

The  
Rockefeller Foundation  
Annual Report, 1961

THE ROCKEFELLER  
FOUNDATION

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**THE ROCKEFELLER FOUNDATION**

**Trustees, Officers, and Staff**

# The Rockefeller Foundation

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*April 1961 – April 1962*

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<sup>3</sup> Beginning July 1, 1961; prior to then Vice-President and Acting President.

<sup>4</sup> Resigned September 21, 1961.

<sup>5</sup> Beginning October 1, 1961.

<sup>6</sup> Resigned March 31, 1962.

<sup>7</sup> Through September 30, 1961.

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<sup>1</sup> Resigned October 15, 1962; was then appointed  
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<sup>2</sup> Beginning October 16, 1962.

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<sup>1</sup> Resigned January 20, 1961.

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<sup>4</sup> Beginning October 1, 1961.

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JEROME H. MANER, PH.D., *Assistant Animal Scientist*  
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ROBERT W. HODGSON, M.S., *Horticulturist*  
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ALVIN A. JOHNSON, PH.D., *Seed Production Specialist*  
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# THE PRESIDENT'S REVIEW

## Financial Summary for 1961

During 1961 The Rockefeller Foundation appropriated a total of \$36,513,417. This amount was distributed among the several programs as follows:

Agricultural Sciences . . . . .	\$8,712,650
Humanities . . . . .	4,666,090
Medical and Natural Sciences . . . . .	9,619,635
Social Sciences . . . . .	4,304,510
General Grants . . . . .	5,972,598
Administration and Supporting Services . . . . .	3,237,934

The total appropriations also included funds for Rockefeller Foundation Fellowships and Scholarships. During 1961, 324 individuals from 46 countries began advanced study, usually in another country; 428 additional study awards made in preceding years remained active in 1961. Rockefeller Foundation Fellows and Scholars studied at some 165 institutions in 24 countries during 1961.

The income of the Foundation for the year was \$23,709,683. On December 31, 1961, the market value of its uncommitted principal fund was \$553,530,293.

## Progress Through People

The responsibilities of a philanthropy are many and far from simple. Constant attention must be given to a changing world and to shifts in human needs arising from the complex of social evolution. Efforts to increase the well-being of mankind throughout the world cannot be governed by formula; they must be flexible, adjustable to changing patterns. The Rockefeller Foundation considers its mission to lie, broadly, in the field of social dynamics. It has chosen to stress in its program those elements of human experience which, persisting from generation to generation, nevertheless undergo constant variation.

Slowly and surely, problems in each sector of the globe impinge on all the others. Large on the horizon today is the struggle by the new and the less developed nations to raise themselves economically and socially to levels more nearly compatible with generally accepted standards of living. Where the decisive step to independence has been taken, the rosy glow of victory is now beginning to fade in the harsh light of reality. The governed must now learn to govern. Imposed discipline must be replaced by self-discipline. Although often unpalatable, facts are decisive and must be faced. Those countries that look to the future from a position of national underdevelopment must realize that grave problems lie ahead and that choices must be made which will determine the course of their history for many years to come. To improve standards of living and social organization is a deliberate and painful process, demanding national sacrifice and massive effort.

As the developing nations press for economic improvement, it is natural they should turn to old and to new friends for assistance. The response has already been substantial. Wealthier nations have helped with money, material, and manpower, but it has quickly become apparent that of the three, manpower is the most difficult to supply, and that its lack will longest retard progress toward national goals. The



need for leadership in all aspects of public planning is of vast dimensions—the number of qualified people pitifully inadequate. The industrialized nations can share their educational facilities for training. To a degree they can also share their pools of specialists for service overseas as planners, expeditors, teachers, and technicians. But even in the most advanced countries the supply of qualified persons is limited, and those lent for overseas assistance can be successful only when strongly buttressed by local determination, sacrifice, and concerted effort for the common good.

Emphasis on the development of human potential has always been a major concern of The Rockefeller Foundation. Only through the increased accumulation of knowledge and its application for human benefit can society hope to meet the challenges of the future. The challenges are many, diverse, and difficult of solution, requiring new knowledge and its translation into effective action for public good. Although populations are increasing apace almost everywhere, never has there been a time in history when either excellence or knowledge was overabundant. The world needs and continues to seek out those who through their imagination, experience, and ability can raise the general levels of performance even to a slight degree.

Today's rapidly changing society creates unprecedented demand for human competence at all levels of service. It is no longer sufficient to seek out and support only the individuals with the greatest potential. Greater attention must be paid to group as well as to individual excellence. There must be provision for the training of both middle- and top-level personnel to make investments in manpower meaningful in terms of social advance. No matter how competent or inspired, a leader without a supporting team of trained and dedicated associates cannot function effectively.

The Foundation's approach to group excellence is through cooperation in programs of critical importance directly focused on basic human needs. It emphasizes education, research, training, and pilot operations leading to the

acquisition of knowledge and its general application for social benefit. In so doing, the Foundation works with a wide diversity of universities, government and quasi-government institutions, research institutes, and other entities engaged in the study of important human problems. Recognizing that each situation has special features, the Foundation has begun its work at existing local levels and attempted to contribute to continuing improvement. Its agricultural and medical programs include practical applications and training activities which range from the most applied to the most fundamental research. Through this plan it has been possible to create operating patterns in which trained personnel function in an integrated fashion at each level necessary to the success of the venture.

Throughout its history, The Rockefeller Foundation has emphasized the training process. Education can and does occur under widely varying circumstances and by informal as well as formal methods. With this focus on training, all Foundation activities are designed to increase by direct or indirect means the number of individuals who can contribute to human progress. Their future responsibilities may be limited or vast, but each must become part of a pattern which can be successful only when all its members are strong and functional.

Assistance may be provided in a variety of ways to fill the need for greatly increased numbers of persons whose abilities have been fully developed. The most conventional is the reinforcement of educational and research institutions which serve society on broad fronts. The Foundation has long recognized the need to aid educational institutions in their continuing forward progress and it has sought also to expose substantial numbers of qualified scholars to their benefits. Because of their levels of excellence and their capacity, universities in this country and Western Europe received major attention in the past. In recent years, however, the Foundation has increased its interest in a number of the younger universities abroad, to assist them in the improve-

ment of their programs and the quality of their graduates. In a number of instances the Foundation, through members of its own staff, has joined forces with foreign institutions in projects directed to improving educational patterns, food production, and public health. In every instance, the ultimate goal has included the development of a growing body of nationals qualified for future major responsibilities.

The educational patterns of this country have evolved rapidly in terms of both orientation and dimension within the past half century. Strenuous efforts have been made to improve instruction, to give educational opportunities to all citizens, and to increase the flow of new knowledge resulting from research. Giant strides have been taken in the rapid application of new knowledge for public benefit. The secret of the success of the process has been the increasing number of individuals whose abilities and skills have been highly developed through the educational process. And although public funds have of necessity been the principal base upon which the educational pyramid rests, private philanthropy has also played a significant role in its building.

The Rockefeller Foundation has been active in American education for nearly fifty years. Having selected the fields of health, nutrition, the biological sciences, the humanities, and the social sciences as its areas of interest, it has channeled support into institutions and programs thought to be most productive in the disciplines concerned. Although major emphasis has always been given to programs in the United States, there is also a long record of activity in Western Europe and from the beginning, in the field of international public health. In the early 1940's the Foundation entered the field of agriculture and also increased its overseas work in the sciences; later the overseas program in the humanities and social sciences was likewise expanded.

The effect of the efforts of the Foundation has been to substantially increase the number of leaders in science and education in the fields of its program areas. The procedure has been to select key individuals and to give them oppor-

tunities to broaden their experience and pursue advanced studies. Often the Foundation has supported them locally in order to increase their contribution to national progress through administration or research and the instruction of others. Whenever possible the assistance provided has been directed to specific national programs and the reinforcement of educational and research institutions.

In response to the demand for support of education and research to meet human needs, public and private funds have increased enormously during the past decade or more. Many of the efforts which received early support through private philanthropy are now largely and more heavily supported by public monies. Funds available for domestic and foreign aid are fulfilling many of the demands formerly made upon private philanthropy. The need for private assistance, however, has by no means diminished. Because public funds have assumed an increasing share of the burden here and abroad, private philanthropy is now permitted to focus attention upon problems of growing future significance. Flexibility and prompt action in the most effective use of modest resources are the forces which private philanthropy can bring to bear on human needs. Because of, rather than in spite of these limitations, patterns may result which, in their importance and demonstrated excellence, may merit future support from national and international public agencies.

The experience of the past has led The Rockefeller Foundation to the judgment that it is now possible and desirable to begin some consolidation of certain of those activities which offer greatest promise of future accomplishment. The support of many projects within the broad programs of earlier years clearly stimulated and facilitated advances on many fronts. A substantial number of these projects have now become fully self-supporting and others are attracting assistance from new sources. Some have now reached the stage at which they could, with some increased and sustained support, become educational and research centers of great national and regional significance.

In its overseas program, the Foundation believes that it can best be of assistance in the establishment or support of those institutions which must bear the brunt of searching for needed knowledge as well as of increasing the numbers of individuals qualified for important responsibilities in government, education, cultural affairs, business, and industry. At home, the Foundation expects to increase its emphasis upon the problems growing out of human association and upon the enrichment of cultural experience. In so doing, it clearly recognizes that the sciences and the humanities are both important in the total effort. The domestic and overseas activities of the Foundation are not in any sense mutually exclusive; rather it is expected that the future will offer increasing opportunities for reciprocal benefits.

In the light of the complexities of modern society, it becomes clear that decision-making is taking on new dimensions of importance and that no aspect of human experience or circumstances can be considered in isolation. Painful as they may be, decisions will have to be made which are calculated to produce maximum social and economic progress at all possible speed. Thus, each facet of social organization will have to be tested in terms of the whole, and supported within the limits of available resources to the level compatible with its estimated services to the social good. The program and progress statements which follow will illustrate in more detail the Foundation's current activities and future plans within this broad context.

## **Current Program**

The Rockefeller Foundation carried on its work in 1961 under four major headings: the medical and natural sciences; the agricultural sciences; the humanities; and the social sciences.

In the area of the medical and natural sciences, emphasis is upon professional education and upon research in the life processes as these contribute to an understanding of the

living world. Professional education includes support for the training of teachers for schools of medicine, nursing, and related disciplines. Much of this aid, especially that for research, is channeled to institutions in other countries.

In its agricultural sciences program the Foundation seeks to increase basic food production for the world's growing population. It carries on its own activities through a staff of agricultural scientists who work in several countries; through the award of fellowships and scholarships; and through grants for research in agriculture and in the sciences on which it rests.

Under its programs in the humanities and the social sciences the Foundation is now supporting work in such fields as history, philosophy, the arts, economics, political science, and sociology.

All the programs unite in giving substantial aid to the development of strong universities abroad, in view of the intense need for qualified leaders in the newly developing countries.

### *The health of people*

The Foundation's interest in the medical and natural sciences includes those areas of science that seem likely to contribute most to the health of human beings. It is concerned not only with advancing basic knowledge of the nature of living things but also with the application of such knowledge to the practice of medicine and public health. Particular attention has always been devoted to the education of scientists and to the training of professional health personnel. In recent years an increasing emphasis has been put on the development of educational and research institutions, especially in the newly emerging countries. All these aspects of the program are illustrated by the series of grants made during 1961.

For the past thirty years the Foundation's support for the basic biological sciences has been primarily devoted to biochemistry and genetics. Biochemistry was selected be-

cause of the obvious importance of knowing as much as possible about the nature of the foods taken into the body and the way they are broken down and put together again to form bones, muscles, and nerves, and to provide the energy for their proper functions. In 1930, when the choice was made, the importance of describing the form and structure of living things in biochemical terms had become quite obvious. Equally and perhaps more important, progress in the basic sciences of physics and chemistry had begun to make available analytical tools of great power and precision. Much of the Foundation's support has, in fact, been used to provide specialized apparatus for use in biological laboratories.

As a result of a really massive application of physics and chemistry to biology, medicine now has at hand a comprehensive outline, though by no means a detailed picture, of the form and function of living organisms. Best understood, perhaps, is the composition of essential foods and the way they are broken down and converted by a long series of chemical reactions into a continuous flow of energy for the machinery of the body. The growth and replacement of bodily structure is less fully determined, but chemical analysis and X-ray diffraction methods have provided a wonderfully precise picture of the structure of one or two of the large protein molecules that form the typical stuff of living things. This year's grant to the laboratory of the Medical Research Council unit in Cambridge, England, is typical of a long series made to this laboratory and others engaged in similar work on protein structure.

As recognition of the success of modern biochemistry has brought increasing public support in the United States and Western Europe, the Foundation has shifted its activity to the development of similar work in other countries. Examples of this change are provided by the grants to the Indian Council of Medical Research and the Council of Scientific and Industrial Research, New Delhi, India, for support of work in nutrition; to Keio University, Tokyo, Japan, for a new chair in biochemistry; and to Osaka University,

Japan, for general support of an established department in the same subject.

In the early days of the Foundation's program in genetics this subject appeared to bear little relationship to biochemistry, but the progress in both fields has brought them into the closest possible contact. It is now rather generally agreed that the classically identifiable hereditary traits, such as color blindness, hemophilia, and so on, are the final outcome of a process that starts with the construction of a particular enzyme under the control of a particular gene (or combination of genes). Indeed, a large number of genetic traits, both normal and abnormal, can now be described in strictly chemical terms. One form of feeble-mindedness, for example, is due to a lack of an enzyme necessary for the proper metabolism of the amino acid, phenylalanine.

The most exciting progress of all is currently being made in describing the genes themselves in terms of their chemical structure. In fact, it is becoming common knowledge to readers of most newspapers and newsmagazines that the genetic material of the living cell is a language or code consisting of four chemical letters. These letters are linked end to end and coiled together in a double spiral of great regularity (and, at least to the physicist and biologist, great elegance and beauty). The sentences thus formed and finally packed within the nucleus of a single genetic cell provide the information necessary for guiding the chemical reactions that finally result in the fully formed animal or plant. It is a source of satisfaction to the Foundation to have contributed some aid to a large proportion of the distinguished investigators usually credited with providing the means for cracking this most important of all codes. Current Foundation support for this field, as for biochemistry itself, is in process of being reduced, but was this year represented by grants to the National Institute of Genetics in Japan, the University of Lund in Sweden, and the University of Turin in Italy. The National Institute in Japan covers almost every field of genetics, but the Foundation's grant was made primarily for



work in human genetics, as was the allocation to Turin. The department in Lund is especially well known for its work on plants and the grant has a bearing on the Foundation's interests in agriculture.

The nucleoproteins of the chromosomes are of course only one of the determinants of man's health and happiness. The kind of behavior we are all interested in--the business of loving, hating, creating, and destroying, which conditions the quality of everyday life—is the result of a complex interaction between the stuff "given" by heredity and a constant flow of stimuli from the environment. The language of this dialogue is as yet very poorly understood. The Foundation has every hope of forwarding such understanding by supporting work in the basic physiology of the nervous system and by exploratory studies at the more complex levels of the behavioral sciences. At this end of the biological spectrum a perhaps too inconsistent but frequently stimulating contact is maintained with programs in the social sciences and humanities, with their expressed concern for the behavior of man as an economically productive and esthetically sensitive organism. During the present year specific grants for these purposes have been few. Most clearly related to the understanding of complex behavior was the allotment to the University of Munich for the continuation of von Frisch's classic studies on the language of bees. Several of the broader grants for institutional development contained some provision for work on the biology of behavior—notably in the Department of Physiology in the Catholic University of Chile and the Research Institute of Biological Sciences in Uruguay.

Because of the increasing availability of research funds in recent years, the Foundation's concern for these special fields of knowledge has been expressed increasingly as part of a general concern for the institutional setting in which progress in the biological and medical sciences takes place. In actual practice this means that less emphasis has been given to limited ad hoc grants earmarked for the support of this or that bit of specialized research. More officer time and

more funds have thereby been made available for building departments of science, and even for the development of entire medical schools when suitable opportunities are offered. For several reasons, this program is especially directed toward the newly emerging countries, although the officers attempt to remain alert to really unusual opportunities in other areas of the world. The business of creating new environments for the nourishment of knowledge is a complex task and requires careful adaptation of general techniques to specific situations. The Foundation's efforts in this direction are flexible, even opportunistic, and are best described in reference to particular geographical areas.

### *Toward understanding*

During 1961 the Foundation's program in the humanities continued assistance to developing countries in Asia, the Middle East, Africa, and Latin America toward development of their cultural resources—in keeping with their economic growth, social progress, and political independence. This effort is more and more taking the form of aid to universities, the principal institutions for the advanced training of national leadership, as well as for research and creative work in such fields as history, philosophy, literature, and the arts.

As part of the Foundation's over-all attention to universities in the new and developing countries, the humanities program joins with the Foundation's programs in the social sciences, medical and natural sciences, and agriculture. In the context of the immense needs of new countries and the amount of help being given by other agencies, the Foundation's assistance to universities has been highly selective, concentrating on a small number of institutions with the greatest potential for national and international distinction in training and research. Examples of aid to universities during 1961 include an appropriation to the University College at Ibadan, Nigeria, to establish an Institute of African Studies devoted to scholarship and instruction dealing with

contemporary Africa; support to the University of East Africa to begin a program in African music at Makerere University College in Uganda; and assistance to the University of Valle in Cali, Colombia, toward developing a linguistics center with space for laboratories, classrooms, and library.

The Foundation has long recognized the universal need for libraries as indispensable to basic training and research in the humanities and the social sciences. Formerly, support was given to libraries through fellowships for librarians for study in the United States and through international exchange programs for librarians. More recently the emphasis has shifted to support of training schools for librarians in their home countries. During 1961, Foundation grants were made for advanced training in library administration and services at the University of Delhi in India, the University of the Philippines, the National Taiwan University, and the University of Antioquia in Colombia. Other grants were made to the American Library Association to assist its international library program. Still other funds were provided for stocking selected libraries with necessary documentary materials.

Although Foundation attention has thus become focused on universities, there are special situations in some countries where non-university institutions offer the best advanced training in particular fields. The Colegio de México, for example, though not university-connected, has for many years offered graduate training of true university calibre. In 1961 the Colegio received Foundation aid for developing a graduate program in United States history and for the study of non-Western cultures. No other institution in Mexico or northern South America offers a graduate degree in history or trains young scholars for university teaching in the field.

Concern for the development of universities and other institutions designed to give intellectual leadership to newly emergent countries has led the program in the humanities to give continuing attention to the special training of particu-

larly promising individuals connected with these organizations. Thus a wide range of assistance has been given—to university teachers, scholars, performing artists, writers, and others.

Since intellectual exchange and advanced training and research rely on effective communication, both nationally and internationally, the Foundation is concerned with the role of languages within and among societies. Particular attention has been devoted to the English language, as an important medium for science, international affairs, and internal communication within many countries of Asia, Africa, the Middle East, and Latin America. On the basis of earlier efforts and successes in the widespread learning of English in the Philippines and Egypt, the Foundation made two substantial grants in 1961 to reinforce large and organized programs in each country aimed at improving the teaching of English at various levels in the school systems, and at relating the scholarly study of English to that of other national and regional languages.

As always, the Foundation's program in the humanities has been concerned with identifying and assisting scholars pursuing research of unusual importance and interest. These scholars need time for research and writing, funds for travel to consult with others, space for work, and libraries for reference. These needs seem modest compared with those of the sciences, but they deserve attention. Research in history, philosophy, and linguistics contributes to a people's understanding of its past, its position in the world of thought, and its intercommunications with other peoples. More and more, mutual awareness and interdependence are important realities to human beings everywhere.

There is a concern for the arts, both performing and visual, as a major agent in explaining and giving purpose and direction to the world around us. The Foundation's program in the arts is not aimed at providing patronage or subsidy but at exploring ways through which the arts may be more responsive to human needs and aspirations while, at the

same time, searching for practical methods leading to a broader base of public support of the arts. Examples of support to enable artistic organizations to extend their activities to the public include assistance to the Museum of Modern Art as a major center for the study of the contemporary arts, and help to the Dallas Theater Center, to give experience and training to selected actors and directors. A specific grant concerned with increasing public support of the arts was made in 1961 to the Carnegie Institute of Technology for research into the economic basis for activity in the arts. Abroad, exceptional talent in the dramatic, musical, and literary arts has been found in Asia, Africa, and Latin America. A number of fellowships and small grants are providing aid to promising people in these areas.

### *The problems of societies*

In the social sciences, the Foundation is particularly concerned with the new and developing nations of the world. Highest priority has been given, in recent years, to research bearing on the economic development of these new nations, their problems of population control, their training of responsible leaders, and their relationships to other nations.

Since the beginning of the social sciences program in 1928, the Foundation has tried to encourage people in the basic disciplines of the social sciences—economics, sociology, and political science—to undertake a systematic investigation of concrete social problems. That aim is unchanged, but the concrete problems have been multiplied.

In three major areas of research, the Foundation is supporting a broad consideration of economic problems. One area covers basic studies of the fundamental factors of economic development. Another deals with agricultural economics, a necessary study in developing areas that are predominantly agrarian or peasant. The third area, economic history, is valuable in showing how existing economies grew and thrived—or failed to thrive.

In the building of viable societies, the problems of economic development are intimately related to those of population stabilization. Demography has been a field of prime interest for the Foundation for more than a decade. Grants have been made for important research and study by the Office of Population Research at Princeton, the Scripps Foundation for Research in Population Problems at Miami University in Oxford, Ohio, the Population Research and Training Center at the University of Chicago, and the Population Investigation Committee at the London School of Economics. The Population Council has received Foundation support for its fellowship program to train population specialists from Asian, African, and Latin American countries where population problems exist or may be foreseen.

In the contemporary world, economic growth can be and often is seriously held back by political instability. The political institutions of a new country are thus likely to be as important as the economic policies they seek to promote. A Foundation grant is now supporting the work of Professor Robert A. Dahl, Chairman of the Department of Government at Yale University, who is making a study of the development of political stability and democratic government in new countries. Another grant has been made to Professor Everett Hagen and his colleagues at M.I.T. for research on non-economic factors in economic development.

International politics, diplomacy, and international relations have, for some years, occupied a central place in the Foundation's social sciences program. Emerging problems of foreign policy and international affairs have received particular attention in 1961. With Foundation support, several universities are pursuing research on international organization, foreign policy, and the theory of international relations; these include Columbia, Johns Hopkins, Harvard, the University of California at Berkeley, and the Graduate Institute of International Studies at Geneva.

Under the Foundation's new International Relations Program, modest grants are made to assist the work of out-

standing scholars who bring proposals to the attention of Foundation officers. An advisory committee, composed of distinguished scholars in the United States, helps to select the recipients from applicants all over the world.

As part of the Foundation's over-all program of support to university development on an international scale, the social science officers have joined the search for universities most likely to develop wide influence in the newly developing areas of the world. Key countries of Asia, Africa, and Latin America are being encouraged to raise the standards of social science teaching and research on a graduate level. Particular attention is being given to those universities which have already made a significant start in one of the social sciences—enough of a start to provide a basis for continued growth. Universities which seem most interested in extending advanced training and research offer the best opportunities for enduring results from Rockefeller Foundation assistance.

To build on strength is a Foundation policy. The strongest social science department may be a logical starting point in aiding a university. Once a key department has raised its standards and performance, it frequently provides a stimulus and serves as a model for other departments. In time, other departments become ready for aid.

So far, the Foundation's assistance to universities has had to be gradual and pragmatic in response to developing situations. To strengthen the faculties in new universities, scholarships and fellowships are offered for study in Western institutions. As part of a traditional pattern of assistance, funds may be given for building up libraries, for providing visiting faculty members from the United States and Europe, for establishing and enlarging a full-time faculty, and for supporting research by staff members, assisted by advanced students.

Working toward the same objective from another direction, the Foundation is helping universities in the United States and Europe to improve their ways of giving assistance

to schools in underdeveloped areas. Harvard received a \$200,000 grant in 1961 for a five-year investigation of social and political development in some of the emerging nations. Under the program, faculty members and visiting scholars will devote a year or more to uninterrupted research in Africa, Asia, and Latin America. These scholars may offer seminars and help to develop courses of instruction at the universities they visit. Similar projects which combine research and teaching have been undertaken, with Foundation support, at Vanderbilt, Michigan State, the University of California at Berkeley, and the Graduate Institute of International Studies at Geneva.

Another central interest in the social sciences program is the alleviation of fundamental problems of contemporary society. To help research in this direction, the Carnegie Endowment's training program for young foreign service officers of the new nations has been developed with funds from The Rockefeller Foundation. Foreign office libraries in some of the newer non-Western nations have received collections of books. Assistance has also been given to the Harvard-M.I.T. Joint Seminar on Arms Control for consultation among natural scientists and political scientists and for resulting research projects.

Finally, especially in more advanced countries, the Foundation continues to support basic and applied research in the social sciences. As in the past, emphasis is given to extensions of fundamental theory and to the integration of theory and empirical work. This pattern of assistance in the social sciences will continue as a major program emphasis in the future.

### *People and the land*

The primary aim of the Foundation's work in the agricultural sciences is to help people in the developing regions of the world improve their nutrition by growing more food. This work has been in progress for nearly twenty years and



has demonstrated that substantial gains in food production can be accomplished and that solid progress can be made toward building up professional agriculture with permanent results and promise of future progress.

