	42,600.00	
Field Training and Study Area				
1944-1949 (IH 43050, 47009).....	25,830.44	10,000.00	22,035.04	
Schools of Nursing				
Europe				
Finland				
Helsinki College of Nursing				
1948-1950 (IH 47062).....	28,000.00	

Portugal				
School of Nursing, Lisbon				
1945-1947 (IH 44016).....	83,250.02	\$.....	\$.....	
Far East				
Ceylon and India				
Developmental aid to nursing education				
1946 (IH 45058).....	3,018.97	1,299.78	
South America				
Brazil				
University of São Paulo				
1941-1945 (IH 41084).....	6,224.99	2,427.96	
Colombia				
National Superior School of Nursing, Bogota				
1943-1947 (IH 42061).....	38,263.81	18,091.71	
Ecuador				
School of Nursing, Quito				
1943-1950 (IH 42065, 47023).....	5,673.16	10,000.00	3,282.31	
Uruguay				
University Nursing School, Montevideo				
1945-1947 (IH 44061).....	5,700.00	
Venezuela				
National School of Nursing, Caracas				
1942-1950 (IH 41023, 46022).....	24,329.75	399.89	
Fellowships, Travel of Government Health Officials and Teachers of Public Health, and Training of Health Workers				
1941-1947 (IH 41021, 43045, 44048, 45044, 46055).....	130,910.55	200,000.00	178,995.58	

	PRIOR DESIGNATIONS	1947 DESIGNATIONS	1947 PAYMENTS
PUBLIC HEALTH EDUCATION — <i>Continued</i>			
Other Training			
Caribbean Area			
British West Indies Training Station, Jamaica			
1945-1949 (IH 44050, 47022).....	\$18,998.91	\$10,175.00	\$5,154.21
Mexico			
Training Station, Tacuba			
1945-1947 (IH 44049).....	2,495.88	1,622.50
Training of health personnel in the states			
1943-1948 (IH 43052, 45052).....	17,453.87	5,357.90
South America			
Brazil			
Araraquara Health Training Center			
1948-1950 (IH 47061).....	30,000.00
FIELD SERVICE			
Field Staff			
1946-1947 (IH 44007, 45045, 46056)			
Salaries.....	12,738.23	468,000.00	471,007.73
Commutation.....	14,334.10	62,000.00	67,037.73
Travel.....	31,009.62	222,000.00	234,568.62
Medical Examinations.....	169.06	1,000.00	379.60
Field Equipment and Supplies.....	2,270.58	3,000.00	3,709.25
Pamphlets and Charts.....	5,039.29	9,000.00	6,527.24
Express, Freight and Exchange.....	727.79	1,000.00	Cr. 1,121.21
Insurance and Retirement.....	25,811.09	58,000.00	43,401.11
Bonding.....	140.00	2,000.00	1,555.45

Field Offices

1945-1947 (IH 45019, 45046, 46057)				
Africa and Asia Minor (Cairo)	\$10,000.00	\$10,000.00	\$1,837.57	
Canada (Toronto)	1,886.38	3,500.00	2,371.85	
Caribbean Region				
Central Office (Miami)	1,618.61	9,050.00	8,342.04	
Dominican Republic (Ciudad Trujillo)	847.52	4,840.00	3,219.34	
Far East (Shanghai)	6,125.20	13,000.00	12,355.09	
Mexico (Mexico City)	231.24	*	213.34	
South America				
Argentina (Buenos Aires)	1,662.59	14,580.00	12,185.79	
Bolivia (Cochabamba)	4,000.00	6,000.00	6,583.30	
Brazil (Rio de Janeiro)	5,646.78	10,000.00	5,707.80	
Chile (Santiago)	2,586.43	6,000.00	3,252.64	
Peru (Lima)	3,439.52	12,475.00	10,462.97	
Europe (London)		1,500.00	...	
Miscellaneous	400.00	500.00	...	
Director's Fund for Budget Revisions (IH 41027, 44006)	5,451.93	
Director's Fund for Miscellaneous Expenses (IH 43001, 46007, 46031)	3,564.29	...	826.54	
Exchange Fund (IH 33077)	21,521.44	
TOTAL — INTERNATIONAL HEALTH DIVISION	\$2,123,749.22	\$2,199,875.00†	\$2,544,128.07	

* Included under State Health Services.

† The Foundation appropriated \$2,200,000 for the work of the International Health Division during 1947, the undesignated balance of \$125.00 being allowed to lapse as of December 31, 1947.

THE ROCKEFELLER FOUNDATION HEALTH COMMISSION
DESIGNATIONS DURING 1947, UNPAID BALANCES AS AT DECEMBER 31, 1946
OF PRIOR YEAR DESIGNATIONS, AND PAYMENTS THEREON DURING 1947

	PRIOR DESIGNATIONS	1947 DESIGNATIONS	1947 PAYMENTS
STUDY AND CONTROL WORK			
Malaria			
Europe, Africa, and the Near East			
Corsica			
1947-1948 (HC 47019).....	\$.....	\$3,500.00	\$2,419.50
Egypt, Government Gambiae Eradication Service			
1946-1947 (HC 46059).....	5,000.00
Italian-Sardinian anopheles eradication program			
1947-1948 (C-27, HC 45020, 47004, 47021, 47028).....	49,171.33	165,000.00	51,257.66
South America			
Peru, Malaria drug study			
1945-1946 (HC 45004).....	5,254.59	Cr. 530.01
Yellow Fever Vaccine			
1945-1947 (HC 45016).....	20,734.38	130.82
STATE AND LOCAL HEALTH SERVICES			
State Health Services			
Europe, Norwegian Ministry of Social Welfare, Salary increases in Health Department			
1946-1951 (HC 46014).....	22,500.00	7,500.00

Local Health Departments							
Far East							
China							
Kiang Ning Hsien Health Unit							
1947-1948 (HC 47011)					\$.....	\$15,000.00	\$434.80
Peiping First Health Station							
1946 (HC 46017)						15,000.00	15,000.00
PUBLIC HEALTH EDUCATION							
Schools and Institutes of Hygiene and Public Health							
Europe							
Institute of Hygiene, Zagreb, Yugoslavia. Equipment and maintenance							
1946-1950 (HC 46016)						46,000.00	19,800.74
Institute and School of Hygiene, Warsaw, Poland. Equipment and supplies							
1946-1948 (HC 46025)						50,250.00	26,644.63
London School of Hygiene and Tropical Medicine							
Purchase of laboratory centrifuges							
1947-1948 (HC 47017)							2,000.00
Rehabilitation of teaching and public health personnel							
1945-1950 (HC 45002)						91,862.24	14,121.98
State Institute of Public Health, Oslo, Norway							
Equipment and supplies							
1945-1948 (HC 45022)						8,000.00	4,258.79
State Institute of Public Health, Utrecht, Netherlands							
Equipment and supplies							
1946-1947 (HC 46013)						6,324.70	2,578.46
Microfilm readers for institutes of hygiene in Europe							
1946-1948 (HC 46024)						2,500.00	2,168.28
Far East							
China							
National Institute of Health. Equipment and supplies							
1947-1948 (HC 47005)						38,000.00	9,262.26

	PRIOR DESIGNATIONS	1947 DESIGNATIONS	1947 PAYMENTS
PUBLIC HEALTH EDUCATION — <i>Continued</i>			
Schools and Institutes of Hygiene and Public Health — <i>Continued</i>			
Far East — <i>Continued</i>			
Philippines			
University of the Philippines, Manila. Equipment and supplies 1947-1948 (HC 47006).....	\$.....	\$50,000.00	\$20,000.00
Schools of Nursing			
Europe			
Ministry of Social Welfare, Norway. Postgraduate course of study in public health and development of practice fields			
1946-1951 (HC 46015).....	13,500.00	4,500.00
School of Nursing, Zagreb, Yugoslavia. Emergency aid 1946-1948 (HC 46026).....	20,000.00	17,395.26
University of Cracow School of Nursing, Poland. Emergency aid 1947-1948 (HC 47020).....	12,000.00	4,516.51
Fellowships, Travel and Training Grants			
1945-1948 (HC 45013, 46001, 46058, 47008, 47016, 47030).....	272,947.44	119,029.99	225,447.08
MISCELLANEOUS			
Fourth International Congresses on Tropical Medicine and Malaria 1947-1948 (HC 47015).....	10,000.00	10,000.00
International Council of Nurses. Travel expenses of European and Asiatic nurses attending Ninth Congress of Nurses 1947 (HC 47007).....	5,000.00	5,000.00
Journals, periodicals and books for public health institutions and schools in need of assistance as a result of the war 1945-1948 (HC 45012).....	11,502.31	4,296.87

Ministry of Public Health, France				
Centre de Recherches de L'Hôpital Foch, Paris. Alterations and equipment				
1945-1946 (HC 45011).....	\$7,217.92	\$...	\$634.00
Pasteur Institute at Dakar, French West Africa				
Materials for repair of refrigeration plant				
1945 (HC 45015)	223.92	104.68
Pasteur Institute at Paris, France. Equipment				
1947-1948 (HC 47018)	2,500.00
FIELD SERVICE				
Staff Salaries and Travel				
1946 (HC 45021)	416.13
Offices in Paris and London				
1945 (HC 45014)	469.63	469.63
1946 (HC 46023)	3,618.48	2,981.07
Fund for Commitment by Director and Comptroller (C-11)....	9,718.35	1,581.15
	<hr/>	<hr/>	<hr/>	<hr/>
Unexpended balances of designations allowed to lapse.....	\$662,211.42			
	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL — THE ROCKEFELLER FOUNDATION HEALTH COMMISSION.....	\$622,185.80	\$422,029.99	\$451,974.16
	<hr/>	<hr/>	<hr/>	<hr/>