The upgrading of a primitive agricultural system is a complex process in which social, economic, and political factors play parts as important as the improvement of technology. The problems that impede progress must be solved within the local environment and improvement must start where the people are. The challenge in areas where improvement projects are planned is to learn more about the environment and to fit reforms into it.

To improve the yield of a given crop requires the cooperation of plant breeders, plant pathologists, entomologists, soil scientists, and many other specialists. This kind of concerted interdisciplinary attack has been used in Foundation programs from the first.

As the technical problems of improved production are solved, the wider problems of the agricultural system as a whole, in their social and economic setting, become more conspicuous. It helps little to grow more corn or wheat or beans if the increase cannot reach the market at prices the people can afford. Better procedures, as demonstrated at experiment stations, are of small use if most farmers cannot be trained or persuaded to adopt them. The cooperation of specialists in a number of disciplines in addition to agriculture is needed if the full possibilities of improved crop production are to be realized. Economists, sociologists, medical and public health workers, nutritionists, and many others must share the work.

No one agency has either the financial resources or the personnel to do the whole improvement job—even in a small country. There are now many agencies, both public and private, giving technical assistance in the new nations. While complete coordination among them is probably not possible, waste and duplication can be reduced by the exchange of information and experience. The Foundation has sought to

consult with international and United States aid organizations to increase the efficient use of each dollar and each man-year put into the effort.

The most effective way to improve agriculture in a given area, the Foundation has found, is to begin with research on local problems, and to link the research closely to the training of nationals in the art and science of agricultural improvement. By participating as learners in the actual solution of problems whose importance is obvious to them, young men and women seem to grasp most clearly and firmly the concepts underlying agricultural improvement. When able trainees can supplement such practical experience with formal advanced training, the result is a group of seasoned scientists, dedicated and responsible, who can assume leadership for the future.

The Foundation's three types of activities in agriculture are closely interrelated. The operating programs, training and study awards to individuals, and grants for the strengthening of institutions—all contribute to the final goal, the creation of a corps of competent professional agricultural scientists, and of indigenous organizations in which they can function effectively.

In the operating programs Foundation staff scientists live and work in the host country, study the problems affecting the production of food crops and livestock, and lead research projects in which young men and women who have had the first level of professional training can gain practical experience in scientific methods.

The first operating program was established in Mexico at the invitation of the government in 1943. Since that time, more than 600 young Mexicans have worked for substantial periods on staff-directed research projects. Similar units were set up in Colombia in 1950, in Chile in 1955, and in India in 1956. In these units the host government furnishes land, labor, and proportions of the training costs, together with the major part of the costs of building the required laboratories and experimental facilities, the Foundation contribut-

ing to operating costs and furnishing the services of staff members.

The second aspect of the Foundation's agricultural program is the provision of fellowships and scholarships to young men and women who have shown aptitude and ability for advanced formal training. In Mexico alone, more than 100 young men and women have earned master's degrees and more than 30 have taken the doctoral degree with support from the Foundation. Practically all of them have returned home to work professionally in agriculture. The same has been true of trainees from other countries.

In the past, fellowships and scholarships provided for study, almost invariably, in universities of advanced countries, chiefly in the United States and Western Europe. But the numbers of professional agricultural scientists required by advancing countries can never be furnished solely through foreign training; the language problem alone is a sharply limiting factor, and there are others. To contribute to the creation of graduate training centers in agriculture, located within the cultural and ecological environment where the students will later work, is a long-standing objective of the Foundation.

This leads to the third phase of the Foundation's work in agriculture—the making of grants to strengthen local agricultural colleges and research institutions in the developing countries. At first some grants were made to improve undergraduate instruction through the purchase of laboratory equipment, library improvement, the supplementation of faculty salaries, and additional training for faculty members.

In recent years it has been possible to help extend instruction upward into the graduate years. One of the notable advances has been in Mexico, where a Graduate School was created at the National School of Agriculture in 1958. This school has already graduated its first class with master's degrees and is growing in size and gaining in quality with each passing term. Other colleges in Mexico, and in a number of

other Latin American countries, have also begun to establish graduate-level curricula.

The making of grants is not limited to the less developed nations. In countries where agricultural technology and institutions are more advanced, grants are made to support basic research, especially when the work will also contribute to the advanced training of participants in Foundation operating projects. For example, a 1961 appropriation to the University of Nebraska will give partial support to studies in the genetics of corn; another, to North Carolina State College at Raleigh, will encourage investigations in population genetics. Both projects will, in addition, give advanced training to Latin American plant breeders, studying in this country on Foundation fellowships, who will participate in the research.

The growth of agriculture as a profession in Mexico over the past twenty years has been impressive. This fact was signalized in 1961 when the new National Institute of Agricultural Research, completely under the leadership of Mexican scientists and administrators, was created by the consolidation of several agencies, including the Office of Special Studies through which the Foundation's cooperative program formerly operated.

The creation of the National Institute has freed members of the Foundation staff for wider missions. Since 1959 three inter-American programs have been inaugurated, directed toward the improvement of corn, wheat, and potatoes. Staff members, who continue to live in Mexico, travel in cooperating countries in the Western Hemisphere and beyond to give aid and guidance to research centers working on these crops, to recommend the making of grants, and to choose promising scientists for training on fellowships.

Out of the Foundation's experience in agricultural improvement has grown another project, following a somewhat different but still closely related pattern, the International Rice Research Institute in Los Baños, the Philippines. The Ford Foundation provided the funds—more than \$7 million

—for the construction of the institute and the government of the Philippines contributed land and special legal arrangements. The Rockefeller Foundation is undertaking the responsibility of operating the institute and is furnishing both funds and the services of six staff members. The aim of the institute is to mount a concerted attack on the problems that limit the production of rice in the “rice bowl” of the Far East, emphasizing the training of rice specialists from countries where rice is the food staple.

Descriptions of all the operating programs, and of the Rice Research Institute, will be found in the reviews of the Foundation's work in the various regions of the world. In addition, a report of the work of the agricultural sciences program is published annually and may be obtained by request to the Foundation's New York headquarters.

## Operating Programs

### VIRUS RESEARCH PROGRAM

An outgrowth of the Foundation's earlier investigations in yellow fever, the operating program for research on arthropod-borne (arbo) viruses is conducted by Foundation staff members in central laboratories in New York and at five field stations in tropical and subtropical regions around the world. In 1961 some 18 virologists, entomologists, and epidemiologists were on assignment. For the expenses of the program in 1962, and for the work of staff members on the development of professional education, the Foundation has appropriated the sum of \$1,688,520.

The program is basically concerned with the arthropod-borne viral infections of man and his domestic animals. At the five field laboratories—located in Port-of-Spain, Trinidad; Belém, Brazil; Poona, India; Cali, Colombia; and Berkeley, California—the primary emphasis is on determining the prevalence of the arboviruses occurring in the region,

their epidemiology, and their importance as causes of human and animal infections. The main function of the New York laboratories, which work in intimate cooperation with the other five, is to study the physical, chemical, immunological, and biological properties of materials referred from the field. In these basic studies, considerable attention is given to the development of techniques that might be of value to the field laboratories.

Since viruses can replicate themselves only in the presence of living cells, the first problem in the study of a virus is to find a suitable experimental animal. For the arboviruses, the experimental animal of choice is the common laboratory white mouse. Owing to technical and financial restrictions that limit the availability of mice, tissue culture methods have been under investigation for several years in an attempt to find substitutes for the living animal. In the New York laboratories the search has been chiefly directed to finding a line of cells that would be susceptible of continuous propagation, would support the multiplication of a wide range of viruses to a high degree of concentration, and would give evidence of the presence of the virus by readily visible changes in the cells themselves. It has now been shown that the HeLa cell line, very widely used in laboratories throughout the world, is suitable for the great majority of arboviruses so far tested, if it is cultivated in an unusually rich maintenance medium. The use of HeLa cells and the rich medium has recently proved of special value in the study of the virus of Argentinian hemorrhagic fever, an agent to which the usually suitable infant mouse is relatively resistant.

As many workers have demonstrated, when a virus infects a susceptible cell it becomes in some manner the master of the cell and directs its metabolism to the manufacture of replicates of the infecting virus. An explanation of this phenomenon is being sought in many laboratories on the hypothesis that the nucleic acids of the infecting virus interfere in some way with the normal transfer of information from the nucleic acids in the genetic material of the nucleus

to the cytoplasm where the manufacture of normal cell proteins ordinarily takes place. In the Foundation's New York laboratories, both the normal process of information transfer and its disturbance by viral infection are under investigation. For the latter studies Semliki Forest virus has been chosen as a model virus, with HeLa cell cultures supplying the susceptible cell. The metabolic changes induced in the cells' nucleic acids by infection with the virus are being followed, primarily through the use of radioactive nucleotides and autoradiography.

An important aspect of the New York laboratories' work is the classification of the arboviruses. The number of distinct agents known or suspected to be arthropod-borne is increasing yearly, and at present there are roughly 160, the great majority of which are available in New York for study. Fortunately, it has proved possible to divide most of these numerous viruses into distinct groups on the basis of their immunological reactions. During the past year considerable effort has been directed to producing immune sera that will react positively with all the members of a given virus group, since the availability of such a method would greatly simplify the task of identifying unknown agents referred from field stations or hospitals.

Analysis of the world distribution of known arboviruses indicates that each major biogeographical region has its own distinct viruses; very few are common to two or more regions. This fact further simplifies the identification of an isolate because only the agents known to occur in the region need to be considered.

The largest variety of arboviruses occurs in the tropics. South America leads with 58, most of which were discovered by scientists of the Belém Virus Laboratory or the Trinidad Regional Virus Laboratory. Next come Africa with 35 and the Oriental region (India, Indochina, China, and the East Indies) with 28. For North America 13 distinct agents have been described. Twenty viruses are known from the vast Palearctic biogeographical region, which includes the major

portion of the Eurasian continent, while only nine have thus far been described for Australasia.

Of the total of 143 viruses on which this regional analysis is based, only 14 occur in more than one biogeographical region; some of these, such as yellow fever and dengue, have in all probability been spread by man. In studies in progress it has been found that strains of what appear to be the same virus can, in fact, be separated by delicate immunological techniques into distinct variants. For example, agents identified as Eastern equine encephalitis have been isolated in both North and South America, but it has now been shown that the viruses from the two continents are not identical. In a similar manner, the various strains of Sindbis virus isolated in the Australasian, Oriental, and Ethiopian regions can be separated into three different varieties specific to the region of origin. From these studies it would appear that the occurrence of completely identical agents in two distinct biogeographical regions is probably extremely rare. The implication of these findings is that long-distance exchange of viruses between regions is in all likelihood a very uncommon event.

#### AGRICULTURAL SCIENCES PROGRAM

In the operating program in the agricultural sciences the Foundation employs its own staff to work for the improvement of the quantity and quality of basic food crops and animals in selected countries and regions throughout the world, and to assist the training of professional agricultural scientists who can take over and extend the work.

During 1961 fifty Foundation scientists were assigned to the operating program. Their activities in Mexico, Colombia, Chile, and the inter-American projects are described in the section on Latin America; those in India in the section on that country; and those in the Philippines in the section on the Far East.

For the expenses of the program in 1962 the Foundation has appropriated \$2,629,150.



## Study Awards

The Rockefeller Foundation's study awards are integrated with the interests of its several programs. Through its fellowships and scholarships, the Foundation seeks to train personnel and to advance knowledge in the medical and natural sciences, the agricultural sciences, the social sciences, and the humanities. Awards are made on an international basis to outstanding men and women who have shown promise of making important contributions to their fields of study in their native countries.

During 1961 a total of 752 persons held Foundation fellowships and scholarships, 428 awards that began in previous years continued active into 1961, and 324 new awards became active during the year. Their distribution by program is as follows:

	Study awards from previous years continued into 1961	New awards in 1961	Number of awards active in 1961
Agricultural Sciences	168	130	298
Humanities	47	27	74
Medical and Natural Sciences	149	115	264
Polish Science Program	5	—	5
Social Sciences	<u>59</u>	<u>52</u>	<u>111</u>
	428	324	752

In addition to the fellowships awarded and administered directly by The Rockefeller Foundation, national agencies have awarded fellowships with funds contributed in 1961 and previous years by the Foundation. These agencies administered a total of 73 fellowships during 1961:

Association for Asian Studies	6
British Medical Research Council	11
Social Science Research Council	
Predoctoral and Postdoctoral	45
Political Theory and Legal Philosophy	<u>11</u>
	73

Rockefeller Foundation Fellows and Scholars in 1961 came from 56 countries and three international organizations:

	Previous awards	New awards		Previous awards	New awards
Argentina	6	15	Mexico	48	30
Australia	5	1	National Republic of China	1	—
Austria	2	1	Netherlands	1	—
Belgium	4	1	New Zealand	1	1
Bolivia	—	4	Nicaragua	1	1
Brazil	37	25	Nigeria	4	5
Canada	1	—	Norway	2	2
Ceylon	5	—	Pakistan	3	5
Chile	24	19	Peru	6	9
Colombia	43	36	Philippines	28	17
Costa Rica	3	—	Poland	23	29
Denmark	4	—	Portugal	—	1
Ecuador	—	1	Sudan	—	1
El Salvador	1	3	Sweden	2	—
Ethiopia	—	2	Switzerland	1	2
France	2	1	Thailand	7	3
Germany	5	5	Trinidad	1	—
Ghana	1	2	Turkey	12	3
Great Britain	7	7	Uganda	1	4
Guatemala	—	1	United Arab Republic	1	3
Iceland	—	1	United Nations Relief and Works Agency	1	—
India	40	26	United States	5	5
Indonesia	9	4	Uruguay	2	2
International Cooperation Administration	1	—	Venezuela	—	1
Iran	2	1	Viet Nam	4	1
Israel	—	1	World Health Organization	6	—
Italy	3	3	Yugoslavia	2	—
Jamaica	1	1		—	—
Japan	56	35		428	324
Kenya	1	—			
Korea	1	2			
Lebanon	1	1			

The Rockefeller Foundation made available a total of \$2,950,000 for its fellowship and scholarship activities during 1961, and appropriated \$3,200,000 for the awarding of fellowships and scholarships during 1962.

Under a special Polish Science Program begun in 1957, four Polish fellows and one Polish scholar held appointments in 1961. Awards to Polish scientists are now being made through the regular programs in the medical and natural sciences and the agricultural sciences.

The Foundation in 1961 continued to appropriate funds for allocation to institutions where Foundation fellows are engaged in study and research. Recognizing that the disparity between universities' expenses and their income from tuition and fees is most apparent at the advanced level of fellowship study, the Foundation made available \$500,000, to be disbursed in units of \$1,000 for each full year a fellow spends at a university and \$500 for each half year. The grants are unrestricted, and are in addition to tuition and other fees also paid by the Foundation through its fellowship awards. Under this program in 1961, the Foundation sent funds amounting to \$418,500 to 111 institutions in the United States and foreign countries.

Under the six regions of the world and India, which are discussed separately in the annual report, are listed the individuals whose Rockefeller Foundation Fellowships or Scholarships became active in 1961, and six fellows appointed in the same year by the Medical Research Council of Great Britain. The fellowships awarded by the British Council have been included because the fellows received guidance and supervisory assistance from Foundation fellowship advisors.

Each fellow and scholar is reported alphabetically by name under his country of origin. The following information is also included for each individual: date of birth; highest degree; major field of interest; type of award; institution with which recipient was affiliated when appointed; principal countries of study; date of award; and awarding agency.

## Organizational Information

### MEETINGS

The annual meeting of the corporation and a regular stated meeting of the Board of Trustees were held on April 5; a stated meeting of the Board of Trustees was held on December 5 and 6. Six regular meetings of the Executive Committee of the Trustees were held to take actions within the general policies approved by the Board.

### TRUSTEES

Dr. J. George Harrar was elected Trustee and President of the Foundation and on July 1 succeeded Mr. Dean Rusk who had resigned from both positions after being named Secretary of State in January, 1961.

Dr. Harrar first joined the Foundation in 1943 to initiate a cooperative agricultural operating program in Mexico, a forerunner to the establishment of similar cooperative research and training units in Colombia, Chile, India, and the Philippines. Dr. Harrar was transferred to the New York office in 1952 to become Deputy Director for Agriculture. He was named Director for Agricultural Sciences three years later and elected Vice-President of the Foundation in 1959.

Dr. Harrar is the seventh President in the history of The Rockefeller Foundation.

Mr. C. Douglas Dillon, Secretary of the Treasury, and Mr. Chester Bowles, special advisor to the President of the United States on Asian, African, and Latin American affairs, also resigned from the Board of Trustees early in 1961.

Other members and new Trustees elected in 1961 were Sir Oliver S. Franks (now Lord Franks of Headington), Provost of Worcester College, University of Oxford, England; Dr. Clifford M. Hardin, Chancellor of the University of Nebraska; the Reverend Theodore M. Hesburgh, c.s.c., President of the University of Notre Dame; Dr. Frank Stanton, President of the Columbia Broadcasting System; and

Mr. George D. Woods, Chairman of the Board of the First Boston Corporation, New York.

Retiring from the Board of Trustees on June 30, 1961, were Dr. Richard Bradfield, emeritus professor of agronomy, New York State College of Agriculture, Cornell University; Mr. Benjamin M. McKelway, editor of the *Evening Star*, Washington, D.C.; Mr. Robert A. Lovett, a partner of Brown Brothers Harriman and Company, New York; and Mr. Wallace K. Harrison, of the architectural firm of Harrison and Abramovitz.

Dr. Bradfield was made a Special Consultant for Agricultural Sciences in January, 1962.

#### OFFICERS AND STAFF

Dr. Kenneth W. Thompson, Director for Social Sciences, was elected Vice-President of the Foundation, effective October 1, 1961, after Dr. Charles W. Cole resigned from the position in September to become United States Ambassador to Chile.

Dr. Cole, a distinguished economic historian and former President of Amherst College, joined the Foundation in 1960 as Vice-President to give special attention to the programs in the social sciences and the humanities.

Dr. Thompson first came to the Foundation in 1953 as Consultant for Social Sciences. He was appointed Associate Director in 1957 and Director in 1960. Author of several books and a number of articles in the field of international relations, Dr. Thompson taught at Northwestern University and at the University of Chicago.

In the absence of a Director for Social Sciences, Dr. Leland C. DeVinney, Associate Director, has been acting in charge of the program. Dr. Charles B. Fahs, Director for Humanities, was granted a six-month leave beginning in October, and Mr. Chadbourne Gilpatric, Associate Director, was appointed to act in charge. In March, 1962, Dr. Fahs resigned to become Minister Counselor for Cultural and Public Affairs at the United States Embassy in Tokyo, Japan.

During 1961 several new appointments were made in the different programs. Mr. Kenneth Wernimont, formerly Assistant Director for Agricultural Sciences, was appointed Assistant Treasurer. Mr. Jesse P. Perry, Jr., formerly Assistant Treasurer and Executive Assistant, was named Assistant Director for Agricultural Sciences.

In the Social Sciences, Dr. Charles M. Hardin joined the staff as Associate Director, and Dr. Gerald Freund, formerly a Consultant, was named Assistant Director. Mr. Walter Salant served as a part-time Consultant during the year. In 1962, Dr. Robert L. West and Dr. Ralph Kirby Davidson joined the staff for Social Sciences as Assistant Director and Consultant, respectively. Dr. Davidson was assigned to Makerere University College, Kampala, Uganda, one of three schools comprising the new University of East Africa.

In the Humanities, Dr. Robert W. Crawford joined the staff as Assistant Director, and Dr. John P. Harrison, formerly Assistant Director, was named Associate Director.

Dr. Wilbur G. Downs, formerly Director of the Trinidad Regional Virus Laboratory, was appointed Associate Director for Medical and Natural Sciences with administrative responsibility for its virus program. In 1961, work began on plans for transferring the New York virus laboratories to New Haven, Connecticut, where studies will be conducted in close association with the Department of Epidemiology and Public Health of the Yale University School of Medicine. Dr. Robert F. Loeb, former Trustee of the Foundation and Bard Professor of Medicine at Columbia University, served during 1961 as a Special Consultant for Medical and Natural Sciences.

Other changes in the Medical and Natural Sciences included the transfer of Dr. Robert H. Kokernot, who had been on study leave, to Cali, Colombia, where he is working with members of the Department of Preventive Medicine and Public Health of the University of Valle in developing a virus research program; the appointment of Miss Elizabeth

A. Winegar as a temporary staff member assigned to Cali to assist Dr. Guy S. Hayes, Assistant Director, with a regional community health program; the transfer of Dr. Joe D. Wray, who had been stationed in Turkey, to Cali as a visiting member of the Department of Pediatrics of the University of Valle, succeeding Dr. Robert H. Lennox, who completed his temporary appointment there during the year; and the transfer of Dr. Donald E. Carey, who had been on the staff of the New York virus laboratories, to the Virus Research Centre in Poona, India, with assignment to the Christian Medical College in Vellore.

Several new appointments and reassignments were made during the year in the agricultural programs in Chile, Colombia, India, Mexico, and the Philippines.

Dr. John S. Niederhauser, formerly Plant Pathologist in Mexico, was appointed to head the recently established Inter-American Potato Improvement Project with headquarters in Mexico City; Dr. Robert K. Waugh, Animal Scientist with the Colombian Agricultural Program in 1960, was named Assistant Director of that program; Dr. William H. Hatheway, formerly Assistant Statistician in Colombia, was made Associate Statistician with the Mexican Agricultural Program; Dr. Robert W. Romig, Associate Geneticist with the Chilean Agricultural Program in 1960, was appointed Geneticist; Dr. Peter R. Jennings, formerly Associate Geneticist in Colombia, was named Pathologist with the International Rice Research Institute in the Philippines; Dr. Delbert T. Myren, formerly Associate Information Specialist with the Mexican Agricultural Program, was made Information Specialist; Dr. Bobby L. Renfro, formerly Assistant Plant Breeder with the Indian Agricultural Program, was made Assistant Geneticist; Dr. William R. Young, formerly Associate Entomologist in Mexico, was appointed Entomologist with the Indian Agricultural Program; and Dr. Daniel D. Hagen, Associate Animal Pathologist with the Mexican program in 1960, was named Animal Pathologist.

Appointed to the field staff in 1961 were Dr. Wayne

Freeman, Plant Breeder in India; Dr. Melvin G. Greeley, Assistant Animal Scientist in Chile; Dr. Dale D. Harpstead, Associate Geneticist in Colombia; Dr. Ned S. Raun, Associate Animal Scientist in Mexico; Dr. Jerome H. Maner, Assistant Animal Scientist in Colombia; Dr. James C. Moomaw, Agronomist with the International Rice Research Institute in the Philippines; Dr. Milton E. Morris, Assistant Information Specialist in Colombia; and Dr. Lyndon B. Carew, Assistant Animal Scientist in Colombia.

A number of temporary staff members were also assigned during the year. They included Dr. Robert M. Hagan, Dr. Milton Fireman, Dean Robert W. Hodgson, and Mr. Warren W. Sahs, to the Indian Agricultural Program, and Dr. Royse P. Murphy, to the Chilean Agricultural Program.

Dr. Alvin A. Johnson, Seed Production Specialist in India, and Dr. Herbert L. Everett, Geneticist in Mexico, completed temporary assignments during the year. Resigning from the field staff in 1961 were Dr. David H. Timothy, Associate Geneticist with the Colombian Agricultural Program, and Dr. Roderic E. Buller, Agronomist with the Mexican Agricultural Program.

Six Foundation staff members were on special assignment during 1961. Dr. John C. Bugher was at the University of Puerto Rico as Director of the Puerto Rico Nuclear Center throughout the year. Dr. Robert F. Chandler, Jr., Associate Director for Agricultural Sciences, has been serving since 1959 as Director of the International Rice Research Institute in the Philippines; Mr. Robert Letort, formerly Assistant Treasurer of the Foundation, has been Treasurer of the institute since 1960. In the Medical and Natural Sciences, Dr. Osler L. Peterson, Assistant Director, continued as a visiting lecturer at the Harvard Medical School, and Dr. J. Austin Kerr, a member of the field staff, was again on assignment with the Pan American Health Organization. In September Mr. John Marshall resumed his position as Director of the Villa Serbelloni, Bellagio, Italy, after being on study leave earlier in the year.



## Summary of Appropriations Account

### FUNDS AVAILABLE

Balance, Appropriations Account, December 31, 1960	None
Income, 1961	\$23,709,683
Amount transferred from Principal Fund as of December 31, 1961	11,336,395
Unused balances of appropriations allowed to lapse and refunds on prior year grants	1,467,339
	<u>\$36,513,417</u>

### FUNDS APPROPRIATED

Appropriations <sup>1</sup>	
Agricultural Sciences	\$ 8,712,650
Humanities	4,666,090
Medical and Natural Sciences	9,619,635
Social Sciences	4,304,510
General	5,972,598
Administration and Supporting Services	3,237,934
	<u>\$36,513,417</u>

## Principal Fund

Book value, December 31, 1960	\$129,323,164
Additions during the year	2,677,853
	<u>\$132,001,017</u>
Less amount transferred to Income Account	11,336,395
	<u>\$120,664,622</u>

<sup>1</sup> These totals include appropriations for grant-in-aid, fellowship, and scholarship funds to be allocated in 1962, and \$6,063,875 appropriated conditionally for later allocation and release, but do not include releases in 1961 applicable to appropriations made prior to January 1, 1961.