SUMMARY

Designations			
Prior Year.....	\$622,185.80		
1947.....	422,029.99		
	<hr/>	<hr/>	<hr/>
	\$1,044,215.79		
	<hr/>	<hr/>	<hr/>

TRANSACTIONS RELATING TO INVESTED FUNDS

PURCHASED		THE ROCKEFELLER FOUNDATION
\$110,000	American Telephone & Telegraph Co. 10 year Conv. Deb. 2½s/57 @ par by the surrender of 6,600 rights which were received on account of the ownership of American Telephone & Telegraph Co. Cap. Stock. The rights were valued at the opening price on November 10, 1947 @ \$1.6875 each, or \$11,137.50, and this amount was added to the value of the Debentures resulting in a price of 110.125.....	\$121,137.50
4,200,000	USA Treasury Bonds, 2½s/12/15/59-62 @ 100.516.....	4,221,656.25
10,000	Shares The Atlantic Refining Co. 3.75% Cum. Pfd. Stock, Ser. B, @ \$100.00 per share.....	1,000,000.00
5,000	Shares Connecticut Light & Power Co. Cum. Pfd. Stock (No par) @ \$54.26 per share.....	271,300.00
21,194	Shares Consolidated Natural Gas Co. Cap. Stock (Par \$15) @ \$37.50 per share (by subscription).....	794,775.00
4,000	Shares Philip Morris & Co., Ltd. Inc. 4% Cum. Pfd. Stock @ \$105.35 per share.....	421,400.00
97.60	Shares The Standard Oil Co. (Ohio) Com. Stock (Par \$10) @ \$24.693 per share.....	2,410.02
5,000	Shares Tennessee Gas Transmission Co. 4.25% Cum. Pfd. Stock @ \$96.6745 per share.....	483,372.50
1,500	Shares United States Rubber Co. 8% Non-cum. 1st Pfd. Stock @ \$150.892 per share.....	226,337.50
		<hr/> \$7,542,388.77
RECEIVED THROUGH EXCHANGE		
	USA Treasury Certificates of Indebtedness	
\$3,000,000	Ser. A, 7/8s/1/1/48, for \$3,000,000 Ser. A, 7/8s/1/1/47.....	\$3,000,000.00
1,230,000	Ser. B, 7/8s/2/1/48, for \$1,230,000 Ser. B, 7/8s/2/1/47.....	1,230,000.00
1,656,000	Ser. C, 7/8s/3/1/48, for \$1,656,000 Ser. C, 7/8s/3/1/47.....	1,656,000.00
1,527,000	Ser. D, 7/8s/4/1/48, for \$1,527,000 Ser. D, 7/8s/4/1/47.....	1,527,000.00
	AND	
7,000,000	USA Treasury Notes 1s/10/1/48, for \$5,000,000 USA Treasury Notes 1½s/9/15/47 and \$2,000,000 USA Treasury Notes 1¾s/9/15/47.....	7,000,000.00
		<hr/> \$14,413,000.00

RIGHTS RECEIVED

6,675	American Telephone & Telegraph Co. rights received on account of the ownership of 6,675 shares American Telephone & Telegraph Co. Cap. Stock and entitling the owner to subscribe at par to 10 year 2½% Conv. Deb., due Dec. 15, 1957, on the basis of \$100 principal amount of Debentures for each 6 shares owned. These rights were taken into the books at the opening price on November 10, 1947 @ \$1.6875 each and the value was used to reduce the ledger value of the Capital Stock.....	\$11,264.06
105,970	Consolidated Natural Gas Co. rights received on account of the ownership of 105,970 shares Consolidated Natural Gas Co. Cap. Stock (Par \$15) and entitling the owner to subscribe at \$37.50 per share to additional shares of Capital Stock on the basis of one share for each five shares owned. These rights were taken into the books at no value.....
346,000	Standard Oil Co. (Ohio) rights received on account of the ownership of 346,000 shares Standard Oil Co. (Ohio) Com. Stock (Par \$10). Taken into the books at the opening sale price October 23, 1947 @ \$0.75 each and the value used to reduce the ledger value of the Common Stock.....	259,500.00
72	The Texas Co. rights received on account of the ownership of 72 shares The Texas Co. Cap. Stock (Par \$25). Taken into the books at \$1.9270833 each and the value used to reduce the ledger value of the Capital Stock.....	138.75
		<hr/> \$270,902.81

STOCK DISTRIBUTION RECEIVED

68,351 1/2 Shares Central & South West Corp. Com. Stock (Par \$5), taken into the books at the opening price June 16, 1947, @ \$9.75 per share. This stock was distributed by The Middle West Corp. June 14, 1947 to holders of record May 23, 1947 on the basis of one share of Central & South West Corp. stock for each share of The Middle West Corp. stock owned. The Middle West Corp. stock is carried on the books @ \$7.75 per share.