## UNITED STATES

The increasing attention which The Rockefeller Foundation is focusing on aid to the advancement of the less developed countries has of necessity influenced the nature of its activities in the United States. After several decades of concentration on support of scientists and scholars working at the frontiers of knowledge—an interest still reflected in some of the grants made in 1961—the Foundation is now making most of its new appropriations for projects which either directly or indirectly are aimed at increasing the effectiveness of this country's role on the international stage.

More specifically, this year's grants for projects in the United States can be classified under three general headings in addition to the support of research as such: the advanced training of foreign professionals who will return home to work for the progress of their own countries; the strengthening of the international activities of certain United States organizations; and the encouragement of studies designed to increase knowledge and awareness of the cultures of other regions on the part of this country's scholars and the general public.

### *The training of foreign professional personnel*

As has been said before in this report, the main responsibility for educating future leaders in developing areas of the world must rest ultimately with local universities. It remains true, nevertheless, that until these institutions reach the point at which they can shoulder the full burden, many of the promising young people of these regions must go to the advanced countries to find the education they need.

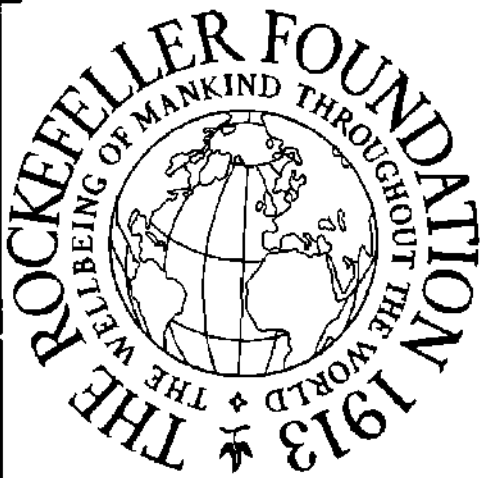
Perhaps no discipline more urgently requires a cadre of highly qualified professionals than that of demography and population dynamics. Experts are needed in increasing numbers to study and define population trends and to analyze their implications for the economy, the levels of living, and the health, education, and social well-being of the peoples concerned. Without them, mounting rates of population growth may stifle all efforts to raise living standards.

It was to deal with these problems that the Population Council, with headquarters in New York, was incorporated in 1952. Its work has been concentrated on population studies and on the training of population experts. Since 1953 the council has given fellowships to 153 men and women, half of the awards having been made since 1958. Many of the fellowships are for advanced study in demography and related fields, but a substantial number are given for medical and biological training in the physiology of reproduction. The latter ordinarily take the form of apprenticeships in laboratories associated with the council.

The Rockefeller Foundation, which began its support of the Population Council's fellowship program in 1958, renewed its aid in 1961 with a five-year grant of \$552,000.

One of the major centers in this country for research on demographic problems is the Office of Population Research at Princeton University. In addition to producing important scholarly studies, the office conducts workshop-seminars adapted to the special interests and backgrounds of the different students. The Population Council sends a number of its fellowship holders to the Princeton center. A 1961 Foundation grant of \$72,580 will provide partial support of the office's workshops for foreign students over the next six years.

The Foundation is also giving assistance to studies of population distribution and fertility in the United States now in progress at the Population Research and Training Center of the University of Chicago. One part of the work, in which the university's National Opinion Research Center is



*A foreign graduate student in demography, Princeton University.*

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*A population seminar at Princeton.*



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cooperating, concerns population groups in the rural South, the Midwest, and the environs of Chicago which have fertility rates from 25 to 60 per cent above the national average. Through a second study it is hoped to throw light on the still obscure causes and results of internal migration or changes in domestic population distribution and composition. Each year a number of graduate students receive advanced research training by assisting in these studies. The Foundation's grant, of \$165,000, is available through June, 1965.

One of the interesting sidelights on world trends in the present decade is the increasing desire of people in many regions to learn English as their second language. The chief obstacle to their mastery of this difficult language is apparently the nature of the instruction which they receive. Various countries have adopted different methods of dealing with the problem, and the Foundation is currently giving assistance to two of these plans.

The United Arab Republic is attacking the problem from the top down, beginning with the training in this country of nine linguists to the Ph.D. level who can return to direct and guide the upgrading of teachers concerned with language instruction in the entire school system. With Foundation assistance these linguists have studied at the Universities of Michigan and Texas, and Cornell University. Over the next five years, another group of twenty will attend Brown University, which has begun a program leading to the degree of Master of Applied Linguistics: English. Upon their return home after graduation, this group will develop curricula, textbooks, and teaching methods, and supervise teacher training in the use of the new materials and procedures in the classroom. Correlated with the program is a plan by which American linguists may go to the United Arab Republic to assist local personnel in research and to advise Egyptian agencies on problems in English language teaching; these visits are being arranged by an advisory council of representatives from Brown, Texas, and Cornell. In 1961 the Foundation made a five-year grant of \$368,000 for the new program at Brown University.

Another country where English has long been the official second language, the Philippines, has been seeking to improve instruction through cooperation with the University of California at Los Angeles. Foundation support for this effort, which began in 1957, was continued in 1961 with a four-year grant of \$430,500 to the University of California.

The principal activities under the plan are conducted by the Philippine Center for Language Study, a private bi-



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*Language laboratory, Brown University.*

national body established in Manila at the invitation of the Philippine government, and substantially supported by that government, the government of the United States, and private sources. With American and Philippine codirectors and staffed by linguists and specialists from both countries, the center concentrates on the production of instructional materials for teachers and pupils, the supervision and testing of their use in schools throughout the islands, and the training, under the sponsorship of the Department of Education, of teachers and administrators.

In Los Angeles, Philippine personnel study in specialized courses for one-year periods, and students of both nationalities conduct research on linguistics.

The emergence into independent sovereignty of a large group of formerly colonial or dependent territories has inevitably created a vast array of problems, one of the less noticed of which is the difficulty of staffing the required diplomatic posts in the major capitals, including especially the United Nations. Many of these nations are cooperating with the

Carnegie Endowment for International Peace in a plan for training junior members of their diplomatic corps in the procedures of multilateral diplomacy.

The endowment's plan has several parts. One consists of fellowships awarded to younger foreign service officers for study at Columbia University in the United States and at the Graduate Institute of International Studies in Geneva, Switzerland. At both locations the fellows are encouraged to take courses in international law and organization, international economics, and the history of diplomacy. Core seminars on foreign office organization and diplomatic practice regularly bring the members of each group together throughout the year.

For younger diplomats who cannot take full time for study, the Carnegie Endowment offers in-service seminars in Washington and New York on foreign policy formation and the procedures of diplomacy. Similar seminars are to be given in several of the other important capitals of the world.

The endowment has now completed plans for still a third type of training in the form of institutes of diplomacy established on a regional basis in Africa and Asia. These institutes, to be attended by officials from foreign offices in each area, will offer concentrated instruction in diplomatic procedures and practice, with emphasis on the problems of particular concern in the region.

The Rockefeller Foundation has assisted the Carnegie Endowment's work in this field since 1959, and this year renewed the aid with a grant of \$250,000, available through September, 1963.

The improvement of corn as a means of achieving greater yields of this basic food crop of Latin America has been a central preoccupation of the Foundation's agricultural programs from the beginning. Recently, two universities in the United States have undertaken basic studies to undergird plant breeding and hybridization methods with deeper and more fundamental knowledge of the principles



involved. At North Carolina State College in Raleigh the research is focused on population genetics, with special application to corn, and at the University of Nebraska, on the fundamentals of corn genetics. In both cases an important corollary of the work is the training of plant breeders badly needed in Latin America; a number of the students are Rockefeller Foundation Fellows who will return to their own countries to cooperate with the Foundation's Inter-American Food Crop Improvement Program. A special objective of the Nebraska studies is to explore the vast range of indigenous germ plasm collected in Mexico and Colombia by Foundation staff, in a search for new genes to enrich North American commercial corn varieties.

The Foundation has supported both these research programs, and in 1961 contributed a further \$60,000, available for five years, to the work at the University of Nebraska.

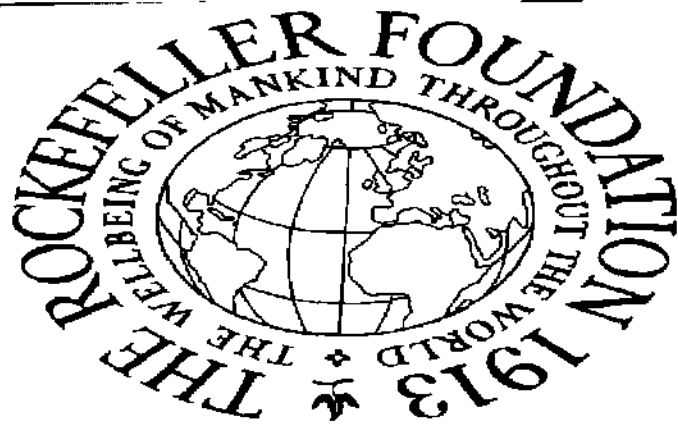
Whether solar energy can economically be harnessed for man's use is a question that has long occupied the attention of the Solar Energy Laboratory of the University of Wisconsin, in Madison. One of the possible applications of solar energy techniques is to the cooling and drying of agricultural products and to the pumping of irrigation water on a community-wide basis. Solar energy refrigeration would be of immense value in the preservation of food and crop seeds in the semiarid regions of the world. Working with the laboratory staff are postgraduate students from India, Latin America, and the Far East learning the techniques of solar energy utilization. In continuance of previous aid, the Foundation has made a three-year, \$135,000 appropriation for the laboratory's work on applying solar energy techniques to rural and agricultural needs.

Three other grants made this year for the training of overseas personnel in United States institutions illustrate the variety of such programs being offered in this country.

Since 1954 Union Theological Seminary in New York has annually brought to this country from 20 to 25 younger



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*A graduate student from India studying solar drying of grains at the University of Wisconsin.*

religious leaders from all over the world to study the moral, ethical, and intellectual questions confronting society today. The Foundation helped with the initiation of this fellowship plan, and this year made a five-year grant of \$100,000 in further support while the seminary conducts a campaign to give the plan permanent status.

The Crowley Experiment Station of Louisiana State University, one of the important centers for the study of the rice plant and its management and improvement, has long attracted foreign students, especially from countries where rice is the principal staple of the diet. A three-year grant of \$36,000 made in 1961 continues Foundation assistance for both the research and the expenses of the training of foreign students.

*A solar reflector-thermoelectric generator system used in studies of the conversion of solar to electrical energy, University of Wisconsin.*

Because of differences in the type of medical education offered abroad and in the United States, many medical students coming here for graduate training find themselves at a disadvantage in the early stages of their study. For a number of years the Foundation has been supporting two plans for overcoming this disadvantage, one a special orientation course for foreign students offered at the Cornell University Medical College in New York, and the other a series of refresher courses given at Tulane University principally for students from Latin America. In 1961 the program at Tulane received a new five-year grant of \$196,000 from the Foundation. Since the university inaugurated the refresher courses in 1957, some 69 students have taken them prior to going into residencies or graduate work. Among these have been 57 Rockefeller Foundation Fellows from 10 countries.

A fourth grant, for a training plan in archaeology conducted by the University of Pennsylvania in Guatemala, is described in the Latin American section of this report.

#### *International activities of U.S. institutions*

A second group of grants made in 1961 reflect concern with the international as opposed to the domestic activities of a number of institutions in the United States.

Since its establishment in 1876 the Association of American Medical Colleges has strongly influenced the upgrading of medical education in this country. In recent years the association has been more and more called on to give advice and help to overseas medical colleges, especially in regard to the exchange of professional personnel. To increase the effectiveness of its operations in the extended sphere, the association has established a Division of International Medical Education. One aim of the division, in relation to exchange projects, is to match the right man to the right job both in the recruitment of American medical faculty members for overseas assignments and in the appropriate placement of foreign medical educators in this country. As a step toward

this goal the association is creating a roster of medical teachers in the United States available for overseas assignment, correlated with an index of the needs for specialized personnel in institutions abroad. The Foundation has aided the setting up of the new office with a grant of \$50,000.

Another organization established for essentially domestic purposes—the American Library Association—has in recent years also extended its sphere of influence to many other regions. Its International Relations Office, created in 1956, implements a wide range of activities for the improvement of library and documentation practices and for the betterment of the philosophy of the role of libraries in the scientific and scholarly world. In more than 25 countries the office has helped formulate development and training projects and given assistance to official and private agencies in the estimation of library requirements. Most of the countries of Asia, Africa, and Latin America are on the list of those assisted by the office, as well as several in the Far East.

In 1961 the Foundation continued its long-standing support of the American Library Association with a \$175,560 grant for the work of the International Relations Office, to run until the fall of 1966, and two others amounting to \$95,645 for special projects in library science in Taiwan and the Philippines.

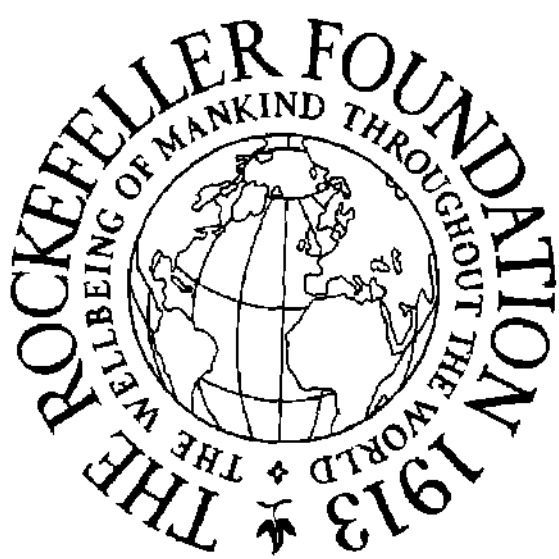
Administering international personnel exchange programs has been the central activity of the Institute of International Education, New York, since its founding in 1919. It presently handles the educational exchange programs of the United States government, such as those under the Fulbright and Smith-Mundt acts, and assists foreign governments and private organizations with their exchange activities. In 1960-1961 alone it took care of the placement of over a thousand United States citizens in foreign countries, and of nearly 1,800 foreign students and teachers in this country. To increase the efficiency of its work, the institute is opening new field offices abroad, with the partial aid of a \$250,000 grant from the Foundation.

The Foundation also cooperates with several universities in support of their work with overseas institutions.

Two 1961 grants of \$200,000 each made to the University of California, Berkeley, come within this classification. One is for a program of research and training in which the university cooperates with the Center of Economic Research in Athens. Under the direction of a former member of the economics department at Berkeley, the center in Athens is engaged in high-level studies of the Greek economy as well as planning for the country's future development. Strong emphasis is also being given to the training of young Greek economists through in-service experience in Athens and fellowships for advanced study at Berkeley. The Foundation's appropriation will help meet the expenses of the collaborative effort over a five-year period.

The second grant, also for a five-year period, will enable the political science department at Berkeley to send some of its members for teaching service at selected universities in Africa, Asia, and Latin America, for periods of one to two semesters each. The foreign experience thus acquired will reinforce the department's long-standing research interest in the political and international problems of developing nations. Those who have gone abroad and their colleagues will take part in a faculty seminar established to study various aspects of political processes in new countries.

As mentioned elsewhere in this report, two smaller 1961 grants were made to facilitate cooperation between American universities and the University of Valle, in Cali, Colombia. One of \$75,000, available for a period of three and a half years, will help the University of Tennessee, in Memphis, to continue to send professors from the Institute of Clinical Investigation to teach and conduct research in the Cali medical school. The other, of \$36,000, aids Wayne State University, Detroit, Michigan, with the expenses of sending a professor of economics to work at Cali until the return of Colombian economists who are now studying in the United States.



*At the Russian Institute, Columbia University, a researcher reads a copy of Izvestia.*

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**To increase awareness of other regions**

Several grants made in 1961 have the common denominator of supporting institutes and study centers in American universities devoted to investigations of particular foreign countries and regions.

The Russian Institute of Columbia University, established in 1946 with partial aid from the Foundation, has trained about 60 per cent of present specialists on Russia in this country. It has awarded more than 300 certificates to students completing the basic two-year program and guided the work of 74 doctoral degree candidates. In recent years the institute's curriculum has been strengthened by the addition of graduate programs on East-Central Europe, joint seminars with the East Asian Institute on Sino-Soviet relations, and new projects on Eastern Europe and Soviet history and culture. Its publication series, *Studies of the Russian Institute*, numbers more than 20 volumes. The Foundation has renewed its aid this year through a seven-year appropriation of \$300,000.

In a plan designed to stimulate research and teaching on Latin America, Columbia University is inviting social scientists from other institutions to spend a year of specialized study in New York. The visiting scholars work with Columbia faculty specialists on Latin American economics, political science, anthropology, and history, have entree to

special library facilities in New York, and take advantage of the presence in the city of Latin American delegations to the United Nations. A Foundation grant of \$30,000 is helping to defray some of the expenses of the plan.

In a somewhat similar plan, New York University annually appoints a visiting professor of political science from outside the city who can devote his time in New York to the study of some aspect of the operations of the United Nations. A great many junior members of delegations to the United Nations take courses at New York University, and increased research on the work of the organization should have reciprocal benefits. The Foundation is providing partial support for the plan with a grant of \$30,000 for a four-year period.

The problems of the Caribbean region have long been a special interest of the University of Florida, Gainesville, located in a state having close geographical and historical ties with the Spanish and French traditions of the area. Through the help of a \$130,000 grant from the Foundation, the university is expanding its studies of the historical and contemporary forces shaping the territories and nations of the Caribbean.

In Washington, D.C., the School of Advanced International Studies of Johns Hopkins University is enlarging its facilities through the construction of a new building, toward the costs of which the Foundation has contributed \$500,000.

Graduate students at the school specialize in disciplinary fields such as international economics, international politics and diplomacy, comparative government, and international law and organization, and on a particular region such as the Middle East, Africa, Asia, Europe, or Latin America, a combination designed to permit specialization without loss of breadth or perspective.

The Johns Hopkins University Washington Center of Foreign Policy Research is being integrated more closely with the school's regular program and will form the core of

its expanded research activities. Staffed by both scholars and practicing diplomats, the center has produced major studies of United States foreign policy that have helped to narrow the gap between theories of international relations and actual practice.

The location of the school's new building near the Brookings Institution enables the two organizations to share facilities and to collaborate more closely on research topics of mutual interest.

Two of the Foundation's 1961 grants support research on the problems of newly independent nations. One of \$200,000 aids a five-year program at Harvard University's Center for International Affairs focused on the social and political development of these nations.

Groundwork for the investigations was laid by the center through recent studies and faculty seminars on the role of government and private enterprise in the development process; on social, political, and economic factors in modernization; and on area studies of several regions. Under the new program, faculty members and visiting scholars will devote a year or more to the study of similar questions, many of them while in residence at African, Asian, and Latin American institutes and universities, where they will also assist in teaching and in developing fields of instruction.

The second grant, of \$40,000 for a four-year period, will assist Professor Rondo E. Cameron of the University of Wisconsin to conduct research on the role of financial institutions in economic development. Professor Cameron, who is director of the university's Graduate Program in Economic History, is examining the development of public policies toward banking in Latin America and continuing his historical research on the same topic in Western Europe. His recent volume, *France and the Economic Development of Europe, 1800-1914*, traces the contribution of banking to the evolution of European countries.



*The advancement of knowledge and its application*

In American universities and research institutions, the advancement of knowledge through research, its application for the benefit of society, and the training of advanced students are aspects of a single ongoing process; financial aid to one part of the process cannot be without its effect on the others. In making the following grants, however, the primary concern of the Foundation has been to encourage the increase of knowledge in fields of special relevance to its program interests.

The Harvard University Economic Research Project directed by Professor Wassily Leontief, for which the Foundation has appropriated nearly half a million dollars since 1947, in 1961 received a new grant of \$250,000 for a seven-year period beginning in July, 1962. The research proposed for the next several years is intended to improve the present performance as well as extend the capabilities of the input-output technique, a method developed by Professor Leontief for analyzing the interrelations between the many sectors of an economy and for determining the effects of various changes upon both the interrelated parts and the economy as a whole. In particular, efforts will be made to increase the capacity of the technique to take account of technological changes, the effects of consumer purchasing, the nature of the labor inputs in various regions, and the possibility of establishing regional as well as industrial sectors in the analytical breakdown of an economy.

The input-output technique is being used in a number of countries in addition to the United States, and one of the by-products of the project is the training of skilled investigators able to direct and carry on this kind of research in other places.

Three of this year's grants reflect the Foundation's interest in advancing fundamental knowledge in agriculture.

At the Earhart Laboratory for Plant Research of the California Institute of Technology, Pasadena, Dr. James

Bonner and his colleagues are studying the mechanisms by which plants adjust to their environment, with particular reference to their responses to excessively high or low temperatures and to the effects of moisture stress and drought. The Foundation has made a grant of \$90,000 in partial support of these studies over the next three years. The work may throw light on how the range of food crops might be extended into semiarid or frigid environments.

In the apparently well-watered or humid eastern section of the United States, water shortage may seem a remote threat, but the large areas taken for new housing, industrial plants, and highways are already affecting ground water supplies, and the further impoundment of excess stream water has proved inadequate for the requirements of urban and industrial development. Can the amount available be in-

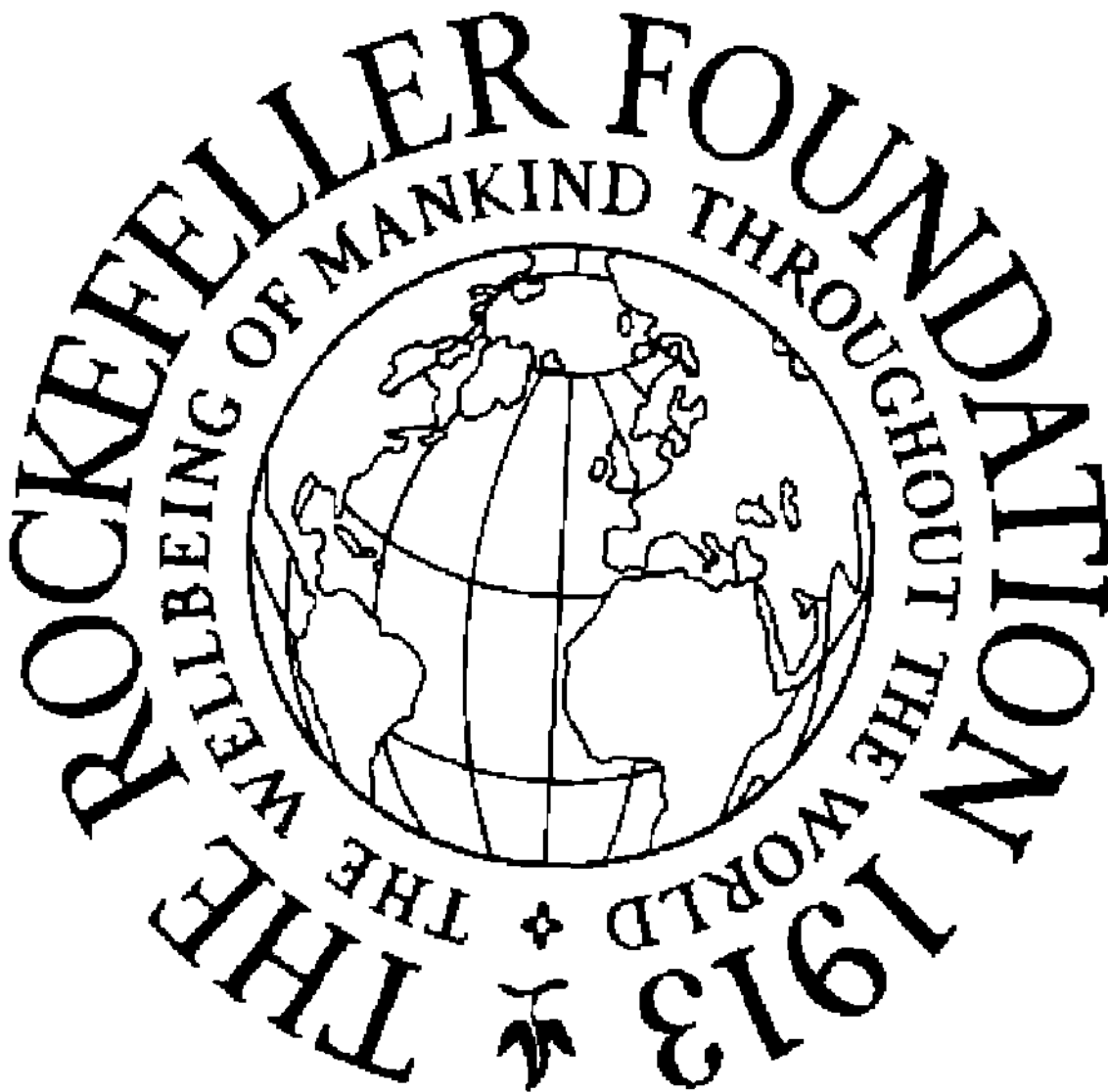


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*Students in the Harvard Economic Research Project discuss an interregional trade model.*

creased through better watershed and ground water management?

Workers at the School of Forestry of Duke University are investigating ways in which forests can be used as cover crops that collect and hold water, in order to determine how the maximum supply can be obtained from ground water sources fed by watersheds. Their research plans include basic studies of the mechanics of water storage, evaporation, and runoff; soil moisture movements; and the influence of various plants on water uptake and in transpiration. The Foundation is aiding these studies over the next five years with a grant of \$100,000.



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In Alaska, efficient land use and the economical provision of essential agricultural products within the state depend in large measure on the continued improvement of grasses and legumes for use as forage, turf, and cover crops. Scientists at the Agricultural Experiment Station of the University of Alaska, in College, and the University of Wisconsin have been cooperating in a study of this problem since 1956, and have already isolated certain genetic lines which possess unusual resistance to disease and have agronomic characteristics superior to those of most of the grasses and legumes now used in the 49th State. In 1961 the Foundation continued its support of this research for a further three-year period with a grant of \$39,000.

Two grants were made this year in the general field of community relations, both to institutions in the same state. At the University of Florida social scientists are studying the degree to which citizens in non-metropolitan Florida communities participate in local politics. One of the major aspects of their investigation is the question of how political leadership and the character of local political issues affect the extent of political interest and activity among local citizens.

At the Institute for Social Research of Florida State University, the subject of study is how research on local community problems may assist official and private citizens' groups to develop and carry out programs for community improvement. The topics being covered concern local conditions affecting the well-being of citizens, such as employment, income, housing, educational and recreational facilities, and other community services. The investigators will report their findings to all interested groups in the community for use in planning action programs, and subsequent studies will be made to determine the effectiveness of such projects.

*Testing a sensitive anemometer to be used in forest hydrology studies at the Duke University School of Forestry.*

The Foundation is assisting the University of Florida study through a three-year grant of \$66,000, and the one at Florida State University with an appropriation of \$110,000 for a similar period.

In support of its research program in international relations, the Center of International Studies at Princeton University has received a seven-year grant of \$150,000. Closely allied with the Woodrow Wilson School of Public and International Affairs and the university's departments of history, politics, and sociology, the center has pioneered in research on military affairs, international law, public opinion and foreign policy making, and the comparative study of non-Western political systems. Among the subjects to be looked into over the next few years are internal war, including guerrilla warfare, subversion, and infiltration, and political, social, and economic modernization.

One of the year's larger grants was made to the American Council of Learned Societies, New York, the principal agency concerned with developing and sustaining humanistic scholarship in the United States. The new appropriation, \$1 million, may be used either for endowment or directly for the general budget of the council.

Founded in 1919 and composed of about 30 constituent societies, the council is one of the four organizations which together represent the American scholarly and academic world through the Conference Board of Associated Research Councils; the others are the National Research Council, the Social Science Research Council, and the American Council on Education.

In its own fields the council operates through three types of activities; it provides research aid to individual scholars in the form of fellowships and grants; it plans and develops scholarly work on new problems and neglected fields in the humanities, largely through specialized committees or conferences; and it provides central administra-

tion for selection and other committees, for major continuing programs, and for a variety of special projects.

Between 1926 and 1960 the Foundation contributed nearly \$5 million to the council, much of this amount being for general support. The new grant will help to give long-range stability to the council's important functions.

The vast changes in the social order during the twentieth century, the emergence of many new states in the non-Western world, and the increasingly complex aspects of the mass societies in which many people now live, have called attention to the need for re-examination of many of the fundamental concepts on which organized society is based.

Can pre-examination of problems created by these forces contribute to their solution before they become politically urgent? Should traditional concepts of such subjects as political representation, freedom, and civil liberties be re-interpreted in terms of contemporary life? Will studies of political behavior throw new light on ideas of power, leadership, and the decision-making process?

In the area of international relations, can research on the emerging problems of foreign policy, diplomatic analysis and history, and theoretical formulation advance the long-range planning for the conduct of international affairs?

The Rockefeller Foundation, with the guidance of two advisory committees of distinguished scholars, is encouraging the search for answers to questions like these by means of grants to individual scholars pursuing research in international relations and legal and political philosophy. Some 26 allocations for studies in international relations amounting to \$142,870, and 28 for studies in legal and political philosophy amounting to \$149,320, were made in 1961 and are reported at the end of this section, though some were to scholars outside the United States.

## Grants Made in the United States

MNS: *Medical and Natural Sciences*; AS: *Agricultural Sciences*;  
SS: *Social Sciences*; H: *Humanities*; G: *General*; F: *Fellow*; S: *Scholar*

### UNITED STATES

#### NEW ENGLAND

#### Amherst College, Massachusetts:

Translation and publication of a series of documents and articles on the price and investment policies of *Electricité de France*; \$9,300; (SS)

Dr. Arnold B. Arons, professor of physics; to visit the University of Valle, Cali, Colombia, as a consultant on curriculum in physics; \$925; (MNS)

#### Brown University, Providence, Rhode Island:

Development of an English language teaching program in the United Arab Republic, under the direction of Dr. W. Freeman Twaddell, professor of linguistics; \$368,000 through June, 1967; (H)

A two-day conference of those Americans primarily concerned with the development of the English language teaching program in the United Arab Republic, under the chairmanship of Dr. W. Freeman Twaddell; \$2,000; (H)

Dr. J. G. Horsfall, director, Connecticut Agricultural Experiment Station, New Haven: to participate in scientific seminars, and to visit centers of agricultural research in India and Japan; \$2,100; (AS)

#### Harvard University, Cambridge, Massachusetts:

Economic research under the direction of Professor Wassily Leontief; \$250,000 for a seven-year period; (SS)

Center for International Affairs; studies of the social and political development of new nations; \$200,000 through August, 1966; (SS)

Russian Research Center; further study of the history of American Communism, by author Theodore Draper; \$25,000 for a two-year period; (SS)

Harvard Economic Research Project; study of investment and changes in the input structure in American manufacturing during the period 1955-1957; \$15,000; (SS)

Preparation of an annotated catalogue of a valuable collection of scientific papers on relativity, under the direction of Professor Gerald Holton, Department of Physics; \$9,980; (MNS)

Development of a new research and teaching program for the Department of Sanitary Engineering; \$9,500; (MNS)

Dr. Benjamin Castleman, clinical professor of pathology and head, Department of Pathology, Medical School, Boston; to assist in research and teaching in clinical pathology at the All-India Institute of Medical Sciences, New Delhi, and to visit other medical centers in India and the Far East; \$8,700; (MNS)

Harvard-Yenching Institute; to invite Han Woo-keun, professor of history, Seoul National University, Korea, to participate in the Visiting Scholars Program at Harvard University; \$6,000; (H)

Harvard-Yenching Institute; to enable Tek Tjeng Lie, Indonesian historian of Japan, to complete his Ph.D. requirements during the academic year 1961-1962; \$1,600; (H)

Massachusetts Institute of Technology, Cambridge: research into new processes of casting metal, by Alfred Duca, sculptor; \$5,000; (H)

Mount Holyoke College, South Hadley, Massachusetts: study of the legislative process in the West German Bundestag, by Gerhard Loewenberg, assistant professor of political science; \$5,300; (SS)

Museum of Fine Arts, Boston, Massachusetts: research on the Rayy textiles; \$7,500; (H)

Phillips Academy, Robert S. Peabody Foundation for Archaeology, Andover, Massachusetts: research on the origin and domestication of cultivated plant species in the region surrounding Tehuacán, Mexico; \$10,000 for a two-year period; (AS)

Tufts University, Fletcher School of Law and Diplomacy, Medford, Massachusetts: to help meet the expenses of a conference called to discuss the future role of the International Court of Justice, held at the Villa Serbelloni, Bellagio, Italy, during August-September, 1961; \$3,725; (SS)

University of Massachusetts, Amherst:

Professor Vincent Iardi, Department of History, and Professor Paul M. Kendall, Ohio University, Athens; to microfilm diplomatic documents dating from the Italian Renaissance; \$10,000 for a three-year period; (SS)

Research by the College of Agriculture on the effects of certain insecticides upon insects and wildlife; \$3,000; (AS)

Williams College, Williamstown, Massachusetts: to help meet construction costs for the Roper Public Opinion Research Center; \$10,000; (SS)



## Yale University, New Haven, Connecticut:

Development of a graduate training program for Africans at the Law School; \$30,000 payable as the university secures matching funds from other sources; (ss)

Research on the conditions of legitimate opposition and political stability in the development of democratic regimes, by Professor Robert A. Dahl, chairman, Department of Political Science; \$19,000 through August, 1964; (ss)

Research on the international protection of human rights, by Dr. Egon Schwelb, Law School; \$15,000 for a three-year period; (ss)

Center for Quantitative Study of Economic Structure and Growth; support of a conference on inflation and growth in Latin America, to be held in Buenos Aires, Argentina; \$10,000; (ss)

Completion of a study on American diplomacy at the Paris Peace Conference, 1918-1919, by Arthur C. Watworth, Jr., Pulitzer Prize-winning author; \$10,000 for a 30-month period; (ss)

Assistance and supplies for the School of Medicine in the development of plans for the proposed Rockefeller Foundation virus program, in conjunction with the Department of Epidemiology and Public Health; \$10,000; (MNS)

Professor Charles Runyon, assistant dean, Law School; to visit university schools of law in East and West Africa; \$3,585; (ss)

## MIDDLE ATLANTIC

American Council for Emigrés in the Professions, Inc., New York: administrative and other expenses of its general program concerned with the selection and placement of academically trained refugees; \$10,000; (G)

American Council of Learned Societies, New York: general support; \$1,000,000; (H)

American-Korean Foundation, Inc., New York: lighting equipment for the Korean Research Institute for Dramatic Arts, Inc., Seoul; \$17,000; (H)

Miss Helen Tomita, consultant, Asian Conservation Laboratory, Inc., New York: to accompany Oka Iwataro, Japanese art conservation expert, on a visit to Europe and the United States; \$2,700; (H)

## Carnegie Endowment for International Peace, New York:

Continued support of training programs for young foreign service officers from the newer nations; \$250,000 through September, 1963; (ss)

Research on problems of disarmament, by Walter Millis; \$25,000; (ss)

Carnegie Institute of Technology, Pittsburgh, Pennsylvania: research on the economics of the arts in the Graduate School of Industrial Administration; \$30,000 for a three-year period; (H)

Columbia University, New York:

Terminal grant for general support of the research program of the Russian Institute; \$300,000 for a seven-year period; (ss)

Development of an advanced science writing program at the Graduate School of Journalism; \$100,000 for a four-year period; (G)

Development of a program of specialized study on Latin America; \$30,000 for a five-year period; (ss)

Development of descriptive techniques for evaluation of folk and primitive music, by Alan Lomax, specialist in folk music, in cooperation with Professor Conrad M. Arensberg; \$10,000; (H)

To convert laboratory space for use in research by Professor Harry Grundfest, Department of Neurology, College of Physicians and Surgeons; \$10,000; (MNS)

Research in Europe on executive leadership in Great Britain and France, by Professor Richard E. Neustadt, Department of Public Law and Government; \$9,250 for a 15-month period; (ss)

Research in international relations, by Colonel Paul C. Davis, Institute of War and Peace Studies; \$9,000 for a two-year period; (ss)

Cornell University, Ithaca, New York:

A special orientation program for foreign graduate students, to be developed by the College of Agriculture; \$10,000; (AS)

Research at the Law School on the basic concepts of contract law in Islamic jurisprudence and their impact on the modern legal codes of Arab countries, by Salah Eldin Abdel-Wahab, judge and former professor of law in Cairo, United Arab Republic; \$6,000; (ss)

Dr. Allen Atwell, associate professor of art; to become familiar with important cultural centers and materials in Southeast Asia; \$4,250; (H)

To prepare for publication the results of studies on improved city design through conservation of existing architectural forms, by Associate Professor Barclay G. Jones, College of Architecture; \$2,750; (H)

Entomological Society of America, College Park, Maryland: to invite Dr. J. de Wilde, director, Entomological Laboratory, Agricultural University,

Wageningen, Netherlands, to participate in the society's annual meetings in November, and to visit centers of entomological research in the United States; \$1,600; (AS)

Haverford College, Pennsylvania: development of the Department of Biology; \$175,000 payable as the college secures \$125,000 from other sources; (MNS)

Institute of International Education, New York:

To establish overseas field and information offices; \$250,000 for a five-year period; (G)

A training program in the United States for three Tibetan students; \$10,000 for a three-year period; (H)

Lehigh University, Bethlehem, Pennsylvania: continued research on the British Empire before the American Revolution, under the direction of Professor Lawrence H. Gipson; \$24,000 for a two-year period; (H)

Herbert Machiz, theatre director, New York: to direct a Brazilian production and conduct a six-week seminar at the Theatre School, University of Bahia, Salvador, Brazil; \$3,850; (H)

National Board of Medical Examiners, Philadelphia, Pennsylvania: to improve the clinical and practical examination given to interns; \$28,000; (MNS)

National Educational Television and Radio Center, New York: to invite R. M. Sutarto, director, Indonesian State Film Company, Djakarta, to visit film and educational television centers in the United States and Canada; \$8,900; (H)

New York Public Library, New York: to develop a program under which the official gazettes of foreign countries can be made readily available for scholarly and professional use; \$7,400; (H)

New York University, New York: research on the processes of multilateral diplomacy and other problems of the United Nations, by visiting scholars in the Department of Government; \$30,000 for a four-year period; (SS)

Pennsylvania State University, University Park: to send four pomology specialists to assist in the deciduous tree fruit research at the National Institute of Agricultural and Livestock Technology, Buenos Aires, Argentina; \$5,800; (AS)

Pittsburgh Plan for Art, Pennsylvania: to help meet the expenses of an exchange program with other regional rental galleries; \$1,975; (H)

Population Council, New York: demographic and medical biological fel-

lowships for candidates from Asia, Latin America, the Middle East, and Africa; \$552,000 for a five-year period; (G)

Princeton University, New Jersey:

Research in international relations and contemporary world problems at the Center of International Studies; \$150,000 for a seven-year period; (ss)

To establish a new workshop for training in demographic problems at the Office of Population Research; \$72,580 for a six-year period; (ss)

Research and writing on Lenin and the origins of the Soviet Union's foreign policies, by Louis Fischer, research associate, Center of International Studies; \$8,000; (ss)

Research Foundation for Mental Hygiene, Inc., Albany, New York: expenses of Dr. E. T. O. Slater, director, Medical Research Council Psychiatric Genetics Unit, London, England, and Professor Erik Strömngren, professor of psychiatry, Aarhus University, Denmark, in connection with their participation in a symposium held at the New York State Psychiatric Institute, College of Physicians and Surgeons, Columbia University, New York; \$2,100; (MNS)

Rutgers, the State University, New Brunswick, New Jersey: to appoint Dr. Vladimir Musilek, Biological Institute, Czechoslovak Academy of Sciences, Prague, as a visiting postdoctoral fellow in the Institute of Microbiology; \$4,800; (MNS)

Scarsdale Foundation, New York: support of the "Our Town—Overseas" project; \$3,000; (G)

Dr. Francis T. Bonner, chairman, Department of Chemistry, Long Island Center, State University of New York, Oyster Bay: to visit the University of Valle, Cali, Colombia, as a consultant on curriculum in chemistry; \$925; (MNS)

Theatre, Incorporated, New York: expenses of a modern dance program, conducted by the League of Contemporary Choreographers; \$10,000; (H)

Union Theological Seminary, New York: development of the Program of Advanced Religious Studies; \$100,000 for a five-year period; (H)

Albany Medical College, Union University, New York: development of a special course of instruction for foreign medical graduates; \$7,500; (MNS)

United Board for Christian Higher Education in Asia, New York: to enable William Pfeiffer, director, School of Music, Silliman University, Dumaquete City, Philippines, to study musicology at the University of Hawaii, Honolulu; \$4,650 for a two-year period; (H)

## University of Pennsylvania, Philadelphia:

Development of archaeological field work and training, to be conducted by the University Museum, principally at Tikal, Guatemala; \$118,000 through February, 1964; (H)

Continued research on the structure of the American economy, under the direction of Professor Lawrence R. Klein, Wharton School of Finance and Commerce; \$8,000; (SS)

Dr. Domingo M. Aviado, associate professor of pharmacology, School of Medicine; to observe research and teaching in physiology and pharmacology at medical institutions in Poland, at the invitation of the Polish Academy of Sciences; \$1,100; (MNS)

Dr. Edwin M. Shook, director of the archaeological project of the University Museum at Tikal, Guatemala; to discuss an archaeological training and maintenance program with university and government officials in Guatemala; \$770; (H)

University of Puerto Rico, San Juan: exchange of the teaching personnel of the School of Medicine with those of other medical schools in the continental United States, Latin America, the Caribbean region, and Europe; \$10,000; (MNS)

Completion, publication, and distribution of an exploratory study, by an ad hoc citizens' committee, of voluntary health and welfare agencies in the United States; \$16,500; (G)

To enable Dr. Warren Weaver, retired Vice-President for Natural and Medical Sciences, The Rockefeller Foundation, to document the informal aspects of the history of the Foundation's science programs; \$5,500 for a two-year period; (G)

## SOUTH

American Institute of Biological Sciences, Washington, D.C.: to help meet the expenses of adapting revisions in biological curricula for use in foreign countries; \$10,000; (MNS)

Dallas Theater Center, Texas: support of a fellowship program in the repertory theatre, under the direction of Paul Baker; \$14,000 payable during a two-year period as the center secures an equal amount from other sources; (H)

Duke University, Durham, North Carolina: studies in forest hydrology at the School of Forestry; \$100,000 for a five-year period; (AS)

Florida State University, Tallahassee: research on community problems

and the role of the biracial committee in a Southern city; \$110,000 for a three-year period; (ss)

International Schools Foundation, Inc., Washington, D.C.: general support; \$10,000; (G)

Johns Hopkins University, Baltimore, Maryland:

Development of the School of Advanced International Studies, Washington, D.C.; \$500,000; (ss)

Completion of a history of United States Middle East policy from 1917 to 1928, by Dr. Laurence Evans, research associate, Middle East Center; \$10,000; (H)

Dr. Majid Khadduri, professor of Middle East studies, School of Advanced International Studies, Washington, D.C.; to visit Europe, North Africa, and the Middle East in connection with research on political trends in the Middle East; \$3,000; (ss)

Dr. Cornelius W. Krusé, professor of sanitary engineering, School of Hygiene and Public Health; to assist in the preparation of an undergraduate program in sanitary engineering at the University of Valle, Cali, Colombia; \$830; (MNS)

Louisiana State University, Baton Rouge: research in genetic and cytogenetic relationships in rice in the Department of Agronomy; \$36,000 for a three-year period; (AS)

National Academy of Sciences—National Research Council, Washington, D.C.:

Continuing study of the biological effects of atomic radiation on living organisms; \$10,000; (MNS)

To establish and maintain within the Office of Scientific Personnel information on college and university personnel in the United States who might be willing to accept assignments abroad during sabbatical leaves; \$9,000 for a three-year period; (G)

Expenses of the Second International Symposium on Space Research, held under the auspices of the Committee on Space Research in Florence, Italy, during April, 1961; \$5,000; (MNS)

Support of the Inter-American Conference on Mathematical Education, held during December, 1961; \$5,000; (MNS)

North Carolina State College, Raleigh: development of studies in cytogenetics; \$2,000; (AS)

Southern Regional Council, Inc., Atlanta, Georgia: contribution toward its general expenses; \$50,000; (G)

## Tulane University of Louisiana, New Orleans:

Development of a training program for foreign fellows in the natural and biological sciences in the Department of Biochemistry, School of Medicine; \$196,000 for a five-year period; (MNS)

Mrs. Cloace Ferguson McGill, assistant, Division of Epidemiology, Department of Tropical Medicine and Public Health, School of Medicine; to observe current training and practices in public health nursing at schools of nursing in Brazil, Chile, and Colombia; \$2,075; (MNS)

United States Department of Agriculture Graduate School, Washington, D.C.: a course in science reference and bibliography for agricultural librarians from other countries; \$680; (AS)

United States Department of Agriculture Library, Washington, D.C.: to prepare a subject heading guide for use in agricultural libraries; \$35,000 for a two-year period; (AS)

## University of Florida, Gainesville:

Development of a program of faculty and graduate research on the Caribbean region; \$130,000 for a four-year period; (H)

Study of political participation and leadership in non-metropolitan Florida communities; \$66,000 for a three-year period; (SS)

Dr. Lester R. Dragstedt, research professor of surgery, School of Medicine; to confer on the organization of teaching and research in surgery with officials of Latin American medical schools; \$4,800; (MNS)

University of Kentucky, Lexington: completion of a study of factors associated with the academic achievement of students at the University of the Punjab, Lahore, Pakistan, by Dr. Joseph J. Mangalam, assistant professor of rural sociology; \$6,000; (SS)

## University of Tennessee, Memphis:

To continue a faculty exchange program between the Institute of Clinical Investigation and the Department of Physiological Sciences, Faculty of Medicine, University of Valle, Cali, Colombia; \$75,000 through June, 1965; (MNS)

Exchange of personnel between the Institute of Clinical Investigation and the Faculty of Medicine, University of Valle, Cali, Colombia; \$10,000 through June, 1962; (MNS)

Dr. Thomas H. Hunter, dean, School of Medicine, University of Virginia, Charlottesville: to visit the Faculty of Medicine, University of Valle, Cali, Colombia; \$1,700; (MNS)

Virginia Polytechnic Institute, Blacksburg: to equip a new classroom and laboratory building for the Department of Biochemistry and Nutrition; \$7,500; (AS)

## CENTRAL WEST

American Bar Foundation, Chicago, Illinois: to assist the Joint Committee for the Effective Administration of Justice in its program to improve administration in state courts; \$10,000; (SS)

Expenses of a conference of Latin American and United States specialists in agricultural economics; \$25,000; (AS-SS)

American Library Association, Chicago, Illinois:

Support of its International Relations Office; \$175,560 through September, 1966; (H)

To assist in the establishment of a graduate program in library science at the University of the Philippines, Quezon City; \$56,795 for a four-year period; (H)

Development of a library training program at the National Taiwan University, Taipei, National Republic of China; \$38,850; (H)

To sponsor, in conjunction with the Library of Congress, Washington, D.C., a six-week visit to United States library centers by Takao Suzuki, chief librarian, National Diet Library, Tokyo, Japan; \$5,580; (H)

Association of American Medical Colleges, Evanston, Illinois:

To establish a Division of International Medical Education; \$50,000; (MNS)

Expenses of Latin American medical educators attending the association's annual meeting, held during November, 1961, in Montreal, Canada; \$10,000; (MNS)

Committee for the Study of Mankind, Chicago, Illinois: expenses of a conference on nationalism and mankind held at the Villa Serbelloni, Bellagio, Italy, during September, 1961; \$10,000; (SS)

Indiana University, Bloomington:

To develop studies on Latin American music; \$10,000; (H)

Visits to chemistry departments and institutes in Brazil by three members of the Department of Chemistry; \$5,000; (MNS)

Michigan State University, East Lansing: completion of a study of the development of the textile industry in the Rhineland from 1750 to 1870, by Dr. Herbert Kisch, assistant professor of economics; \$6,300; (SS)



National Catholic Rural Life Conference of the U.S.A., Des Moines, Iowa: support of a seminar on land reform held in Caracas, Venezuela; \$1,200; (ss)

Ohio Agricultural Experiment Station, Wooster: laboratory equipment and supplies and research expenses; \$9,500; (AS)

Ohio State University, Columbus: research on the fungal synthesis of microbial protein, under the direction of Dr. W. D. Gray, Department of Botany and Plant Pathology, College of Agriculture and Home Economics; \$10,000; (AS)

Oklahoma State University, Stillwater:

Support of the research and teaching activities of the university's Agricultural Education Program in Ethiopia; \$10,000; (AS)

A wheat rust survey, to be conducted by Dr. Harry C. Young, Department of Plant Pathology; \$8,390 for a two-year period; (AS)

State University of Iowa, Iowa City:

Professor Paul Engle, Department of English; to study developments in contemporary Asian literature; \$10,000; (H)

Dr. Y. P. Mei, professor of Oriental studies; to meet with Chinese philosophers in the Far East, and to collect material for a study of the development of Chinese philosophy in recent years; \$3,500; (H)

University of Chicago, Illinois:

Studies of fertility and population distribution in the United States, under the direction of Professor Donald J. Bogue, Population Research and Training Center; \$165,000 through June, 1965; (ss)

Research on Menshevism and Bolshevism and the Mass Movement, 1905 to 1941, by Solomon Schwarz, and on Menshevism during the Revolution of 1917, by Boris Nicolaevsky; \$10,000 through December, 1962; (ss)

University of Illinois, Urbana: a study of government subsidies in industrial countries in Western Europe and their influence on economic growth and stability, by Professor V Lewis Bassie, director, Bureau of Economic and Business Research; \$2,850; (ss)

University of Michigan, Ann Arbor:

Research on the immunizing effect of irradiated larval parasites, particularly schistosomes, in the Phoenix Memorial Laboratory; \$10,000; (MNS)