\$666,422.25

TRANSACTIONS RELATING TO INVESTED FUNDS--Continued

LEGACY FROM ESTATE OF WILLIAM O. WAKENIGHT		
5 Shares American Shipbuilding Co. Com. Stock (No par) @ \$36.50 per share.....	..	\$182.50
1 Share Barnsdall Oil Co. Com. Stock (Par \$5) @ \$16.00 per share.....	..	16.00
29 Shares Creole Petroleum Corp. Com. Stock (Par \$5) @ \$26.75 per share.....	..	775.75
37 Shares Continental Oil Co. (Delaware) Cap. Stock (Par \$5) @ \$30.625 per share.....	..	1,133.13
15 Shares General Mills, Inc. Com. Stock (No par) @ \$39.50 per share.....	..	392.50
10 Shares General Motors Corp. Com. Stock (Par \$10) @ \$63.9375 per share.....	..	639.38
2 Shares Interstate Natural Gas Co., Inc. Cap. Stock (No par) @ \$32.00 per share.....	..	64.00
25 Shares Pantepet Oil Co. of Venezuela (American shares) @ \$8.875 per share.....	..	221.88
5 Shares Procter & Gamble Co. Com. Stock (No par) @ \$57.188 per share.....	..	285.94
26 Shares Pittsburg Oil & Gas Co. Com. Stock @ \$1.50 per share.....	..	39.00
18 Shares Royal Dutch Co. for the working of petroleum wells in Netherlands-India @ \$36.00 per share		648.00
50 Shares Southern Pipe Line Co. Cap. Stock (Par \$10) @ \$9.00 per share	450.00
72 Shares The Texas Co. Cap. Stock (Par \$25) @ \$48.50 per share	3,492.00
10 Shares Texon Oil & Land Co. Cap. Stock (Par \$2) @ \$6.50 per share	65.00
11 Shares Transcontinental & Western Air, Inc. Com. Stock (Par \$5) @ \$25.875 per share	284.63
		<u>\$8,889.71</u>

ADDITIONS TO LEDGER VALUE

Interest increment on USA Savings Bonds, Ser. F (12 year appreciation bonds)

867,500 (Maturity value) due May 1, 1953.....	..	\$1,755.00
67,500 (Maturity value) due June 1, 1954.....	..	1,552.50
67,500 (Maturity value) due July 1, 1954.....	..	1,417.50
135,000 (Maturity value) due Jan. 1, 1955	2,565.00
		<u>\$7,290.00</u>
		<u>\$22,908,893.54</u>

SOLD

		TOTAL PROCEEDS	LEDGER VALUE
\$29,000	Anglo-Chilean Nitrate Corp. S.F. Income Deb. 4½s/67 @ 98.698	\$28,622 42	\$25,375 00
1,000,000	Canada, Dominion of, 2nd Victory Loan 3s/52-54 @ 106.063 or Can. \$1,060,637.15 converted @ 95.0187	1,007,804.00	922,446 39
1,000,000	Canada, Dominion of, Conversion Loan 4½s/48-58 @ 104.719 or Can. \$1,047,189.69 converted @ 95.653	1,001,670 00	983,094 91
1,305,000	Chicago City & Connecting Ry. Coll. Trust 5s/27 @ 23.006	300,225 00	678,600 00
375,000	Chicago Rys. Co. 1st Mtg. 5s/27 (C/D) @ 98.382 (originally \$500,000 which were 25% paid)	368,932.85	360,000.00
20,000	Copenhagen, City of, (Denmark) External 5s/52 @ 94.248	18,849 60	16,400.00
500,000	Northwestern Elevated R.R. 1st Mtg. 5s/41 @ 39.011	195,056.25	350,000.00
4,000,000	USA Treasury Bonds, 2½s/3/15/56-58 @ 105.344	4,213,750.00	4,249,733.50
700,000	USA Treasury Certificates of Indebtedness, Ser. B. 7/8s/2/1/47 @ 100.0078	700,054.85	700,000.00
1,350,000	USA Treasury Notes, Ser. A, 1½s/9/15/47 @ 100.0886	1,351,196.19	1,350,767.73
10,000	Western Union Telegraph Co. 5s/60 @ 83.698	8,369.81	10,750.00
5	Shares American Shipbuilding Co. Com. Stock (No par) @ \$36.898 per share	184.49	182 50
75	Rights American Telephone & Telegraph Co. @ \$1.2336 each	92.52	126.56
1	Share Barnsdall Oil Co. Com. Stock (Par \$5) @ \$27.27 per share	27.27	16.00
29	Shares Creole Petroleum Corp. Com. Stock (Par \$5) @ \$33.371 per share	967.77	775.75
12,000	Shares The Eureka Pipe Line Co. Cap. Stock (Par \$10) @ \$27.952 per share	335,424 00	540,000.00
15	Shares General Mills, Inc., Com. Stock (No par) @ \$47.274 per share	709 11	592.50
10	Shares General Motors Corp. Com. Stock (Par \$10) @ \$55.227 per share	552 27	639 38
1,275	Shares International Harvester Co. 7% Cum. Pfd. Stock @ \$182.371 per share	232,523 66	146,625.00
25	Shares Pantepec Oil Co. of Venezuela (American shares) @ \$8.9028 per share	222.57	221.88
26	Shares Pittsburg Oil & Gas Co. Com. Stock @ \$1.289 per share	33.52	39.00