Research on the legal institutions of Ghana, by Professor William B. Harvey, Department of Law; \$1,500; (ss)

## University of Minnesota, St. Paul:

Research on chemical mutagenesis, principally at the University of Edinburgh, Scotland, by Dr. Leon A. Snyder, associate professor of agronomy and plant genetics, Department of Agronomy, Institute of Agriculture; \$7,500 for a two-year period; (AS)

Genetic studies of Ethiopian hard wheats at the Institute of Agriculture; \$5,000; (AS)

## University of Nebraska, Lincoln:

Development of a research program in maize genetics in the Department of Agronomy, College of Agriculture; \$60,000 for a five-year period; (AS)

Research for a documentary history of twentieth-century Mexico, by Professor Stanley R. Ross; \$4,750; (H)

University of Notre Dame, Indiana: expenses of a preliminary conference on the role of mission schools in the development of education in Africa; \$6,500; (G)

## University of Wisconsin, Madison:

Research on the application of solar energy to agricultural problems, by the Solar Energy Laboratory; \$135,000 for a three-year period; (AS)

Research on the role of financial institutions in economic development, by Professor Rondo E. Cameron, director, Graduate Program in Economic History; \$40,000 for a four-year period; (SS)

Fundamental studies of normal and abnormal growth and the metabolism of plant tissue, by the Department of Plant Pathology; \$12,000; (AS)

Research on the genetics of Eskimos, under the direction of Professor William S. Laughlin, Department of Anthropology; \$8,000; (MNS)

Dr. Robert W. Hougas, associate professor of genetics, and staff member of the Agricultural Research Service, United States Department of Agriculture, Madison, Wisconsin; to visit potato improvement programs in Peru, Colombia, and Mexico; \$1,900; (AS)

Dr. Philip P. Cohen, professor of physiological chemistry, Medical School; to give a series of lectures on biochemistry in Japan and in the National Republic of China, and to visit medical institutions in India while en route from the Soviet Union to the United States; \$765; (MNS)

## Washington University, St. Louis, Missouri:

Research on political stability and democratic consensus in France, by Roy C. Macridis, professor of political science; \$10,000; (SS)

Professor Albert William Levi, Department of Philosophy; to investi-

gate current social philosophy in Czechoslovakia and Yugoslavia; \$800; (H)

Wayne State University, Detroit, Michigan:

Provision of a Visiting Professor of Economics to the University of Valle, Cali, Colombia; \$36,000 for a two-year period; (SS)

Mrs. Lorene Helen Fischer, associate professor of nursing, College of Nursing; to observe programs in psychiatric nursing at nursing schools and services in Europe; \$2,180; (MNS)

Miss Marilyn Althea Hopkins, instructor, College of Nursing; to observe nursing education programs and nursing services at schools of nursing and hospitals while in Europe; \$1,255; (MNS)

Professor David Felix, director, Center for Economic Study; to discuss the possibilities of establishing a cooperative graduate training and research program in economics with officials of the University of the Andes, Bogotá, and the University of Valle, Cali, Colombia; \$900; (SS)

WEST

California Institute of Technology, Pasadena: development of a program of research on the responses of plants to climate at the Earhart Laboratory for Plant Research; \$90,000 for a three-year period; (AS)

Colorado College, Colorado Springs: a pilot study on civic design for cities in the Great Plains and Rocky Mountain region; \$10,000; (H)

Colorado State University Research Foundation, Fort Collins: expenses of preliminary consultative meetings concerned with a study of a proposed Point Four Youth Corps; \$6,000; (G)

Douglas M. Bowden, medical student, Department of Psychiatry, School of Medicine, Stanford University, Palo Alto, California: to attend a summer course on the Russian language at Indiana University, Bloomington, and to undertake study and research in physiology in the Soviet Union as an exchange student under the auspices of the Inter-University Committee on Travel Grants; \$1,850; (MNS)

University of Alaska, College:

Studies of the grass and legume species of Alaska, by the Agricultural Experiment Station in cooperation with the University of Wisconsin Agricultural Experiment Station, Madison; \$39,000 for a three-year period; (AS)

Research on potato diseases at the Agricultural College in Vollebakk, Norway, by Dr. Charles E. Logsdon, Agricultural Experiment Station; \$10,000 for a two-year period; (AS)

## University of California:

*Berkeley:*

Research and training program, to be conducted in cooperation with the Center of Economic Research, Athens, Greece; \$200,000 for a five-year period; (ss)

Research and teaching in political science at selected universities in the developing countries of Africa, Asia, and Latin America, and continued research in political theory; \$200,000 for a five-year period; (ss)

Development of a program of studies in Hindi and related languages and literature; \$22,859; (H)

Support of the American Committee on Arthropod-borne Viruses; \$10,000; (MNS)

Dr. Henry Rapoport, professor of chemistry; to serve as a research consultant in natural products at the Institute of Agricultural Chemistry, Ministry of Agriculture, Rio de Janeiro, Brazil; \$6,106; (AS)

Dr. William C. Snyder, vice-chairman, Department of Plant Pathology, College of Agriculture; to confer with plant pathologists in Hawaii, Japan, and Australia; \$4,070; (AS)

*Davis:*

Dr. Emil M. Mrak, chancellor; to visit centers of food research and processing in Japan; \$4,600; (AS)

*Los Angeles:*

Continued support of a program for the training of English language teachers in the Philippines; \$430,500 for a four-year period; (H)

Research on the Oriental dance, by Miss Hazel Chung, graduate in dance of the Juilliard School of Music, New York; \$3,775; (H)

Professor Clifford Prator, Department of English; to attend a conference in Cambridge, England, held during June, 1961, under the auspices of the British Council, on the use of English as a second language in Africa; \$1,575; (H)

*Riverside:*

Dr. Homer D. Chapman, chairman, Department of Soils and Plant Nutrition; to visit centers of research on citrus plant nutrition in India; \$4,925; (AS)

*San Francisco:*

Dr. Helen Nahm, dean, School of Nursing; to observe nursing education and services at schools of nursing and hospitals in the Far East; \$2,500; (MNS)

Miss Mary Harms, assistant dean, School of Nursing; to observe nursing education programs and nursing services at schools of nursing while in Japan; \$355; (MNS)

University of Colorado, Boulder: study of trends toward economic unity in the Arab Middle East, by Dr. Ragaei El Mallakh, assistant professor of economics, in collaboration with Dr. Carl McGuire, professor of economics; \$2,330; (ss)

University of Denver, Colorado:

Development of a research program in international studies to serve scholars in the Great Plains and Rocky Mountain region, under the direction of Dr. Josef Korbel, Department of International Relations; \$30,000 for a three-year period; (ss)

Research on problems of coalition diplomacy in the Baghdad Pact, by Dr. E. Raymond Platig, associate professor of international relations, Social Science Foundation; \$2,500; (ss)

University of New Mexico, Albuquerque: research on the role of the military in Mexico, by Professor Edwin Lieuwen, chairman, Department of History; \$2,420; (H)

University of Southern California, Los Angeles: development of a health information center in the School of Medicine; \$9,500; (MNS)

University of Washington, Seattle:

Study of Spanish economic growth from 1800 to 1936, by Dr. Marto Ballesteros, assistant professor of economics; \$6,390; (ss)

Study of the Chinese language, by Dr. Donald W. Treadgold, professor of Russian history; \$4,064; (H)

University of Wyoming, Laramie: a survey of browse range vegetation in Mexico, by Dr. Alan A. Beetle, professor of range management; \$3,000; (AS)

Dr. C. S. Holton, pathologist, Regional Smut Research Laboratory, Division of Plant Pathology, Agricultural Experiment Station, United States Department of Agriculture, Washington State University, Pullman, and currently a visiting investigator at the Cryptogamic Laboratory, Pavia, Italy: to visit centers of research on cereal smuts in Europe; \$1,725; (AS)

## CANADA

Miss Florence Lillian Campion, director, Project for Evaluation of Nursing Service, Canadian Nurses' Association, Ottawa: to visit centers of nursing service and research in the United States and Canada; \$1,690; (MNS)

**McGill University, Montreal:**

Study of the philosophy of religion, by Professor Alastair McKinnon, Department of Philosophy; \$9,850 for an 18-month period; (H)

Study of the problems of government in new Asian and African nations, by Keith Callard, associate professor of political science; \$9,750 for a 16-month period; (ss)

Visits to the medical schools affiliated with the University of Madras, India, by three members of the McGill Faculty of Medicine to discuss plans for a formal interchange of teaching personnel and students; \$7,275. (MNS)

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**STUDIES IN INTERNATIONAL RELATIONS (SS)**

Andhra University, Waltair, India: study of Indian response to the role of international law in establishing world order, by Dr. B. S. Murty, reader, Department of Law; \$2,040;

Boston University, Massachusetts: study of the political and ideological aspects of the Soviet controversy on heredity and evolution, by Dr. Pamela N. Wrinch, assistant professor of government; \$6,000;

Columbia University, New York: study of the Palestine Arab refugee problem, by Dr. Don Peretz, School of International Affairs; \$8,500;

Connecticut College, New London: study of intergovernmental partnership for planned migration, by Dr. Louise W. Holborn, professor of government; \$9,300;

Goucher College, Baltimore, Maryland: study of the redefinitions of national purpose or rediscovery of national missions in societies faced by adverse historical changes, by Dr. William L. Neumann, professor of history; \$6,000;

Hebrew University of Jerusalem, Israel: research on modern political institutions evolving in new states and developing areas, by Dr. Samuel N. Eisenstadt, chairman, Department of Sociology; \$10,000;

Hitotsubashi University, Tokyo, Japan: study of policy formation in Japan, the United States, and the Soviet Union from 1939 to 1941, by Chihiro Hosoya, assistant professor of diplomatic history; \$8,000;

**Howard University, Washington, D.C.:**

Study of the foreign policies of Laos, Cambodia, and the two regimes of Viet Nam, by Dr. Bernard B. Fall, associate professor of international relations; \$10,000;

Completion of a study of expansion in the Pacific by Australia and New Zealand, by Dr. Merze Tate, professor of history; \$2,000;

Institute for Strategic Studies, London, England: to enable Peter Calvocoressi to undertake a major research study in the institute's series, *Studies in International Security*; \$2,000;

Johns Hopkins University, Baltimore, Maryland: study of emergent regional structures and alignments in the Maghreb and the Western Mediterranean area, by Professor George Liska, research associate, School of Advanced International Studies, Washington, D.C.; \$10,000;

Massachusetts Institute of Technology, Cambridge: study of the role of the Indian Congress Party since independence, by Professor Myron Weiner, Center for International Studies; \$8,000;

New York University, New York: lego-constitutional study of the potentialities of association among the newly independent states in British Central and East Africa, by Thomas M. Franck, associate professor of law; \$3,200;

Royal Institute of International Affairs, London, England: completion of a study of the development of international law through the political organs of the United Nations, by Miss Rosalyn Cohen; \$2,900;

Sarah Lawrence College, New York: research on the traditions of native African politics, by Mrs. Adda B. Bozeman, professor of international relations; \$2,000;

University of Buffalo, New York: completion of a study of the effect of the Great Depression upon Philippine political and economic life, with special reference to Philippine-United States relations and the establishment of Philippine independence, by Dr. Theodore W. Friend, professor of history; \$4,200;

University of California, Los Angeles: completion of a study of Chile and the South American balance of power, 1830-1914, by Dr. Robert N. Burr, associate professor of history; \$6,100;

University of Denver, Colorado: study of United States minerals policy, with special reference to United States-Latin American relations, by Dr. Joe R. Wilkinson, assistant professor of international relations; \$5,000;

University of Hull, England: study of the inter-American system, by Dr. Gordon Connell-Smith, staff tutor in international affairs; \$5,500;

University of London, London School of Economics and Political Science, England: preparation of an analytical history of the foreign policy changes

of the Chinese Communist Party from 1955 to 1961, by Roderick MacFarquhar, editor of *The China Quarterly*; \$6,450;

University of Michigan, Ann Arbor: study of the United Nations and colonialism, by Dr. Harold K. Jacobson, assistant professor of political science; \$3,130;

University of Pennsylvania, Philadelphia:

Exploration of the dynamics of value change in international policy-making, by Dr. Philip E. Jacob, professor of political science; \$8,000;

Study of Soviet behavior in the United Nations economic organizations and its relationship to Soviet foreign policy in the postwar period, by Dr. Alvin Z. Rubinstein, assistant professor of political science; \$7,500;

University of San Francisco, California: study of Vatican diplomacy during World War II, by the Reverend Robert A. Graham, S. J., associate editor of *America*; \$4,000;

University of Vermont, Burlington: research on the relationship of Communist doctrine and Soviet domestic and foreign policies, by Dr. Robert V. Daniels, professor of history; \$1,550;

Yale University, New Haven, Connecticut: study of the problems of unity and disunity in the Slavic world, by Dr. Ivo J. Lederer, assistant professor of history; \$1,500.

#### STUDIES IN LEGAL AND POLITICAL PHILOSOPHY (SS)

Barnard College, New York: research on the relationship between economic theory and public policy, by Robert Lekachman, associate professor, Department of Economics; \$6,750;

Bates College, Lewiston, Maine: research on the writings and thought of Henry St. John, Viscount Bolingbroke, eighteenth-century political theorist, by Dr. Sydney W. Jackman, Division of Social Sciences; \$7,000;

Cornell University, Ithaca, New York: research on comparative constitutional law in the thirteenth century, by Professor Brian Tierney, Department of History; \$2,500;

Dillard University, New Orleans, Louisiana: research, in Europe, on the modern idea of progress, by Dr. Georg G. Iggers, professor of history; \$5,500;

Duke University, Durham, North Carolina: completion of research on the political thought of Léon Blum, by Dr. Joel Colton, associate professor of history; \$5,200;



East Stroudsburg State College, Pennsylvania: research on the political philosophy of Woodrow Wilson, by Professor Kurt Wimer, Department of Political Science; \$8,000;

Emory University, Georgia: research on contemporary French political philosophy, by Professor Ronald F. Howell, Department of Political Science; \$3,240;

Georgetown University, Washington, D.C.: research on the legal and political thought of the Counter-Reformation from 1540 to 1650, by Professor Heinrich A. Rommen, Department of Government; \$6,000;

Geschwister Scholl Foundation, Ulm, Germany: research on the prerequisites for lasting democracy in Germany, by Gert Kalow, lecturer, Ulm School of Design; 17,800 German marks (about \$4,500);

Hunter College, New York: study of French political sociology, by Dr. Melvin Richter, assistant professor of political science; \$8,500;

Indiana University, Bloomington:

Research on basic issues in Arab politics, by Dr. P. J. Vatikiotis, associate professor of government; \$5,500;

Research on comparative law and legal theory in Western Europe, by Professor Jerome Hall, School of Law; \$3,500;

Italian Institute of Historical Studies, Naples: historical analysis of liberal and democratic ideals from Alexis de Tocqueville to the present, by Professor Vittorio de Caprariis, Faculty of Jurisprudence, University of Naples; \$4,000;

Kyoto University, Japan: research on the role of ideological and personal factors in the formation of totalitarian dictatorships, by Professor Masamichi Inoki, Faculty of Law; \$8,550;

Maryville College of the Sacred Heart, St. Louis, Missouri: study of the religious issue in the 1960 presidential election in the United States, by the Reverend Mother Patricia Barrett, R.S.C.J., professor of political science; \$430;

McGill University, Montreal, Canada: research on the history of German political thought from 1780 to 1838, by Professor Hans S. Reiss, chairman, Department of German and Russian; \$6,000;

Michigan State University, East Lansing: study of normative concepts relating to questions of agricultural policy, by Professor Glenn L. Johnson, Department of Agricultural Economics; \$2,550;

Newberry Library, Chicago, Illinois: research on the development of the

political thought of the Italian Renaissance from the fourteenth to the sixteenth century, by Dr. Hans Baron; \$7,800;

New York University, New York: research on law, theory, and administration in parole, by Dr. Paul W. Tappan, Department of Sociology; \$9,000;

University of Birmingham, England: research in legal theory, by Dr. Brian M. Barry, Department of Philosophy; \$5,000;

University of California, Berkeley:

Research on the theory of American republicanism as a significant development in modern democratic thought, by Dr. Adrienne Koch, associate professor, Department of History; \$6,000;

Research on the current status of political theory, by Dr. Sheldon S. Wolin, professor of political science; \$5,200;

University of Chicago, Illinois:

Study of government and private decisions on land use in Europe, by Professor Allison Dunham, Law School; \$5,000;

Research on Jewish and Arabic political philosophy, by Dr. Ralph M. Lerner, assistant professor of social science; \$2,500;

University of London, England: research on the philosophy, principles, and problems of the welfare state, by Professor William A. Robson, professor of public administration, London School of Economics and Political Science; \$2,000;

University of Oxford, England:

Research on the attitude of various legal and religious schools concerning the interpretation of canonical texts, by Dr. David Daube, Regius Professor of Civil Law, All Souls College; \$9,000;

Research on the concentration of political power in the Arab world, by Professor Malcolm H. Kerr, St. Antony's College, and currently assistant professor of political studies at the American University of Beirut, Lebanon; \$5,500;

University of South Carolina, Columbia: research on decision-making in the democratic framework, by Gordon Tullock, assistant professor, Department of International Studies; \$4,600.

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## VIRUS RESEARCH PROGRAM

For virus research in the United States; \$479,800.

## Study Awards, United States

BALLANTINE, DUNCAN SMITH b. 1912. Ph.D., Harvard Univ. 1947. Intercultural Understanding (F). Place of study: U.S.A., 1961-. (H)

HARRISON, LOU SILVER b. 1917. San Francisco State Coll. 1937. Music (F). Composer. Place of study: U.S.A., 1961-. (H)

HENTHORN, WILLIAM ELLSWORTH b. 1928. A.B., Univ. of California 1957. History (F). Appointed while a Rockefeller Foundation grantee at Korea Univ., Seoul. Place of study: Netherlands, 1961-. (H)

MOUNT, MARSHALL WARD b. 1927. M.A., Columbia Univ. 1952. Visual Arts (F). Appointed while on the staff of Finch Coll. Place of study: Africa, 1961-. (H)

RHODEN, JOHN WALTER b. 1918. Sculptor. Visual Arts (F). Place of study: Indonesia, 1961-. (H)

## EUROPE

The growth of economic and political power in other parts of the world tempts men to overlook the fact that many of the basic ideas and techniques upon which modern industrial society is based originated in Western Europe. This long tradition of European excellence in science and the arts is still very much alive, although the quantitative output in terms of journal articles published or megatons produced is less extensive than in the Soviet Union or in the United States.

It is true that for a number of years after World War II many Western European countries lagged somewhat in providing adequate support for science and for scholarship in general. Individual quality remained high, however, and for several years the Foundation saw many opportunities for encouraging investigations of the highest quality through modest grants toward the cost of modern equipment and other research expenses. Most recently, these highly productive European laboratories have attracted increasing support from other international sources, including United States agencies such as the Armed Services, the National Institutes of Health, and the National Science Foundation.

Although such extensive outside participation in the scientific life of a country testifies among other things to the widespread recognition of the international character of science, it also raises important policy questions for both the giving and the receiving country. Many European governments are therefore reviewing their support of science and technology, and several have made sharp increases in the amounts provided from domestic sources.

As the financing of European research becomes more soundly based, the Foundation is naturally turning its attention increasingly to other parts of the world. Gratifying though it is to know that the distinguished investigators whom the Foundation has aided in the past are now well provided for elsewhere, it is not easy to terminate close associations that have extended, in several instances, over many years. The Foundation has been proud to play a modest part in the intellectual recovery of postwar Europe, and hopes to continue its interest, though necessarily on a smaller scale and on an even more highly selective basis in the years to come.

The appropriations made in medicine and the natural sciences during 1961 reflect the changing emphasis; they are fewer in number than heretofore, and three of them represent what must very probably be the last in a series of contributions toward the general support of three very distinguished laboratories—the Carlsberg Laboratory in Copenhagen, the Institute of Genetics in Lund, and the Department of Organic Chemistry at Cambridge.

The Carlsberg Laboratory, which has received aid from the Foundation since 1935, has done outstanding work in the field of cell physiology, protein structure, and the physicochemical behavior of proteins. It has been one of the great magnet laboratories of Western Europe for many years, attracting investigators from all over the world. The Foundation's 1961 appropriation of \$22,500 will provide assistance for the research in biochemistry of Professors Heinz Holter and Martin Ottesen for another three years.

The Institute of Genetics at the University of Lund, Sweden, has produced hundreds of studies of fertile crosses between closely related species that have led to the selection and improvement of essential plant and animal crops. It has for many years provided training and research opportunities for scientists from the Americas, Africa, and the Middle and Far East. A three-year grant of \$40,000 for the

institute's research program in genetics and plant breeding brings total Foundation support since 1951 to \$175,000.

Under the direction of Professor Sir Alexander R. Todd, now Lord Todd, the organic chemistry department at the University of Cambridge has made many brilliant contributions to our knowledge of the structure and function of biologically active compounds. He and his colleagues have achieved the total synthesis of the key substance responsible for storing within the cell the energy released during the respiratory cycle. As a further contribution to Lord Todd's work on biologically important molecules, the Foundation in 1961 made an appropriation of \$15,000 to the University of Cambridge.

Among the groups to whom the Foundation has given long-standing encouragement, certainly none is more exceptional than the X-ray crystallographers who, 22 years ago, began at the University of Cambridge a series of studies on the crystal structure of hemoglobin and the closely related myoglobin. No one had attempted the X-ray crystal analysis of such large compounds before, and indeed few people are successfully working on similarly big molecules today. Thanks to the calibre of the men who have led this project we are about to know almost all the details of the structure of those two great carriers of oxygen. A five-year grant of £7,500 (about \$21,400) to the Medical Research Council, London, now sponsoring a sizable portion of the studies, will help carry forward new work on the structure of other globular proteins, such as those found in viruses, and on the structure of human oxyglobins and reduced hemoglobins.

Grants of \$21,000 to the University of Vienna and \$60,000 to the University of Turin, on the other hand, single out new projects by young investigators of outstanding promise. The Institute of Biochemistry at Vienna is the first department of its kind in the whole of Austria, and is directed by a scientist who has achieved international recognition for his protein studies while working in a country



## Photograph Excised Here

*A visiting researcher at the University of Vienna prepares to use a liquid scintillation spectrometer.*

that has still to reach the economic level enjoyed in most of Western Europe. The five-year grant to the University of Turin will aid the development of research in the newly established Institute of Medical Genetics under the direction of one of the most stimulating younger members of the brilliant Italian school of genetics.

In addition to these grants in molecular biology, there were two five-year appropriations for work on arthropod-borne viruses and bilharziasis.

The first, of \$63,000, supports studies on arthropod-borne viruses at the University of Helsinki, Finland. Within the past five years virologists at the university have isolated

and identified a number of arthropod-borne viruses, including that causing Kumlinge disease, a disease that attacks both animals and human beings, and has been observed for many years in the islands of Finland and Sweden. These studies complement the work of the Foundation's own virology laboratories, and Foundation scientists and members of the Finnish group are in close contact.



Photograph Excised Here

*University of Helsinki virologists collect sera from sheep in the Åland archipelago.*



The second grant will provide the London School of Hygiene and Tropical Medicine with £50,000 (about \$142,500) in support of an intensive investigation of what may now be the most menacing of the tropical diseases, bilharziasis. This project is to be carried on in cooperation with overseas laboratories, particularly those of Makerere University College and of the East African Medical Research Council. At least 85 per cent of all children of school age in a sub-Saharan population of 140 million suffer from this debilitating and crippling disease, which affects vast numbers of people for their entire lives. Little, unfortunately, is known about the course of the disease or about the most effective way of attacking its snail host.

The bilharziasis project represents but one effort in which Europeans or Americans are helping to lift the barriers that prevent the poorer peoples from realizing their full potentialities within the family of nations. A similar motivation underlies some studies of the economic, political, and cultural development of the emerging areas. In many cases these studies, like the bilharziasis program, involve international cooperation or training.

With the help of a \$100,000 grant from the Foundation, the Christian Michelsens Institute of Norway is undertaking a large-scale economic research project dealing with the interrelations between the economies of the developing nations and those of the Western industrialized nations. Economists are assembling and analyzing data from the United States, the European Economic Community, the European Free Trade Area, and perhaps twenty nations in Asia, Latin America, Africa, and the Middle East in an effort to answer such questions as: How much does rapid economic growth in underdeveloped countries depend on access to the markets of more industrialized countries, and do the trade policies of the richer nations need to be adjusted to take into consideration such needs? What type and scale of aid can readily be absorbed in a particular country, and, on the

other hand, what is the kind most easily mobilized by a given industrialized country?

At the Royal Institute of International Affairs, London, the major thrust of studies is toward political and cultural, as well as economic, aspects of development. In recent years, the Royal Institute has devoted attention to the Communist regimes, to revolutionary movements in underdeveloped countries, to the emergence of former dependent territories as independent states, and to the growth of a European and Atlantic "community."

Reflecting new directions in international events are studies now beginning of the newly independent states in Africa and Asia, of the growth of China as a world power—especially her bid for Asian leadership—and of the changing pattern of world power. The Foundation has long regarded the Royal Institute as a leader in the field of international relations; a three-year grant for the new studies increases by about \$51,300 support totaling over \$1 million.

An indispensable background to studies of political, economic, and social development, the Foundation believes, is a knowledge of the economic and cultural geography of underdeveloped areas. With the aid of a grant made in 1956, the University of Durham, England, has been conducting investigations of social life and economy in the Middle East. It has provided research and training over periods of several years or more to research workers from Britain and the Middle East, and senior members of the university's Middle Eastern program have undertaken projects in Libya, Jordan, and Turkey. These studies will be continued and new ones initiated in Iran and Lebanon during the next three years with a grant of £10,000 (about \$28,500).

In spite of the differences between the richer nations and those which are developing, many large cities of Africa, the Middle East, and Asia have the same problems that plague the West: inadequate provisions for housing, work, movement, and social needs. When a Western institution

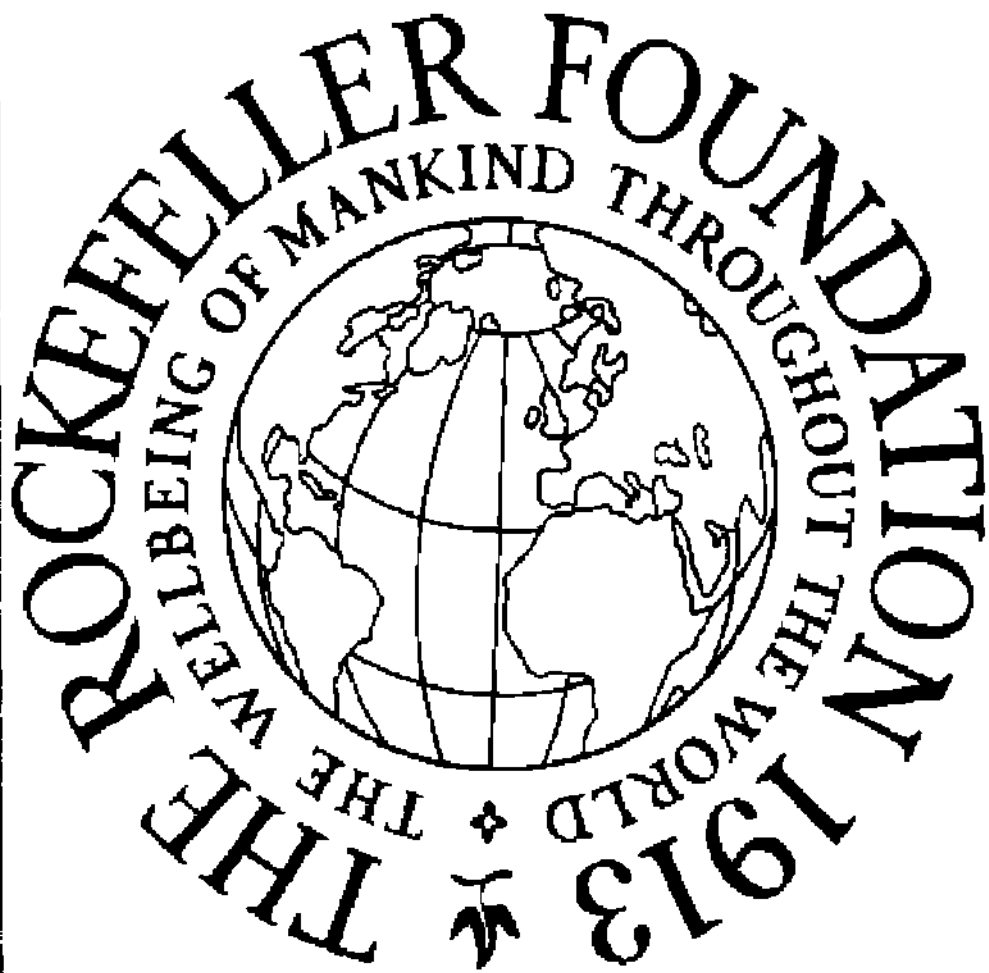
undertakes research on the problems it finds on its own doorstep and at the same time provides training in these problems for citizens of underdeveloped countries, the needs of both are served.

Such an institution is the Athens Technological Institute, initially established (1947) to train engineers and architects for Greece and the Middle East, and now providing undergraduate and graduate training for close to a thousand students, many from Asia and Africa. With a \$100,000 grant, available over two and a half years, the institute will study the composition, values, and distinctive needs of people who live in the superblock community. Construction of these large-scale housing units is the form which urban development typically takes, yet far too little is known about what makes them effective. It is hoped that the foreign graduate students who assist in the project will be able to use the knowledge they have gained in the civic design of their home cities.

Another Greek institution, the Center of Economic Research in Athens, will in turn be aided by the Department of Economics at the University of California, Berkeley. The center was established in 1959 to conduct high-level economic research on problems facing Greece, to plan for the development of the Greek economy, and to supply some of the economists the country desperately needs in teaching, banking, business, and government. Under a five-year Foundation grant of \$200,000, the Department of Economics at Berkeley will send two of its staff each year to work at the center, and the Greek and American institutions will exchange graduate students.

Finally, the Foundation continued in 1961 a European program that stands outside its usual scope of activities, but one which was initiated in response to an extraordinary world event, the Hungarian revolution of 1956.

An additional \$340,000 was appropriated this year for emergency aid to refugee Hungarians over the next three



## Photograph Excised Here

*Magalotonomou Bros., Athens*

*Professor A. G. Papandreou, Director of  
the Center of Economic Research, Athens.*

years. Most of the allocations made in 1961 from this amount went, as before, for support of refugee students and scholars at 13 institutions of higher learning in Austria. This year over 400 students were completing their education in economics, the arts, agriculture, and engineering there. The new grant brings to more than \$2,805,000 the sum appropriated since December, 1956, for various types of assistance to Hungarian refugee scholars, students, artists, and members of the professions.

## Grants Made in Europe

*MNS: Medical and Natural Sciences; AS: Agricultural Sciences; SS: Social Sciences; H: Humanities; G: General; F: Fellow; BMRC: British Medical Research Council*

### AUSTRIA

University of Vienna:

Equipment for the Institutes of Pharmacology and Biochemistry, Faculty of Medicine; \$21,000; (MNS)

Research in virology, under the direction of Dr. Hans Moritsch; \$10,000 for a two-year period; (MNS)

### DENMARK

Carlsberg Foundation, Copenhagen: research in biochemistry at the Carlsberg Laboratory; \$22,500 for a three-year period; (MNS)

University of Copenhagen:

To invite Tibetan refugees to participate in research on Tibet; 105,562 Danish crowns (about \$15,625) for a four-year period; (H)

Dr. Torkel Weis-Fogh, professor of zoophysiology; to observe current research in experimental animal physiology at laboratories in the United States; \$1,000; (MNS)

### FINLAND

University of Helsinki:

Research on arthropod-borne viruses, under the direction of Professor Nils Oker-Blom; \$63,000 through September, 1966; (MNS)

Completion of research on social change in a rapidly developing economy, under the direction of Professor Heikki Waris; \$10,000 for a three-year period; (SS)

### FRANCE

National Office of French Universities and Schools, Paris: continued research on Tibet, by Tibetan refugees, at the Institute of Advanced Chinese Studies, University of Paris, under the direction of Professor Rolf A. Stein; \$1,500 through May, 1964; (H)

Dr. Jacques Maurin, chief, Enterovirus Laboratory, Virus Research Department, Pasteur Institute, Paris: to observe current research on enteroviruses and laboratory techniques in the United States; \$3,100; (MNS)

**GERMANY**

Dr. Johann Georg Friedrich Melchers, director, Max Planck Institute of Biology, Tübingen: to observe the organization and management of research at scientific institutions in the United States; \$3,000; (MNS)

University of Bonn: books and periodicals for teaching and research in the Seminar for Political Science, directed by Professor Karl D. Bracher; \$5,200; (ss)

Professor Erich Gutenberg, Faculty of Economics, University of Cologne: to visit economic research centers in the United States; \$5,350; (ss)

University of Munich: research on animal behavior, under the direction of Professor Karl von Frisch; \$15,000 for a three-year period; (MNS)

**GREECE**

Athens Technological Institute: studies of community values in the development of metropolitan Athens; \$100,000 for a 30-month period; (H)

College of Agriculture, Athens:

Research equipment for the Department of Genetics, under the direction of Professor Costas Krimbas; \$10,000; (MNS)

Research equipment for the Department of Plant Physiology, under the direction of Professor C. A. Niavis; \$10,000 through December, 1962; (MNS)

**HUNGARY**

Dr. F. Bruno Straub, professor of biochemistry, Medical University of Budapest: to observe current research in biochemistry at medical institutions in the United States; \$1,120; (MNS)

**ITALY**

Institute and Museum of the History of Science, Florence: general maintenance of its collection of scientific instruments; \$10,000 for a three-year period; (MNS)

International Union of Biological Sciences, Rome: expenses of an international conference of representatives of interested organizations to discuss the reorganization and future development of the Naples Zoological Station; \$2,000; (MNS)

Dr. G. A. Maccacaro, microbiologist, Institute of Microbiology, University of Milan: to observe research in microbial genetics at scientific institutions while in the United States; \$400; (MNS)

University of Turin: research in human genetics in the Institute of Medical Genetics, under the direction of Professor Ruggero Ceppellini; \$60,000 for a five-year period; (MNS)

#### NETHERLANDS

Dr. C. T. de Wit, senior research officer, Institute for Biological and Chemical Research on Field Crops, Agricultural University, Wageningen: to accept a one-year appointment as consultant, Soil and Water Conservation Research Division, Agricultural Research Service, United States Department of Agriculture, Beltsville, Maryland; \$1,780; (AS)

#### NORWAY

Christian Michelsens Institute, Bergen: research, under the direction of Just Faaland, fellow of the institute, on the interrelations between the economies of the developing countries and those of the Western industrialized countries; \$100,000 for a three-year period; (SS)

Dr. Alexander Abraham Pihl, head, Biochemical Laboratory, Norsk Hydros Institute for Cancer Research, and head, Clinical Laboratory, Norwegian Radium Hospital, Oslo: to study teaching methods and research in biochemistry at medical centers in the United States; \$900; (MNS)

#### POLAND

Academy of Medicine, Gdansk: equipment for the Department of Biological Chemistry; \$5,500; (MNS)

Academy of Medicine, Poznan: research equipment for the II Clinic of Internal Medicine; \$6,500; (MNS)

Tadeusz Zeligowski, director, Central Agricultural Library, Warsaw: to confer with library officials in the United States and Europe; \$2,945; (AS)

College of Agriculture, Poznan:

Equipment for research in plant pathology; \$4,500; (AS)

Expenses of installing research equipment for the Institute of Biochemistry and the Department of Plant Physiology; \$1,500; (AS)

Dr. Andrzej Wilski, head, Helminthology Laboratory, Institute of Plant Protection, Poznan: to visit centers of research in nematology and related fields in Europe; \$2,445; (AS)

Bernard Filutowicz, director, Bureau for Agricultural Institutes, Ministry of Agriculture, Warsaw: to visit centers of agricultural research and extension in the United States, England, and Germany; \$3,240; (AS)

Mrs. Barbara Habuz, director, Nursing Lyceum, Lodz: to observe teaching methods and the organization of nursing services at schools of nursing in Europe; \$3,075; (MNS)

Institute of Plant Genetics, Polish Academy of Sciences, Poznan: chemical supplies for research, under the direction of Professor S. Barbacki; \$1,500; (AS)

Polish Academy of Sciences, Warsaw: research equipment for the Department of Biochemistry, Nencki Institute of Experimental Biology, Warsaw; \$7,500; (MNS)

Mrs. Halina Stefanska, chief, Division of Nursing Education, Polish Red Cross, Warsaw: to observe visiting nurse services and training programs for practical nurses at nursing centers in Europe; \$2,810; (MNS)

University of Warsaw: research equipment and materials for the Institute of Genetics, under the direction of Professor W. Gajewski; \$1,040; (MNS)

#### PORTUGAL

National Agricultural Experiment Station, Sacavém: publications for the library of the Coffee Rust Research Center, Oeiras; \$1,800; (AS)

#### SPAIN

School of Agriculture, Madrid: publications, primarily in the field of genetics, for the library; \$10,000; (AS)

#### SWEDEN

Swedish Seed Association, Svalöf: equipment for a plant disease research program; \$10,000; (AS)

University of Lund: research on hybrids in the Institute of Genetics; \$40,000 for a three-year period; (MNS-AS)

#### SWITZERLAND

Miss Marie Cecil Bersch, instructor in public health nursing, Le Bon Secours School of Nursing, Geneva: to study survey techniques and the preparation of nurses in public health at nursing institutions in the United States; \$3,550; (MNS)

Laboratory for Experimental Surgery, Research Institute, Davos: equipment for research in experimental surgery and medicine; \$8,500; (MNS)



## UNITED KINGDOM

British Museum (Natural History), London: preparation of a monograph on the *Anopheles* of Malaya, by Dr. John A. Reid; £1,000 (about \$2,900); (MNS)

Dr. R. S. Pitcher, nematologist, East Malling Research Station, Maidstone, Kent: to confer with nematologists in the United States; \$2,590; (AS)

Medical Research Council, London: protein research at the Unit for Research in Molecular Biology, Cambridge; £7,500 (about \$21,400) for a five-year period; (MNS)

Kenneth George Proudfoot, senior scientific officer, Ministry of Agriculture of Northern Ireland, Belfast: to study potato blight and the breeding of resistant potato varieties at The Rockefeller Foundation Mexican Agricultural Program; \$1,050; (AS)

National Institute of Economic and Social Research, London: a study of the Social Survey in the government process, by Louis Moss, Director of Research of the Social Survey, Central Office of Information, London; \$8,150; (SS)

Dr. E. B. Worthington, Deputy Director-General (Scientific), Nature Conservancy, London: to attend the Eighth National Conference of the United States National Commission for UNESCO in Boston, Massachusetts, and to confer with soil conservation specialists in the United States; \$1,425; (AS)

## Queen's University of Belfast:

Expenses of a meeting, in Yugoslavia, of the International Epidemiological Association; \$15,000; (MNS)

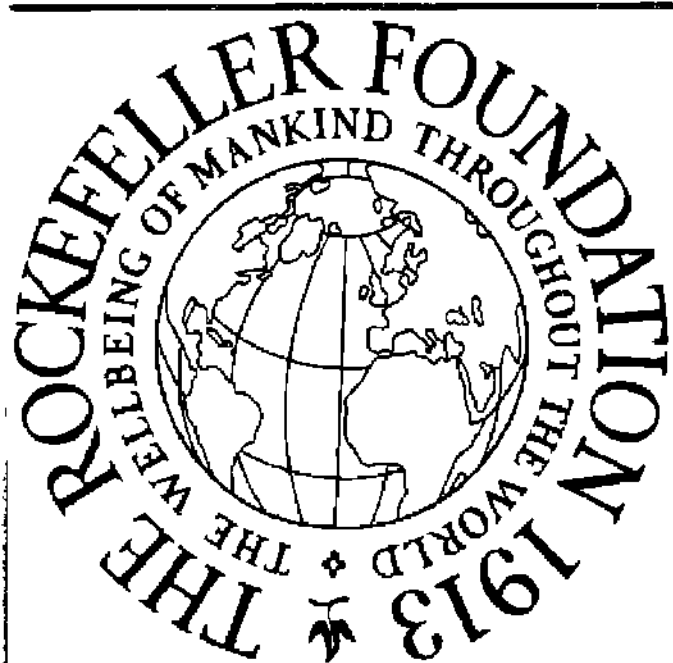
Cataloguing of Irish economic pamphlets, under the direction of Dr. R. D. Collison Black, Department of Economics; £650 (about \$1,855) through September, 1963; (SS)

Dr. Philip H. Gregory, head, Department of Plant Pathology, Rothamsted Experimental Station, Harpenden: to visit centers of plant pathology research in the United States; \$2,410; (AS)

Royal Institute of International Affairs, London: research program on economic and political development, and on contemporary international relations; £18,000 (about \$51,300) for a three-year period; (SS)

## University of Cambridge:

Research on biologically important molecules, under the direction of



## Photograph Excised Here

Thomas Photos, Oxford

*A research group in the Department of Biochemistry, University of Oxford.*

Professor Sir Alexander R. Todd, Department of Organic Chemistry; \$15,000 for a two-year period; (MNS)

A study of constitutional theory and law, in contemporary Islam, by Dr. Erwin I. J. Rosenthal, lecturer, Faculty of Oriental Studies; \$2,600; (H)

### University of Durham:

Research and training program in Middle Eastern economic and cultural geography, under the direction of Professor W. B. Fisher; £10,000 (about \$28,500) through December, 1964; (SS)

Dr. Conrad Ellenby, reader in plant nematology, King's College, Newcastle upon Tyne; to visit centers of research in nematology in the United States; \$2,615; (AS)

Dr. P. Wildy, Unit for Experimental Virus Research, Medical Research Council, and lecturer, Department of Virology, University of Glasgow; to observe recent developments in research on the ultrastructure of viruses at laboratories while in the United States and Canada; \$300; (MNS)

### University of London:

London School of Hygiene and Tropical Medicine; research on bilharziasis in East Africa; £50,000 (about \$142,500) through June, 1966; (MNS)

University College; preparation for publication of selected writings of Jeremy Bentham; \$25,000 for a five-year period; (H-SS)

London School of Economics and Political Science, Population Investigation Committee; study of changing marriage habits in Great Britain, under the direction of Professor David V. Glass; £1,500 (about \$4,275) through December, 1962; (SS)

Dr. C. E. Gordon Smith, senior lecturer, Department of Bacteriology and Immunology, London School of Hygiene and Tropical Medicine; to observe research at virus laboratories in the United States while en route from England to Hawaii; \$460; (MNS)

**University of Oxford:**

Study of the history of Italian industrialization, by Ronald M. Hartwell, reader in recent social and economic history, Nuffield College; £1,000 (about \$2,850); (SS)

Peter Hulin, lecturer in Near Eastern Archaeology; to complete an archaeological project in Turkey; \$2,600; (H)

Study of the social background of the Reformation in southern Germany and Switzerland, by Norman Birnbaum, research fellow, Nuffield College; \$2,200; (SS)

University of Sheffield: equipment for research in the Department of Microbiology; \$1,000; (MNS)

University of Southampton: completion of research on British corporate investment in the United States and Canada, under the direction of J. H. Dunning; £425 (about \$1,210); (SS)

**YUGOSLAVIA**

Professor Pavao Stern, director, Institute of Pharmacology, Medical Faculty, University of Sarajevo: expenses of attending the Fourth International Congress on Allergy in New York, and visiting certain laboratories engaged in pharmacological research while in the United States; \$390. (MNS)

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**ROCKEFELLER FOUNDATION HUNGARIAN REFUGEE AID PROGRAM**

For the support of Hungarian refugee students and scholars studying the arts and sciences at 13 Austrian institutions of higher learning; \$340,000 through June, 1964. (G)

## Study Awards, Europe

### AUSTRIA

KUNZ, CHRISTIAN b. 1927. M.D., Univ. of Vienna 1955. Virology (F). Appointed from Inst. of Hygiene, Univ. of Vienna. Place of study: U.S.A., 1961-. (MNS)

### BELGIUM

MILICAMPS, FRANCINE GHISLANE b. 1934. R.N., Edith Cavell-Marie Depage Inst., Brussels, 1957. Nursing Education (F). Appointed from Edith Cavell-Marie Depage Inst. Place of study: U.S.A., 1961-. (MNS)

### FRANCE

LEGAULT-DEMARE, JEAN b. 1927. D.Sc., Univ. of Paris 1960. Biochemistry (F). Appointed from Radium Inst., Univ. of Paris. Place of study: U.S.A., 1961-. (MNS)

### GERMANY

BOVENTER, EDWIN VON b. 1931. Ph.D., Univ. of Michigan 1956. Economics (F). Appointed from Univ. of Münster. Place of study: U.S.A., 1961-. (SS)

FISCHER, WOLFRAM b. 1928. Dr.rer.pol., Free Univ. of Berlin 1954. Economic History (F). Appointed from Univ. of Münster. Place of study: U.S.A., 1961-. (SS)

MACKENSEN, RANIER b. 1927. Dr.phil., Tübingen Univ. 1955. Sociology (F). Appointed from Univ. of Münster. Place of study: U.S.A., 1961-. (SS)

MENNIGMANN, HORST-DIETER b. 1930. Dr.rer.nat., Univ. of Göttingen 1955. Biochemistry—Microbiology (F). Appointed from Johann Wolfgang Goethe Univ., Frankfurt. Place of study: U.S.A., 1961-. (MNS)

WILLGERODT, HANS b. 1924. Ph.D., Bonn Univ. 1954. Economics (F). Appointed from Bonn Univ. Place of study: U.S.A., 1961-. (SS)

### ICELAND

HALLGRIMSSON, JONAS b. 1931. M.D., Univ. of Iceland, Reykjavik, 1958. Pathology (F). Appointed while on a rotating internship, Worcester Memorial Hospital, Massachusetts. Place of study: U.S.A., 1961-. (MNS)

## ITALY

- ARRIGONI, ORESTE b. 1928. Ph.D., Univ. of Milan 1953. Enzymology (F). Appointed from Botanical Inst., Univ. of Milan. Place of study: U.S.A., 1961-. (MNS)
- GAREGNANI, PIERANGELO b. 1930. Ph.D., Univ. of Cambridge, England, 1959. Economics (F). Appointed from Univ. of Rome. Place of study: U.S.A., 1961-. (SS)
- GOTTE, LORENZO b. 1926. M.D., Univ. of Padua 1950. Biochemistry (F). Appointed from Univ. of Padua. Place of study: England, 1961-. (MNS)

## NORWAY

- ANDERSEN, PER OSKAR b. 1930. Ph.D., Univ. of Oslo 1960. Neurophysiology (F). Appointed from Univ. of Oslo. Place of study: Australia, 1961-. (MNS)
- JOHANSEN, TORE b. 1928. Econ. Degree, Univ. of Oslo 1954. Economics (F). Appointed from Univ. of Oslo. Place of study: U.S.A., 1961-. (SS)

## POLAND

- BARBARO, AGNIESZKA b. 1922. Ph.D., Coll. of Agric., Cracow, 1960. Plant Science—Physiology (F). Appointed from Coll. of Agric. Place of study: U.S.A., 1961-. (AS)
- BRZOSKO, WITOLD JOZEF b. 1929. M.D., Med. Acad., Warsaw, 1952. Immunopathology (F). Appointed from Med. Acad. Place of study: U.S.A., 1961-. (MNS)
- CHORAZY, MIECZYSLAW RAJMUND b. 1925. M.D., Inst. of Oncology, Warsaw, 1958. Biochemistry (F). Appointed twice from Inst. of Oncology, Gliwice. Place of study: U.S.A., 1959-1960; 1961-. (MNS)
- CZARNIECKI, WINCENTY b. 1924. M.D., Med. Acad., Warsaw, 1960. Epidemiology and Preventive Medicine (F). Appointed from I Med. Clinic, Warsaw. Place of study: U.S.A., 1961-. (MNS)
- DJACZENKO, WIKTOR b. 1925. M.D., Med. Acad., Poznan, 1955. Micro-pathology (F). Appointed from Med. Acad. Place of study: U.S.A., 1961-. (MNS)
- GLUSZCZ, ANDRZEJ b. 1924. M.D., Med. Acad., Cracow, 1952. Neuro-pathology (F). Appointed from Med. Acad., Lodz. Place of study: Canada, 1961-. (MNS)

- HOROSZEWICZ, JULIUSZ STANISLAW b. 1931. M.D., Med. Acad., Lodz, 1960. Bacteriology (F). Appointed from Med. Acad. Place of study: U.S.A., 1961-. (MNS)
- JANISZEWSKI, LESZEK b. 1925. Dr.rer.nat., Nicholas Copernicus Univ. of Torun 1960. Neurophysiology (F). Appointed from Nicholas Copernicus Univ. of Torun. Place of study: U.S.A., 1961-. (MNS)
- JURA, CZESLAW JAN b. 1927. Ph.D., Univ. of Wroclaw 1956. Zoology (F). Appointed from Jagiellonian Univ., Cracow. Place of study: U.S.A., 1961-. (MNS)
- KANTOCH, MIROSLAW b. 1928. M.D., Med. Acad., Wroclaw, 1956. Virology (F). Appointed from Polish Acad. of Sciences, Wroclaw. Place of study: U.S.A., 1961-. (MNS)
- KIELCZEWSKI, MICHAL ANDRZEJ b. 1934. Ph.D., Univ. of Poznan 1961. Organic Chemistry (F). Appointed from Univ. of Poznan. Place of study: U.S.A., 1961-. (MNS)
- KORNAS, JAN KAZIMIERZ b. 1923. D.Sc., Jagiellonian Univ., Cracow, 1949. Botany (F). Appointed from Jagiellonian Univ. Place of study: U.S.A., 1961-. (MNS)
- KOWALSKA, JULIANNNA b. 1924. R.N., School of Nursing, Warsaw, 1950. Psychiatric Nursing (F). Appointed from Psychiatric Hospital, Drewnica. Place of study: U.S.A., 1961-. (MNS)
- LARSKI, ZDZISLAW b. 1919. D.V.M., Dept. of Veterinary Med., Warsaw, 1958. Animal Science (F). Appointed from Veterinary Inst., Pulawy. Place of study: U.S.A., 1961-. (AS)
- MARCINIAK, EWA b. 1926. Univ. of Wroclaw 1951. Hematology (F). Appointed from Med. Acad., Wroclaw. Place of study: U.S.A., 1961-. (MNS)
- MARCZYNSKI, TADEUSZ JAN b. 1920. M.D., Med. Acad., Cracow, 1959. Neuropharmacology (F). Appointed from Med. Acad. Place of study: U.S.A., 1961-. (MNS)
- MICHNIEWICZ, MARIAN b. 1922. Doctor of Biology, Univ. of Lublin 1956. Plant Physiology (F). Appointed from Nicholas Copernicus Univ. of Torun. Place of study: U.S.A., 1961-. (MNS)
- MYSKOW, WLADYSLAW b. 1920. D.Agr., Inst. of Soil Science and Plant Cultivation, Pulawy, 1959. Soil Science (F). Appointed from Inst. of Soil Science and Plant Cultivation. Place of study: Scotland, 1961-. (AS)