TREASURER'S REPORT

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TRANSACTIONS RELATING TO INVESTED FUNDS—Continued

		TOTAL PROCREDS	LEDGER VALUE	
5	Shares Procter & Gamble Co. Com. Stock (No par) @ \$68.574 per share.....	\$342.87	\$285.94	
18	Shares Royal Dutch Co. for the working of petroleum wells in Netherlands-India @ \$22,024 per share.....	396.44	648.00	
24,350	Shares Southern Pipe Line Co. Cap. Stock (Par \$1) @ \$3.4893 per share.....	84,964.46	30,575.00	
7,960	Shares South West Penn Pipe Lines Cap. Stock (Par \$10) @ \$28.202 per share.....	224,487.92	272,866.68	
346,000	Rights Standard Oil Co. (Ohio) @ \$0.5969 each.....	206,553.13	259,500.00	
72	Rights The Texas Co. @ \$1.927 each.....	138.75	138.75	
72	Shares The Texas Co. Cap. Stock (Par \$25) @ \$55.18 per share.....	3,972.97	3,353.25	
10	Shares Texon Oil & Land Co. Cap. Stock (Par \$2) @ \$12.339 per share.....	123.39	65.00	
11	Shares Transcontinental & Western Air, Inc. Com. Stock (Par \$5) @ \$16.385 per share..	180.24	284.63	
100	Shares Union Pacific R.R. Com. Stock @ \$128.797 per share.....	12,879.74	12,362.50	
		<hr/>	<hr/>	
		\$10,299,308.06	\$10,916,465.85	

REDEEMED OR PAID AT MATURITY

\$1,000	Anglo-Chilean Nitrate Corp. S.F. Income Deb. 4½s/67 redeemed @ par.....	\$1,000.00	\$875.00	
£3,000	Compania Salitrera Anglo Chilean, Inc. 1st Mtg. 4½s/61 redeemed @ 103 or £3,090 converted @ \$4.026875	12,443.04	12,120.00	
\$270,000	USA Treasury Certificates of Indebtedness Ser. B, 7/8s/2/1/47 paid at maturity @ par..	270,000.00	270,000.00	
644,000	USA Treasury Certificates of Indebtedness Ser. C, 7/8s/3/1/47 paid at maturity @ par..	644,000.00	644,000.00	
1,653,000	USA Treasury Certificates of Indebtedness Ser. D, 7/8s/4/1/47 paid at maturity @ par..	1,653,000.00	1,653,000.00	
		<hr/>	<hr/>	
		\$2,580,443.04	\$2,579,995.00	

SURRENDERED THROUGH EXCHANGE

USA Treasury Certificates of Indebtedness

\$3,000,000 Ser. A, 7/8s/1/1/47, for \$3,000,000 Ser. A, 7/8s/1/1/48.....	\$3,000,000.00	\$3,000,000.00
1,230,000 Ser. B, 7/8s/2/1/47, for \$1,230,000 Ser. B, 7/8s/2/1/48.....	1,230,000.00	1,230,000.00
1,656,000 Ser. C, 7/8s/3/1/47, for \$1,656,000 Ser. C, 7/8s/3/1/48.....	1,656,000.00	1,656,000.00
1,527,000 Ser. D, 7/8s/4/1/47, for \$1,527,000 Ser. D, 7/8s/4/1/48.....	1,527,000.00	1,527,000.00

AND

5,000,000 USA Treasury Notes, Ser. A, 1 1/2s/9/15/47, for \$5,000,000 USA Treasury Notes 1s/10/1/48.....	5,000,000.00	5,000,000.00
2,000,000 USA Treasury Notes, Ser. C, 1 1/4s/9/15/47, for \$2,000,000 USA Treasury Notes 1s/10/1/48.....	2,000,000.00	2,000,000.00

\$14,413,000.00	\$14,413,000.00
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PAYMENT OF APPROPRIATION RF-47001 TO CHINA MEDICAL BOARD, INC.