- NOWACKI, EDMUND KAZIMIERZ b. 1930. D.Agr.Sc., Coll. of Agric., Poznan, 1960. Plant Sciences—Genetics and Breeding (F). Appointed from Polish Acad. of Sciences, Warsaw. Place of study: U.S.A., 1961-. (AS)
- PANUSZ, HENRYK TADEUSZ b. 1929. Ph.D., Univ. of Lodz 1961. Biochemistry (F). Appointed from Med. Acad., Lodz. Place of study: U.S.A., 1961-. (MNS)
- PATALAS, KAZIMIERZ b. 1925. D.Agr.Sc., Coll. of Agric., Wroclaw, 1952. Special Projects—Fisheries (F). Appointed from Inst. of Inland Water Fisheries, Olsztyn-Kortowo. Place of study: Canada, 1961-. (AS)
- PIEKARSKI, LECH JERZY b. 1926. M.D., Med. Acad., Warsaw, 1956. Nucleoprotein Metabolism (F). Appointed from Med. Acad., Warsaw. Place of study: U.S.A., 1961-. (MNS)
- SICINSKI, ALFRED M. b. 1920. M.D., Univ. of Warsaw 1951. Renal Physiology (F). Appointed from I Med. Clinic, Warsaw. Place of study: U.S.A., 1961-. (MNS)
- SKOBYLKO, KAZIMIERA b. 1922. R.N., Univ. School for Nurses and Midwives, Cracow, 1949. Public Health Nursing (F). Appointed from State Nursing School, Cracow. Place of study: U.S.A., 1961-. (MNS)
- STARZYNSKI, STEFEN b. 1920. Ph.D., Univ. of Warsaw 1958. Histopathology (F). Appointed from Polish Acad. of Sciences, Warsaw. Place of study: U.S.A., 1961-. (MNS)
- STEFFEN, JAN ANDRZEJ b. 1936. M.D., Med. Acad., Poznan, 1960. Human Genetics (F). Appointed from Med. Acad. Place of study: U.S.A., 1961-. (MNS)
- SZWEYKOWSKI, JERZY b. 1925. Ph.D., Jagiellonian Univ., Cracow, 1951. Plant Taxonomy (F). Appointed from Univ. of Poznan. Places of study: U.S.A., Sweden, 1961-. (MNS)
- TRZEBSKI, ANDRZEJ b. 1928. Ph.D., Med. Acad., Warsaw, 1958. Biology - Neurophysiology (F). Appointed from Med. Acad. Place of study: U.S.A., 1961-. (MNS)
- WERMUT, WLADYSLAW b. 1924. M.D., Med. Acad., Gdansk, 1961. Internal Medicine (F). Appointed from Med. Acad. Place of study: U.S.A., 1961-. (MNS)

## PORTUGAL

- SOBRAL, MARIA ZENAIDA DE SOUSA b. 1934. R.N., Technical School of Nursing, Lisbon, 1959. Nursing Education (F). Appointed from Technical School of Nursing. Place of study: U.S.A., 1961-. (MNS)

## SWITZERLAND

- FORRER, ANJA-KRISTIN b. 1935. Dipl., Le Bon Secours School of Nursing, Geneva, 1957. Nursing Education (F). Appointed from Le Bon Secours School of Nursing. Place of study: U.S.A., 1961-. (MNS)
- SCHWYTER, ELISABETH b. 1934. Dipl., Le Bon Secours School of Nursing, Geneva, 1958. Nursing Education (F). Appointed while employed at Hospital Cantonal, Geneva. Place of study: U.S.A., 1961-. (MNS)

## UNITED KINGDOM

- BERLYNE, GEOFFREY MERTON b. 1931. M.R.C.P., Univ. of London 1956. Internal Medicine (F). Appointed while at Univ. of Manchester. Place of study: U.S.A., 1961-. (BMRC)
- BURDON, JAMES b. 1932. Ph.D., Univ. of Birmingham 1956. Biochemistry—Organic (F). Appointed from Univ. of Birmingham. Place of study: U.S.A., 1961-. (MNS)
- COWEY, ALAN b. 1935. Ph.D., Univ. of Cambridge 1961. Electrophysiology (F). Appointed while a registered research student at Univ. of Cambridge. Place of study: U.S.A., 1961-. (MNS)
- EDMONDS, CHARLES JOHN b. 1929. M.B.B.S., Univ. of London 1953. Clinical Medicine (F). Appointed while at Univ. Coll. Hospital, London. Place of study: U.S.A., 1961-. (BMRC)
- FOLDES, LUCIEN PAUL b. 1930. M.Sc., London School of Econ. and Polit. Science 1952. Economics (F). Appointed from London School of Econ. and Polit. Science. Place of study: U.S.A., 1961-. (SS)
- HARRIS, JOHN WILLIAM SIMMONS b. 1926. M.R.C.O.G., Univ. of London 1953. Embryology (F). Appointed from Univ. of London. Place of study: U.S.A., 1961-. (BMRC)
- KILPATRICK, ROBERT b. 1926. M.R.C.P., Univ. of Edinburgh 1952. Endocrinology (F). Appointed while at the Univ. of Sheffield. Place of study: U.S.A., 1961-. (BMRC)
- MAZUMDAR, DIPAK b. 1932. Ph.D., Univ. of Cambridge 1958. Economics (F). Appointed from Univ. of London. Place of study: U.S.A., 1961-. (SS)
- MURRAY, RICHARD WYCLIFFE b. 1925. D.Phil., Univ. of Oxford 1953. Electrophysiology (F). Appointed from Univ. of Birmingham. Place of study: U.S.A., 1961-. (MNS)
- SCOTT WRIGHT, MARGARET b. 1923. Ph.D., Univ. of Edinburgh 1961. Nursing Education, Research, and Administration (F). Appointed while



on a Boots Research Fellowship at Univ. of Edinburgh. Places of study: U.S.A., Canada, 1961-. (MNS)

SYMON, LINDSAY b. 1929. M.B., Ch.B., Univ. of Aberdeen 1959. Neurology (F). Appointed while at the Natl. Inst. for Med. Research, London. Place of study: U.S.A., 1961-. (BMRC)

WILKINS, MALCOLM BARRETT b. 1933. Ph.D., Univ. of London 1958. Plant Physiology (F). Appointed from Univ. of London. Place of study: U.S.A., 1961-. (MNS)

WILLIAMS, ROGER STANLEY b. 1931. M.D., Univ. of London 1960. Internal Medicine (F). Appointed while at Royal Free Hospital and School of Med., London. Place of study: U.S.A., 1961-. (BMRC)

## LATIN AMERICA

The Rockefeller Foundation has been active in Latin America from the time of World War I, when it sent teams of public health workers into the region to help plan and direct campaigns against scourges like hookworm, yellow fever, and malaria. The first three of approximately 8,800 Rockefeller Foundation fellowships for advanced training in another country were awarded to Brazilian physicians in 1917. After the war, the work was expanded to include assistance to schools of medicine for the training of future health workers. This assistance took the form of grants of money and of lending the services of experienced teachers and specialists.

In those early days also developed the Foundation's practice of sending staff members on long-term assignment to reside in foreign countries. The first one arrived in Mexico in 1922 and another reached Brazil at about the same time. In both countries Foundation representation has been continuous since that date. In 1926, to pick a typical year, 37 Foundation staff members were stationed in 14 Latin American countries. Over the years the number has fluctuated but in 1961 some 45 staff members resided in 5 Latin American countries.

Three of the laboratories associated with the Foundation's arthropod-borne virus research program are in the Latin American region. During the past year the laboratory in Trinidad moved into fine new quarters provided by the Trinidad government. The directorship of the unit passed this year to Dr. Leslie Spence, a Trinidadian physician and

scientist who has been associated with the laboratory since its beginning. Three Foundation staff members remain at the laboratory in specialized capacities.

The scientific program of the Trinidad laboratory is focused on the ecology of the principal viruses known to be active on the island. Special attention has been directed at determining the various factors which seem to make the Nariva Swamp an especially rich reservoir of virus activity.



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Photograph Excised Here

The cycles of the mosquito population have been continuously monitored, and an effort to assess the importance of the small mammal population has been rewarded by the isolation of virus from several species of wild rodents. Speculation that certain cold-blooded and aquatic species have a role in the epidemiology of arthropod-borne viruses has so far not been confirmed.

At the mouth of the Amazon is the Belém Virus Laboratory to which two Foundation staff members are assigned. The laboratory functions as part of the Evandro Chagas Institute, with the cooperation of the *Fundação Serviço Especial de Saúde Pública* (FSESP) and the Department of Microbiology of the University of Brazil. The laboratory's program has been greatly strengthened by the appointment of a Brazilian physician, Dr. Manuel Bruno-Lobo, as director of the institute. Increased support from Brazilian sources also makes it possible to look forward to two additional staff members next year when they will have finished training abroad.

This laboratory continues to be the richest source of arthropod-borne viruses of any in the world, and for a time it appeared that the restricted facilities and staff would be completely overwhelmed by the task of identifying and classifying the numerous new agents that fell into their hands. The same skill that has proved so successful in devising new methods in the use of sentinel animals for the monitoring of virus activity in the region has been applied to the development of rapid means of identification and classification, which have been put on a routine basis. More attention can now be given to mapping the cycles of viral activity in mammals, birds, and insects.

*A mosquito catcher from the Trinidad laboratory at work in Bush Bush Forest.*

*The new main building of the Trinidad Regional Virus Laboratory.*



## Photograph Excised Here

*A staff member of the Belém Virus Laboratory taking blood samples in a study of virus infections.*

Last year in the Belém area a rather dramatic outbreak of the recently discovered Oropouche virus was estimated to have involved as many as 11,000 people. No deaths occurred, but the disease caused a good deal of lost time and a large amount of acute discomfort.

The Evandro Chagas Institute is now planning more intensive work on the ECHO, entero-, and respiratory viruses. A new building makes possible the addition of another laboratory, and a highly qualified team of two Brazilian virologists has been engaged to conduct the researches, employing tissue culture methods. The virologists will also assist the medical faculty of the University of Pará in teaching microbiology.

The Rockefeller Foundation has made a grant of \$35,000 for the purchase of equipment for the new tissue culture laboratory and to provide supplies and replacements for the initial two years of operation.

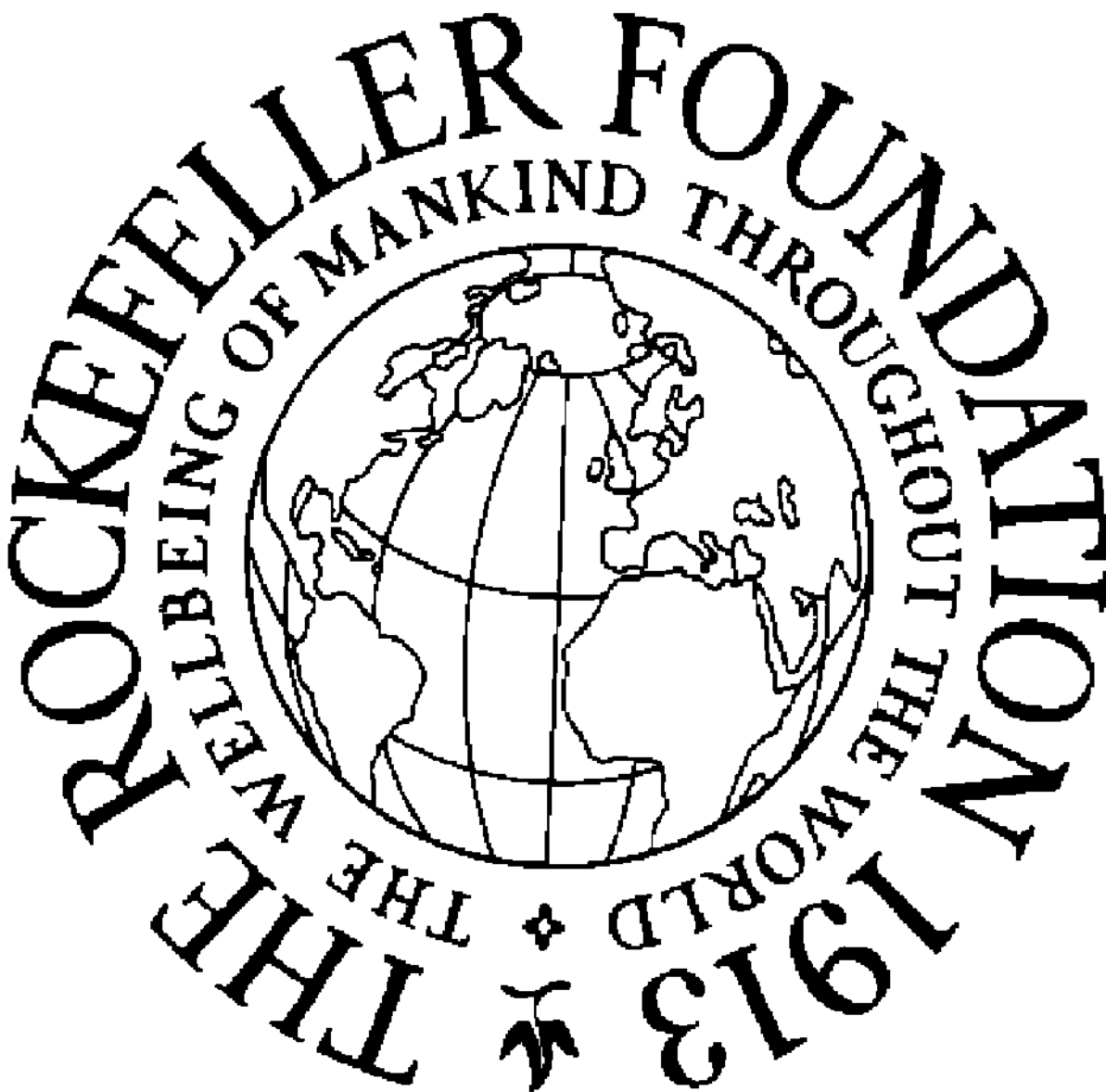
In order to gain more information about the distribu-

tion of viruses on the western side of the South American continent, the Foundation has assigned one of its staff members to work in the virus program of the Department of Preventive Medicine and Public Health at the University of Valle in Cali, Colombia. The head of this department, Professor Carlos Sanmartín, has long been interested in arthropod-borne virus diseases and has made important observations both in the intermountain region of Cali itself and in the rain forest area near the headwaters of the Amazon. The department has recently established a small field station at Buenaventura, in the lowland area of the Pacific coast, for the study of tropical disease. These facilities, operated as part of one of the most promising medical schools in Latin America, provide a rich set of opportunities which the Foundation looks forward to helping exploit in the immediate future.

Three other Foundation staff members are assigned to the Faculty of Medicine of the University of Valle. One is serving as a member of the Department of Pediatrics; the other two are helping to build up a rural health center in nearby Candelaria as a training center in community health problems and care, for medical school undergraduates and hospital house staff. The importance of training experience in rural health centers is increasingly being recognized not only by the University of Valle but also by other medical schools in emerging countries. One aim of the work at Candelaria is to develop teaching methods and standards which may also be useful elsewhere.

Progress in public health during the first half of this century, by lowering mortality rates without concomitantly reducing birth rates, contributed to population increases whose effects are especially severe in countries with primitive agricultural systems. Farmers using methods and tools scarcely changed since prehistoric times simply cannot increase harvests rapidly enough to meet the growing demands for food.

The Rockefeller Foundation, which contributed to many advances in public health that are among the causes of rapid population growth, was one of the first agencies to plan for expansion of food supplies. In 1943 the Foundation accepted an invitation from the government of Mexico to establish in that country an experiment to devise techniques by which the production of food crops could be significantly and progressively increased. The cooperatively supported experiment began with one Foundation staff member and one young Mexican assigned for training by



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the Ministry of Agriculture. As the experiment succeeded the staff was increased. In 1950 a similar cooperative unit was set up in Colombia, in 1955 another in Chile, and in 1956 a third in India. The International Rice Research Institute, built in the Philippines in 1961, is based on a different but closely related pattern of cooperation.

The work in the first four units centers consistently on two objectives: research and experimentation to adapt to local conditions the best modern methods of food plant and animal improvement, and the use of the research projects for the practical training of young agronomists in modern agricultural methods.

Experimentation in the Latin American centers is focused on the food staples—corn, wheat, beans, potatoes, and vegetables—on soil science, and on plant protection from diseases and pests. In recent years, emphasis has also been given to the food animals; exploratory work has already revealed methods by which the production of poultry, dairy and beef cattle, sheep, and swine can be increased, and the animals better protected through improved veterinary science.

By 1961 the Mexican Agricultural Program had trained enough Mexican scientists so that the former cooperative agency, the Office of Special Studies, could be absorbed into a new over-all research agency created within the Ministry of Agriculture, under Mexican leadership. Some Foundation staff continue in an advisory capacity, while others have been transferred to new programs.

The unified research agency, the National Institute of Agricultural Research (INIA), is to move to Chapingo, near Mexico City, when the necessary buildings and laboratories have been completed. At this new location the agency will have headquarters adjoining both the El Horno central experiment station, a well-equipped research center with a

*Experimental plot of beans at the Northwest  
Experiment Station, Sonora, Mexico.*



distinguished record of accomplishment going back to 1944, and the National School of Agriculture, an undergraduate college founded in the nineteenth century, whose graduates constitute the largest group of professional agronomists and irrigation engineers in Mexico.

Completing the Chapingo complex is the Graduate School of Agriculture, which is closely allied with the undergraduate school and offers courses in the fields of plant genetics, pathology, entomology, and soil science. When the Graduate School was opened by the Mexican government in the fall of 1958, there were 12 students and a staff of 6 professors. By the second year, enrollment had increased to 29 and the faculty numbered 13 full-time professors. The first graduating class received M.S. degrees in the summer of 1961.

The Foundation has aided the Graduate School in a variety of ways. Members of the Foundation staff participate in the teaching program, and four visiting professors from the United States have gone to Chapingo for varying periods under Foundation sponsorship. In addition, the Foundation has made grants totaling \$240,000 for buildings, the library, and operating expenses, of which \$90,000 was appropriated in 1961.

The Graduate School will make it possible for many more young Mexican men and women to secure advanced training than would be practical under any plan of scholarships for foreign study. Instruction is given in the national language and attention is focused on problems in the home environment. The government of Mexico has also opened the doors of the Graduate School to students from other Latin American countries. The Chapingo complex seems well on the way to international as well as national importance.

The first of the new programs which evolved from the Mexican experience began when the government of Colombia invited the Foundation to form a cooperative research and training unit in the Ministry of Agriculture. This program



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*A student at the Graduate School, Chapingo, working on the chromosome morphology of maize.*

began in 1950 with 2 staff members, and has since grown to 18 staff positions. Headquarters are in Bogotá, and the central laboratories and experimental farm are nearby in Tibaitatá. The government, besides supporting the research and training generously, has also provided 4 main experiment stations and 13 substations representative of different agricultural regions.

The work covers the food staples of Colombia—corn, wheat, beans, and potatoes—and their protection and management. More recently intensive programs on forage crops, food animals, and veterinary science have been instituted.

The Colombian government has consolidated the research agencies of the Ministry of Agriculture into a new section, the Division of Agricultural Research (DIA), under



## Photograph Excised Here

*"Taking off a hatch" of pedigreed chicks at the Tibaitatá experiment station, Colombia.*

Colombian leadership. Many of the administrators and scientists now directing the work have had practical experience with the program, and a number of them have taken advanced degrees in the United States on Foundation scholarships and fellowships.

The program in Chile, which began in 1955 with one staff member who had previously worked in both Mexico and Colombia, now has six members assigned to Santiago. It operates as a unit within the Ministry of Agriculture and maintains close relations with the four universities that have colleges of agriculture.

A new Ten Year Plan of Economic Development recently announced by the government of Chile calls for an expansion of 55 per cent in the production of food crops and of 69 per cent in livestock by 1970. To achieve these goals

the country's limited area of arable land must be used much more intensively. The new wheat varieties already developed by the cooperative program, and the studies on increasing the carrying capacity of pastures now in progress, will be important elements in the achievement of these goals.

The three programs in Latin America have from the first exchanged information and improved plant materials with scientists in other countries, and have accepted for training young nationals from outside the host country. From these informal exchanges has developed the Inter-American Food Crop Improvement Program, whose activities have already outgrown this title and spread beyond hemispheric boundaries.

The present three sections of the program are directed by former staff members of the Mexican Agricultural Program who maintain headquarters in Mexico City. The first, activated in 1959, deals with corn improvement. In the course of developing improved corn hybrids suited to Mexican conditions, thousands of samples of indigenous corn varieties from Mexico and other countries were collected and tested. This seed is being preserved in viable condition in corn germ plasm banks located in Mexico, Colombia, Brazil, and the United States. A main effort of the inter-American corn improvement project is to analyze more precisely the wealth of genetic material in the banks to determine its usefulness for corn breeders in other countries. Cooperative research on this problem is in progress at 15 centers in Latin America and the United States, and in India, Thailand, and East Africa. Grants are being made and fellowships awarded to many of the cooperating units to improve their facilities and strengthen their research potential.

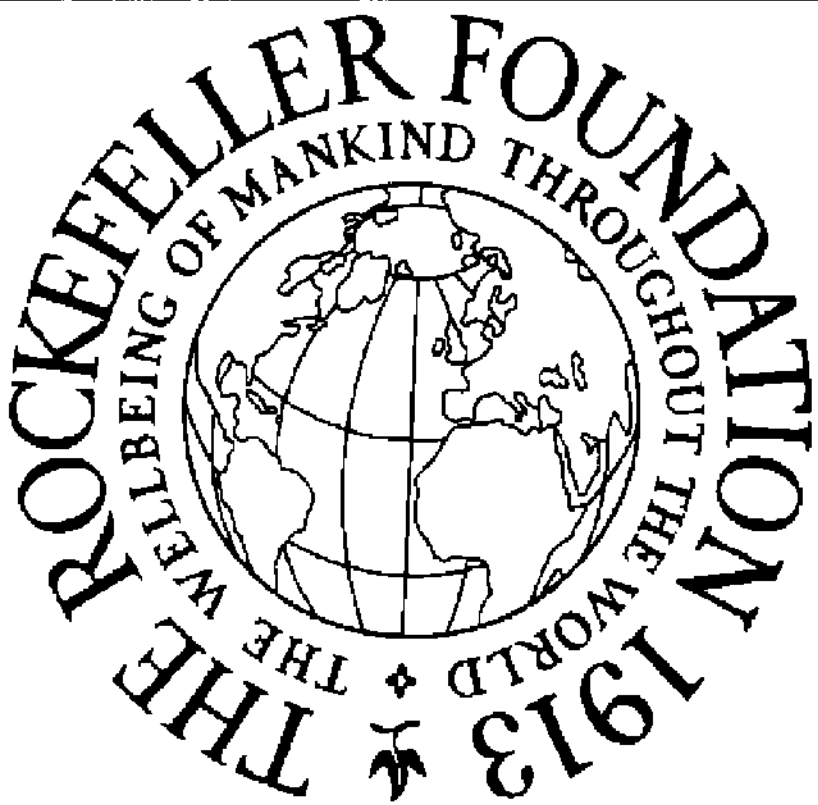
The broader type of work began with wheat in 1960 and with potatoes in 1961. In the wheat project, uniform nurseries to test yield, adaptation, and disease resistance have been prepared and grown for two years in nine countries in Latin America, and a similar nursery has been set

up for use in the countries of the Middle East. In addition, seven wheat specialists from the Middle East took a ten-month training course in Mexico on practical wheat improvement methods in 1961, and another group will arrive in 1962 for similar experience. These young men are on scholarships administered by the Food and Agriculture Organization of the United Nations with funds provided by The Rockefeller Foundation.

The potato work seeks to exploit unusual conditions in the Valley of Toluca, Mexico, where the late-blight pathogen, *Phytophthora infestans*, probably originated and where the most virulent strains ever found now flourish. Any potato variety which can resist the severity of the Toluca test should show equal or greater resistance anywhere else in the world. The Toluca testing grounds are already known internationally among potato breeders, and the development of the new program means that these can be used even more effectively for the selection and breeding of more highly resistant commercial varieties.