\$3,000,000 USA Treasury Certificates of Indebtedness, Ser. A, 7/8s/1/1/48 @ 100.0056.....	\$3,000,169.68	\$3,000,000.00
1,230,000 USA Treasury Certificates of Indebtedness, Ser. B, 7/8s/2/1/48 @ 100.0069.....	1,230,085.84	1,230,000.00
656,000 USA Treasury Certificates of Indebtedness, Ser. C, 7/8s/3/1/48 @ 100.00828.....	656,054.32	656,000.00
5,000,000 USA Treasury Notes, Ser. C, 1 1/4s/9/15/47 @ 100.088.....	5,004,401.70	5,000,000.00

\$9,890,711.54	\$9,886,000.00
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Amount appropriated to China Medical Board, Inc.....	\$10,000,000.00
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Payment of securities, as above.....	39,890,711.54
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Accrued interest on above securities.....	37,695.80
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Cash.....	71,592.66
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\$10,000,000.00

TRANSACTIONS RELATING TO INVESTED FUNDS -- *Concluded*

	TOTAL PROCEEDS	LEDGER VALUE
REDUCTION IN LEDGER VALUE		
Value of 6,675 American Telephone & Telegraph Co. rights, received on account of the ownership of 6,675 shares American Telephone & Telegraph Co. Cap. Stock, taken into the books at the opening price November 10, 1947 @ \$1.6875 each and the value used to reduce the ledger value of the Capital Stock	\$11,264.06	\$11,264.06
Capital distribution of \$5.00 per share received on account of the ownership of 24,350 shares Southern Pipe Line Co. Cap. Stock (Par \$10). A capital stock reduction was effected and the \$10 par certificates were exchanged for \$1 par certificates	121,750.00	121,750.00
Value of 346,000 Standard Oil Co. (Ohio) rights, received on account of the ownership of 346,000 Standard Oil Co. (Ohio) Com. Stock (Par \$10), taken into the books at the opening price October 23, 1947 and the value used to reduce the ledger value of the Common Stock	259,500.00	259,500.00
Value of 72 The Texas Co. rights, received on account of the ownership of 72 shares The Texas Co. Cap. Stock (Par \$25), taken into the books at the sale price and the value used to reduce the ledger value of the Capital Stock	138.75	138.75
	<hr/> \$392,652.81	<hr/> \$392,652.81
RIGHTS SURRENDERED UPON SUBSCRIPTION		
Value of 6,600 American Telephone & Telegraph Co. rights @ \$1.6875 each, surrendered upon subscription to \$110,000 American Telephone & Telegraph Co. 10 year Conv. Deb. 2 3/4s/57.....	\$11,137.50	\$11,137.50
	<hr/> \$37,587,252.95	<hr/> \$38,199,251.16

AMORTIZATION OF PREMIUM PAID ON PURCHASE OF SECURITIES

\$4,000,000	USA Treasury Bonds, 2½s/56-58	827,766.50
2,000,000	USA Treasury Bonds, 2½s/59-62	1,011.84
700,000	USA Treasury Certificates of Indebtedness, 7/8s/2/1/47 ..	128.78
1,500,000	USA Treasury Certificates of Indebtedness, 7/8s/2/1/47 ..	275.98
2,300,000	USA Treasury Certificates of Indebtedness, 7/8s/3/1/47 ..	473.80
3,180,000	USA Treasury Certificates of Indebtedness, 7/8s/4/1/47 ..	542.15
6,350,000	USA Treasury Notes, Ser. A, 1½s/47	8,000.53
		<hr/>
		\$38,199.58
		<hr/>

RECONCILIATION

Ledger value of securities, December 31, 1946	\$167,609,145.93
Purchased	\$ 7,542,388.77
Received through exchange	14,413,000.00
Rights received	270,902.81
Stock distribution received	666,422.25
Legacy from Estate of William O. Wakenight	8,889.71
Additions to ledger value	7,290.00
	<hr/>
	\$190,518,039.47
Sold	\$10,916,465.85
Redeemed or paid at maturity	2,579,995.00
Surrendered through exchange	14,413,000.00
Payment of appropriation	9,886,000.00
Reduction in ledger value	392,652.81
Rights surrendered upon subscription	11,137.50
Amortization	38,199.58
	<hr/>
Ledger value of securities, December 31, 1947	\$152,280,588.73
	<hr/>

SCHEDULE OF SECURITIES ON DECEMBER 31, 1947

BONDS

NAME	PAR	LEDGER VALUE		MARKET VALUE	
		PRICE	TOTAL	PRICE	TOTAL
American Telephone & Telegraph Co. 10 year Conv. Deb. 2½s, Dec. 15, 1957.....	\$110,000	110.125	\$121,137.50	107.875	\$118,662.50
American Telephone & Telegraph Co. 15 year Conv. Deb. 2½s, Dec. 15, 1961.....	110,000	111.28	122,408.00	102.125	112,337.50
Compania Salitrera Anglo Chilean Inc. 1st Mtg. Deb. 4½s, Jan. 1, 1961.....	£2,000 @ \$4 or \$8,000	101.	8,080.00	103.	8,240.00
Imperial Chinese Government Hu Kuang Rys. S. F. Loan of 1911 5s, June 15, 1975.....	£189,000		321,300.00		70,875.00
Morris & Essex R.R. 1st Ref. 3½s, Dec. 1, 2000.....	\$39,000	82.75	32,272.50	69.5	27,105.00
Standard Oil Co. (New Jersey) 25 year Deb. 2½s, May 15, 1971.....	8,499,000	98.	8,329,020.00	93.5	7,946,565.00
United States of America Treasury Certificates of Indebted- ness ½%:					
Series C, due Mar. 1, 1948.....	1,000,000	100.	1,000,000.00	100.	1,000,000.00
Series D, due Apr. 1, 1948.....	1,527,000	100.	1,527,000.00	100.006	1,527,091.62
United States of America Treasury Bonds:					
Int. Dated Due					
2% — May 15, 1942 — Sept. 15, 1949-51.....	380,000	100.	380,000.00	101.15625	384,393.75
2% — Apr. 15, 1943 — Sept. 15, 1950-52.....	6,000,000	100.	6,000,000.00	101.40625	6,084,375.00
2% — Sept. 15, 1943 — Sept. 15, 1951-53.....	5,000,000	100.	5,000,000.00	101.375	5,068,750.00
2% — June 26, 1944 — June 15, 1952-54.....	4,500,000	100.	4,500,000.00	101.25	4,556,250.00

$2\frac{1}{2}\%$ — Dec. 1, 1944 — Dec. 15, 1952-54.....	\$6,600,000	100.	\$6,600,000.00	101.125	\$6,674,250.00
$2\frac{1}{4}\%$ — June 1, 1945 — June 15, 1959-62.....	9,000,000	100.	9,000,000.00	100.	9,000,000.00
$2\frac{1}{4}\%$ — Nov. 15, 1945 — Dec. 15, 1959-62.....	6,200,000	100.52	6,232,264.10	100.	6,200,000.00
$2\frac{1}{4}\%$ — May 5, 1942 — June 15, 1962-67.....	6,000,000	100.	6,000,000.00	101.25	6,075,000.00
$2\frac{1}{4}\%$ — June 1, 1945 — June 15, 1967-72.....	3,000,000	100.	3,000,000.00	100.25	3,007,500.00
$2\frac{1}{4}\%$ — Oct. 20, 1941 — Sept. 15, 1967-72.....	500,000	100.	500,000.00	101.	505,000.00
$2\frac{1}{4}\%$ — Nov. 15, 1945 — Dec. 15, 1967-72.....	2,000,000	100.	2,000,000.00	100.25	2,005,000.00
United States of America Savings Bonds, Defense Series F (12 year appreciation bonds):					
Due May 1, 1953 — Maturity value.....	67,500	83.5	56,362.50	83.5	56,362.50
Jan. 1, 1954 — Maturity value.....	67,500	80.9	54,607.50	80.9	54,607.50
July 1, 1954 — Maturity value.....	67,500	79.7	53,797.50	79.7	53,797.50
Jan. 1, 1955 — Maturity value.....	135,000	78.6	106,110.00	78.6	106,110.00
United States of America Treasury Note 1% dated Sept. 15, 1947 due Oct. 1, 1948.....	7,000,000	100.	7,000,000.00	100.984	7,068,880.00
TOTAL BONDS.....			\$67,944,359.60		\$67,711,152.87

PREFERRED STOCKS

NAME	SHARES	LEDGER VALUE		MARKET VALUE	
		PRICE	TOTAL	PRICE	TOTAL
Atlantic Refining Co. Cum. 3.75% Ser. B (Par \$100).....	10,000	\$100.00	\$1,000,000.00	\$93.50	\$935,000.00
Chicago City & Connecting Rys. Participation Certificates (No par) (C/D)	17,530		1.00		0.00
Connecticut Light & Power Co. \$2.00 Cum. (No par).....	5,000	54.26	271,300.00	47.25	236,250.00
Consolidated Edison Co. of New York, Inc. \$5. Cum. (No par).....	10,000	91.75	917,500.00	105.00	1,050,000.00
International Harvester Co. 7% Cum.	15,000	115.00	1,725,000.00	163.00	2,445,000.00
Philadelphia Electric Co. 3.80%.....	2,000	102.70	205,400.00	95.50	191,000.00
Philip Morris & Co. Ltd. Inc. 4% Cum.	4,000	105.35	421,400.00	89.00	356,000.00
Tennessee Gas Transmission Co. 4.25% Cum. (Par \$100).....	5,000	96.67	483,372.50	94.50	472,500.00
United States Rubber Co. 8% Non-Cum. 1st (Par \$100).....	1,500	150.90	226,337.50	132.00	198,000.00
United States Steel Corporation 7% Cum.	6,600	133.86	883,462.50	134.00	884,400.00
TOTAL PREFERRED STOCKS.....	\$6,133,773.50	\$6,768,150.00

COMMON STOCKS

NAME	SHARES	LEDGER VALUE		MARKET VALUE	
		PRICE	TOTAL	PRICE	TOTAL
American Telephone & Telegraph Co. Cap.....	6,675	\$173.16	\$1,155,864.44	\$151.375	\$1,010,428.13
The Buckeye Pipe Line Co. Cap. (No par).....	107,763	11.79	1,270,627.60	11.00	1,185,393.00
Central & South West Corporation (Par \$5).....	68,351	9.75	666,422.25	9.375	640,790.63
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	8.50	176,033.05
Consolidated Natural Gas Co. Cap. (Par \$15).....	127,164	28.392	3,610,397.90	51.75	6,580,737.00
Continental Oil Co. (Delaware) Cap. (Par \$5).....	60,664	11.16	677,258.83	54.375	3,298,605.00
El Paso Natural Gas Co. (Par \$3).....	1,000	35.75	35,750.00	58.75	58,750.00
International Nickel Co. of Canada, Ltd. (No par).....	50,000	51.67	2,583,532.07	26.75	1,337,500.00
Interstate Natural Gas Co. Inc. Cap. (No par).....	33,765	14.96	505,106.25	22.00	742,830.00
Kennecott Copper Corporation Cap. (No par).....	35,100	58.54	2,054,731.03	48.75	1,711,125.00
Middle West Corporation Cap. (Par \$5).....	68,351.92	7.75	529,729.22	15.25	1,042,366.78
National Fuel Gas Co. Cap. (No par).....	381,018	7.75	2,952,889.50	12.25	4,667,470.50
Ohio Oil Co. (No par).....	94,684	35.37	3,349,446.50	33.00	3,124,572.00
Phelps Dodge Corporation Cap. (Par \$25).....	37,600	52.72	1,982,151.40	47.875	1,800,100.00
Potash Co. of America (Par \$5).....	4,000	23.50	94,000.00	29.25	117,000.00

TREASURER'S REPORT

COMMON STOCKS — *Concluded*

NAME	SHARES	LEDGER VALUE		MARKET VALUE	
		PRICE	TOTAL	PRICE	TOTAL
Standard Oil Co. of California Cap. (No par)	860,967	\$17.25	\$1,051,680.75	\$62.875	\$3,833,300.13
Standard Oil Co. (Indiana) Cap. (Par \$25)	691,140	28.90	19,973,946.00	42.875	29,632,627.50
Standard Oil Co. (New Jersey) Cap. (Par \$25)	1,000,000	30.33	30,326,018.02	79.375	79,375,000.00
Standard Oil Co. (Ohio) (Par \$10)	346,000	8.993	3,111,512.54	27.875	9,644,750.00
Union Tank Car Co. Cap. (No par)	240,000	6.69	1,606,087.97	33.25	7,980,000.00
Wilson Realty Co. Cap.	591		1.00		0.00
TOTAL COMMON STOCKS			\$78,202,455.63		\$157,959,378.72

SUMMARY	LEDGER VALUE	MARKET VALUE
Bonds	\$67,944,359.60	\$67,711,152.87
Preferred Stocks	6,133,773.50	6,768,150.00
Common Stocks	78,202,455.63	157,959,378.72
	\$152,280,588.73	\$232,438,681.59

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, 1947, 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 and included all procedures which we considered necessary in the circumstances.

Cash on deposit at December 31, 1947, as confirmed directly to us by the respective depositaries, was reconciled with the amounts shown on the balance sheet. Securities owned at December 31, 1947, 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, 1947, 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 29, 1948.

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