A major aim of the inter-American projects is to build up agricultural research facilities throughout Latin America, to provide settings in which returned trainees can work effectively. In a previous international venture, the Central American Corn Improvement Program, the Foundation helped by buying equipment for the centers in the six cooperating countries and by providing technical supervision and advice. This project, now well established and supported by the cooperating governments, is expanding to include the improvement of crops other than corn. To aid in this expansion, the Foundation in 1961 made a grant of \$40,000 to the National Agricultural Institute in Guatemala for greenhouses, for reconditioning a storehouse for the preservation of seed stocks, and for field and laboratory equipment. The funds will be available over a three-year period.

Other grants made in 1961 for strengthening agricultural education went to the University of San Marcos in Lima, Peru; to the University of San Simón, Cochabamba,



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*Zemurray Hall, Pan American Agricultural School.*

Bolivia; and to the Pan American Agricultural School, Tegucigalpa, Honduras.

The operating programs of the Foundation in Latin America in medical education, virus research, and agriculture are part of an over-all plan which includes the making of grants to strengthen local institutions, supplemented by the award of fellowships and scholarships. Technical assistance programs conducted by outsiders, no matter how successful, usually do not lead to permanent improvement if concomitantly they have not provided for the training of nationals able to continue and advance the work on their own. In recognition of this, the Foundation has consistently given attention to ways in which such training could be improved and expanded within the structure of national educational systems, particularly at the university and professional school level.

A system of fellowships by which nationals may be sent abroad for advanced study is a valuable adjunct to a development program, but alone it cannot solve the problem of supplying enough technically trained and competent personnel to meet the requirements of even a small country. Its value is for the limited number of individuals who seem to have the ability to go to the top and who can be expected to return from training to become teachers and leaders of important research projects. The massive part of the training job must be done in the country or region concerned, in local institutions, and largely with local resources.

Latin America has many institutions of higher education, some of them older than any in the United States, and a university tradition which descends in direct lineage from the first universities in Europe.

Until fairly recently, research, and training for research, especially in the natural sciences, had a limited role in the traditional curricula of Latin American universities. Up to about 25 years ago an outside organization like The Rockefeller Foundation, seeking to promote the advancement of knowledge and its effective application to human interests and needs, found its main opportunities to be helpful in schools of medicine and public health. Beginning in 1941 the Foundation broadened its efforts in Latin America beyond public health and medical education; in the natural sciences and agriculture the aim was to find the exceptional individuals and by the encouragement of timely financial help and the award of fellowships for training their students, to build up and widen their influence. This work developed slowly but has been extremely rewarding.

The Foundation in 1961 was privileged to aid a number of departments and institutes where high academic standards are maintained by able and dedicated scientists.

The Service of Obstetrical Physiology at the University of the Republic, in Montevideo, Uruguay, enjoys international eminence. It was established in 1946 by a young physiologist, Dr. Roberto Caldeyro-Barcia, and an obste-

trician, Dr. Hermógenes Alvarez. This team has designed new apparatus and devised new methods for developing a unit of measurement for uterine activity by which laboratories all over the world can study uterine physiology and compare their findings in terms of a world standard. Other observations have provided data on dose-response relationships for hormones which are used daily by obstetricians throughout the world.

The training function of the Montevideo laboratory has been almost as important as its scientific contributions. Ten visiting professors from the United States and Europe have gone to Montevideo to use the unique facilities there. Sixteen research fellows from the United States, Canada, Sweden, Poland, and 10 Latin American countries have completed training in the service, and 14 fellows are currently in residence. The methods developed at the center are now standard procedures for research in this field in 17 institutions in Europe and North and South America.

Since 1955 the Foundation has provided \$159,675 for the university, most of it for research in obstetrical physiology. In 1961 a new grant of \$45,000 was awarded, for use over a three-year period.

The Research Institute of Biological Sciences, also in Montevideo, under the administration of the Ministry of Public Instruction, has close though not official ties with the Faculty of Medicine of the University of the Republic. Each of the four full-time departmental chairmen in the Faculty of Medicine, for instance, received his early training at the institute. Professor Clemente Estable, who founded the institute, has stressed training in conjunction with research of the highest quality. In 1956 The Rockefeller Foundation assisted Professor Estable by providing funds for local fellowships; in the past four years ten young men have completed their training on these fellowships and have entered full-time posts in the institute and in the Faculty of Medicine. In 1961 the Foundation made a further grant of \$50,000 for a four-year continuation of the local fellowship plan, and



for the partial cost of a modern electron microscope for the institute's Department of Cell Ultrastructure directed by Dr. José Roberto Sotelo. Foundation support of the institute since 1943 totals \$273,225.

Another grant of \$30,000 went to the Institute of Biology of the São Paulo State Secretariat of Agriculture, Brazil; these funds, available over two years, bring Foundation aid for research here to \$84,340 since 1950.

The Institute of Biology is concerned with fundamental studies of plants and animals, applied investigations being the responsibility of another section of the department. Good facilities, adequate financial support, and a technical staff of 160 members have enabled the institute to develop one of the most highly sophisticated biological research programs in Latin America.

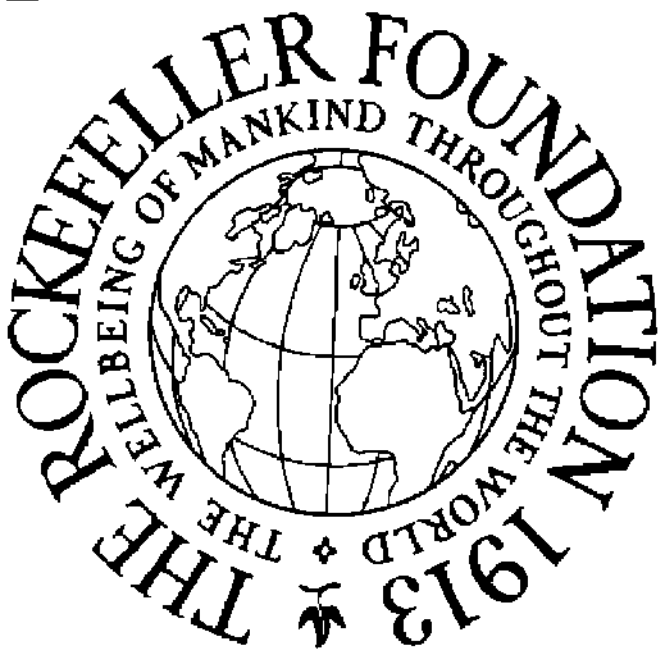
In plant biochemistry Dr. Mario Meneghini is studying the multiplication of viruses in plants and the inhibitors of viral biosynthesis, using the radioisotope N<sup>15</sup>. Dr. Anderson de Andrade, in the section of fungicides, besides determining the efficiency of different chemicals for the control of diseases of the principal horticultural and field crops, is looking into the effects of chemicals on the inhibition or stimulation of the sporulation of selected fungi. And in pharmacodynamics, under the leadership of Dr. Sylvia de Oliveira Andrade, the poisonous plants of the state are being studied with special reference to the pharmacology of their toxic materials.

Effective in January, 1962, the University of Chile, in Santiago, will open a new Graduate School of Economics and inaugurate courses leading to the doctoral degree in this discipline.

The university's progress toward this step has been based on an undergraduate teaching program which is widely respected throughout Latin America and which pioneered in the practice of a full-time faculty and full-time students. In 1955, the university expanded and reoriented the research program of the Institute of Economic Research, connected

with but not part of the Faculty of Economics, and two years later opened a Graduate School offering a special certificate to those who completed training in one of the standard economic specialties. These two units, the institute and the Graduate School, are now being merged to form the first Graduate School of Economics in Latin America.

The expanded Graduate School will contribute to the supply of economists badly needed in Latin America, trained in a center concerned with indigenous problems. Initially, the Ph.D. program will be concentrated on development economics, in both its industrial and agrarian aspects, with specific regard to the Latin American scene and with stress upon theory and its empirical application. The Foundation has appropriated a total of \$491,400 to the University of Chile for its work in economics since 1957, of which \$150,000 was allocated in 1961 for aid toward the development of its Graduate School of Economics over the next four years.



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*At the Institute of Economic Research, University of Chile, a study of the country's agricultural resources is in progress.*

The University of Nuevo León in Monterrey, Mexico, lies in the center of a booming industrial region that is experiencing rapid growth. Enrollment has grown from 3,000 to 11,000 in ten years and in another decade may reach 30,000. In two recent years the budget was increased from 7 to 15 million pesos. A new university city is being built to house this progressive institution.

The Faculty of Economics of the University of Nuevo León is composed of full-time professors, requires students to study full time, and has adopted a modern five-year curriculum. It admits students only on the basis of aptitude tests, examination of course records, and interviews. These standards and procedures are attracting much attention in other Mexican universities.

A conspicuous feature of the new curriculum is a required two-year course on contemporary civilization. It provides students in economics with a knowledge of the nature and evolution of the society in which they live and helps to develop in them a critical approach to specific questions and positions posed by their professors and by the authors they are required to read. The contemporary civilization course has stimulated other faculties in the university and is exerting influence outside Mexico. The textual material, in two

*A class in economics at the University of Nuevo León*



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volumes, when approved in final form will probably be published by a Mexican firm.

The university's Center for Economic Research is integrated with the teaching program so that advanced students have opportunities to participate in professional-level practical studies of the northeastern region in the context of the Mexican national economy.

Two years ago the Foundation made small grants to both the center and the Faculty of Economics at Nuevo León. In 1961 it renewed this support with two grants amounting to \$157,000.

Serving the same end of modernizing and professionalizing the study of the social sciences and the humanities and, like the University of Chile, preparing to offer the Ph.D. degree—in this instance in history—is the Colegio de México, in Mexico City. Founded during World War II, this graduate-level research center has compiled a distinguished record of investigations in history, linguistics, literature, and international studies. Since 1942 it has received grants from the Foundation totaling \$659,300, of which \$134,000 was awarded in 1961 to put into effect a full graduate program in history during the next six years.

The Colegio de México is headed by the outstanding historian, Daniel Cosío Villegas. The new course of studies is designed to train professors of history for regional universities, new private universities, and national universities of small countries which are inaugurating humanities faculties, introducing courses on contemporary civilization within the curriculum of professional faculties, or planning basic arts and science courses to be required of students before they begin formal professional studies. The fact that professional careers await the graduates of the new course is a hopeful omen for the raising of academic standards in Latin American universities.

Another interesting innovation is under way in Central America, where an Institute of Animal Husbandry is being



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*The new library of the Colegio de México.*

established through the collaboration of two professional faculties having a mutual concern for the development of the animal sciences. This new institute will be part of the University of San Carlos, in Guatemala City, Guatemala, one of the oldest universities in the Western Hemisphere; the collaborating entities are the Faculty of Agronomy and the Faculty of Veterinary Medicine.

The Faculty of Veterinary Medicine is the only one of its kind in Central America; it was recently designated as the regional center for professional veterinary education by the Federation of Central American Universities. The Faculty of Agronomy, founded ten years ago, is one of two schools in Central America that offer training in agriculture at the university level.

The Institute of Animal Husbandry is the first such undertaking in Latin America, and its successful establishment could well furnish a pattern which other Latin American countries could follow to bring about better working relationships between agronomists and veterinarians. In 1961 the Foundation appropriated \$300,000 for use over a four-

year period for the development of the institute and of both faculties.

The extensive restoration of the Mayan city at Tikal, Guatemala, being conducted by the University Museum of the University of Pennsylvania, has provided the Foundation with an opportunity to assist in a training program in archaeology, a field in which the Foundation makes grants only occasionally.

The University of Pennsylvania has been engaged in the excavation and repair of Tikal, perhaps the most important center of Mayan civilization, since 1956. It expects to complete the restoration of the principal building complexes by 1964, after which date the maintenance of the restored sections, together with any further excavations and research on the extensive house sites, will become the responsibility of Guatemalan authorities.

Since the professional personnel needed to take over this work are not available in Guatemala, the Faculty of Humanities of the University of San Carlos proposes to establish the study of archaeology to train scientists who can continue the Tikal project and investigate also some of the many other ruins of high civilization which cover the Guatemalan landscape. The course to be offered by the university will include intensive field experience at Tikal under the direction of a training officer competent in field and laboratory techniques. During the rainy season the training program will be continued at the university's archaeological museum and library. From three to five trainees will be selected for the initial class, preference being given to Guatemalans who have had experience on the Tikal project. The University of Pennsylvania will provide a professor to teach the basic course on anthropology; Carlos Navarrete, a Guatemalan, will give the course on archaeology. The Foundation has made a grant of \$118,000 to the University of Pennsylvania to aid the completion of its work at Tikal and the establishment of the training program during the next three years.

The faculties of medical schools are frequently the first university group to draw comparisons between their local situation and the better standards followed in other parts of the world, an observation especially true in Latin America. Medical men have traditionally sought international experience before settling down, and in recent years the opportunities and the financial aid to take advantage of them have increased enormously. Furthermore, the sciences exhibit an international homogeneity that necessitates constant interchange and invites comparison of standards to a far higher degree than is traditional in the other scholarly disciplines, which are more restricted by national or cultural boundaries.



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The growing interest of Latin American teachers of medicine, agriculture, and the allied sciences in developing their institutions to international standards has presented the Foundation with an increasing number of opportunities in the last ten years. Many of the grants made during the past year were in continuation of such developments.

In the following group of grants, the emphasis is on the strengthening of medical institutions.

The Catholic University of Chile, Santiago, received a four-year grant of \$85,000 toward the cost of developing a neurological research center, for research in marine biology, and for research and training in nuclear medicine. A two-year grant of \$300,000 to the University of Chile will help meet the cost of completing the basic science building of the Faculty of Medicine.

In Peru, the University of San Marcos, in Lima, was granted \$105,000 for the development of four preclinical departments and for the extension of resident and intern training programs during the next two years.

The principal university serving the needs of graduate education in the vast area of southeastern Brazil is the University of Rio Grande do Sul, in Pôrto Alegre. In 1961 a new grant of \$166,000 went to Rio Grande do Sul for research and teaching in the Faculty of Medicine, including also a modest amount as further aid toward the costs of an investigation of population genetics in *Drosophila*. The funds will be available for a three-year period.

A second recipient institution in Brazil is the Paulista School of Medicine, in São Paulo. Founded in 1933 as a private institution, it entered the federal system of education in 1955, and began moving toward the introduction of full-time faculty in both the preclinical and the clinical services. The Foundation has contributed \$716,655 for this purpose since 1956, and in 1961 allocated a further \$58,750.

*A Guatemalan student records data about a newly discovered Mayan sculpture.*

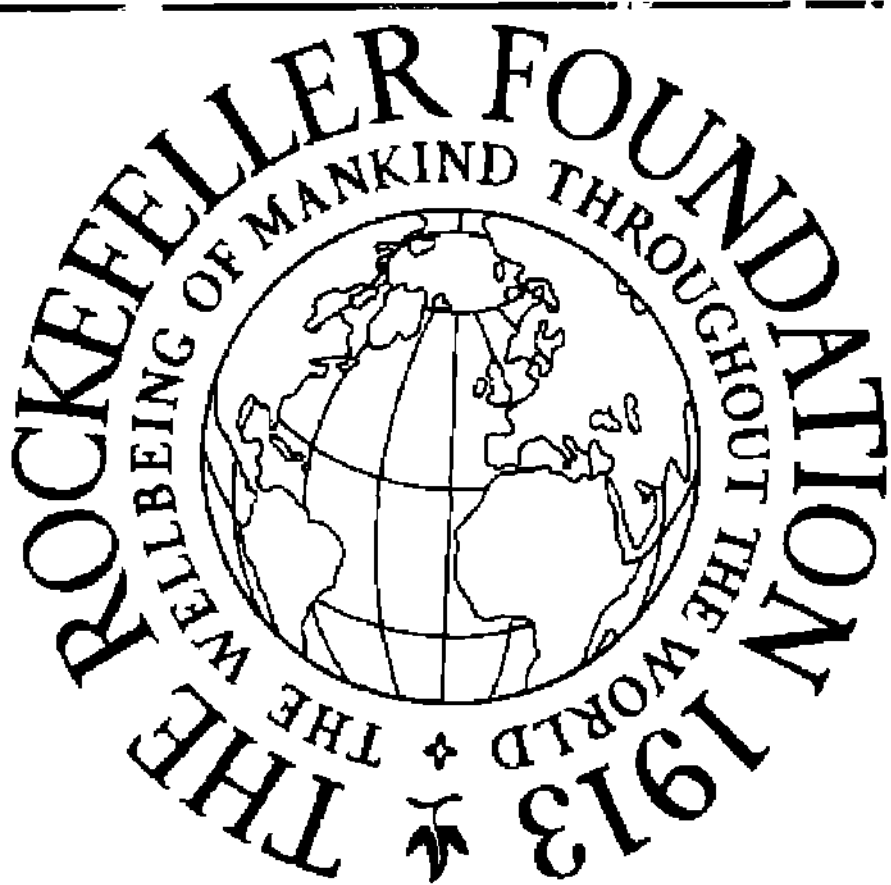


In Central America the leading school of medicine is the University of El Salvador, in San Salvador. Its reorganization along modern lines was triggered about seven years ago by the return of a few young basic scientists from training abroad. The school has instituted limited admission of students and the principle of full-time faculty, and has made steady progress, in part with aid from a number of United States private and governmental agencies. The Rockefeller Foundation renewed its support of the advance with a grant of \$57,000 in 1961.

In Mexico a school of medicine in a provincial university has inaugurated the limitation of admissions to 80 a year and has gradually been building up a cadre of completely full-time basic science professors. There are now seven full-time teachers, and four more are studying in the United States on fellowships in preparation for full-time posts. This is the School of Medicine of the University of San Luis Potosí, in the capital city and state of the same name. The Foundation has aided the school modestly since 1953, and renewed its help in 1961 with an appropriation of \$42,015, available over a five-year period.

The remarkable Children's Hospital, in Mexico City, created and directed by Dr. Federico Gómez, is leading the advancement of Mexican medicine. This 530-bed pediatric hospital started as a service institution in 1943. As early as 1945 it began to do research and presently has ten separate laboratories fully staffed by well-trained investigators. It conducts training at the postgraduate, resident and intern, and student clerkship levels, providing 300 two-month clerkships annually for medical students at the National University of Mexico. In 1961 there were 36 foreign physicians in training at the Children's Hospital, including 13 from Colombia and 9 from Venezuela. The Rockefeller Foundation sends fellowship holders there for pediatrics training.

The hospital directs and completely staffs five satellite 85-bed pediatric hospitals around the edge of the Federal District, with a constant flow of patients in both directions,



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*A staff member of a rural center in Morelos, affiliated with the Children's Hospital, visits a village family.*

the more seriously ill being sent to the Children's Hospital and the less sick or convalescent back to the peripheral units. In addition, as a result of the hospital's influence, pediatric hospitals with a total of 645 beds have been constructed in 8 provincial cities in Mexico and separate pediatric units set up in 12 general hospitals. The Children's Hospital example is also commanding widespread attention throughout Central America and northern South America.

In 1957 earthquake irreparably damaged the Children's Hospital, and the building had to be demolished. The hospital authorities are pushing the construction of a new enlarged building on the original site, with funds provided by the government, while the hospital is temporarily housed.

Though generously supported by local funds and from the income derived from private patients, the Children's Hospital has been able to expand its research and educational work more rapidly with aid given by The Rockefeller Foundation. A grant of \$150,000 made in 1954 has now been succeeded by a five-year appropriation of \$190,000.

Three universities founded since World War II are exerting a strong educational influence throughout Latin America. One of these, the privately controlled Monterrey Institute of Technology, in the Mexican city for which it is named, was opened in 1947 to train engineers and administrators for the region's industries who could meet United States standards. It soon added a school of agriculture which is now among the best in Latin America. The Foundation's aid has been contributed chiefly for the progress of the agricultural college.

The other two institutions are in Colombia; one of them, the University of the Andes, on the slopes of Monserrate in Bogotá, is the only private, nondenominational, autonomous university in the region. It was founded in 1949 by Colombian graduates of American institutions, with the avowed intention of creating an institution whose students could perform effectively in either the Colombian or the United States environment. Courses were designed and standards set which permit University of the Andes students to transfer to a number of cooperating United States institutions, if they desire, at the end of their junior year. The transfer privilege, begun in engineering, now applies to other programs as well.

The university offers degrees in engineering, architecture, economics, and liberal arts, and has extension courses for part-time students in literature, the arts, and the sciences. It opened with 78 students and now has 950, with 143 faculty members.

Five years ago the university, with the approval and cooperation of the Faculty of Medicine of the University of



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*H. Oliveros G., Bogotá*

*student in the School of Sciences, University of the Andes, taking data from a permeability apparatus.*

Valle, set up a two-year premedical course whose graduates would be accepted at Valle. The Rockefeller Foundation helped by supplying \$570,000 for expanding the department of biology and strengthening the programs in the humanities, psychology, mathematics, physics, and chemistry through recruitment of 16 additional faculty members.

Partly as a result of experience with the premedical course, the University of the Andes has now decided to begin a two-year basic college program in the arts and sciences, to be required of all students before they proceed to the spe-

cialized curricula of the professional schools. The Ford Foundation is supporting the expansion of the plant and faculty in the liberal arts required for the new course, and The Rockefeller Foundation has renewed its support of the science courses with a five-year grant of \$625,000. Another grant, of \$22,000 for use over a three-year period, will aid a research program in cell physiology being conducted by Dr. F. R. Hunter and his wife, Dr. Alice Hunter, which is also contributing to the advanced training of a number of graduate students in biology.

A short distance west of Bogotá, as an airplane flies, is the city of Cali, in the immensely fertile Cauca Valley. In and around Cali is taking place one of the fastest moving industrial developments in the Americas, with new manufacturing plants and business houses fast surrounding the old city.

This vigorous atmosphere is reflected in the dynamic growth of an entirely new institution, the University of Valle, founded in 1946. With unusual vision and forethought, the community of Cali and the citizens of the state determined to develop an institution with modern standards whose graduates would be competent to cope with the development of the Cauca Valley. The university is governed by an independent board of trustees drawn from community groups, with representatives of local and federal governments having a voice, but not a controlling one, in the determination of university affairs and policies.

A number of factors have coincided to give the medical school of the University of Valle a pre-eminent position in Latin America. Created de novo in 1950, the school is staffed with a core of highly trained and dedicated young physicians and scientists thoroughly familiar with the best standards of medicine in northern Europe and the United States. The basic science faculty has been on full time since the start, and the clinical faculty went on complete or geographical full time as soon as the teaching hospital facilities were completed.

An entirely new curriculum incorporates the best aspects of the four-year North American program adapted to Colombian needs. This is preceded by a two-year course to overcome inadequacies of arts and science training in Colombian secondary schools, and before the final degree in medicine is awarded, students must also complete a year of rotating internship and a year of residency. A four-month residency in rural medicine is available at the community health center in Candelaria, a teaching and demonstration unit under the supervision of the Faculty of Medicine. During the entire course emphasis is placed on problems of community medicine and public health.

The contribution of this medical school to the advancement of Latin American education has already been substantial. Delegations from 37 medical schools in 15 countries of Central and South America have visited the school for periods of up to 3 months, studying its administration and educational philosophy, and returning to their parent institutions to recommend reforms. In the present year 81 scientists and physicians are studying at advanced levels from 16 institutions and 5 countries in addition to Colombia.

The school has awarded degrees to 58 graduates since 1958. Six are in full-time academic posts, 10 are studying in the United States or Great Britain in preparation for full-time teaching at Cali, 29 have continued advanced training in the clinical specialties, and 13 have entered private practice.

This modern school provides an excellent base for international research and training programs. The National Institutes of Health have chosen Cali as a training center in tropical diseases for United States personnel. The School of Medicine of Tulane University is sending its students to Cali for graduate work, and members of its staff will teach and do research there on tropical problems. The Harvard School of Public Health has placed a unit for nutritional research within the Department of Nutrition. The Institute of Clinical Investigation of the University of Tennessee has

maintained a senior faculty member in the Department of Physiological Sciences for two years, and both the London School of Hygiene and Tropical Medicine and the Liverpool School of Tropical Medicine have sent members of their faculties for shorter periods. In addition, the medical school was chosen during the past year by four undergraduate medical students from Harvard, Chicago, and Tulane for study during their elective quarters.

The administration has drawn up a ten-year program to complete the development of the Faculty of Medicine as a major center for training Latin American academic personnel and to provide a base for the total development of community medical and public health services for the state of Valle. The program will provide for postgraduate training of physicians in the area, retraining of nursing personnel in medical units in the Cauca Valley, training of technical staff and paramedical personnel, and a regional health scheme for a population exceeding 3 million.

In this 10-year period the medical school will add 74 full-time positions in medicine and 7 public health nursing instructors. Twenty-three of the proposed new faculty are now taking advanced training in the United States, Great Britain, and Sweden, and another 23 are ready to go abroad. Training courses are being set up in the hospital for the technical and paramedical personnel.

The Foundation is providing \$2 million over five years toward this development plan for Cali. In addition, in 1961, it appropriated \$75,000 through the period ending June, 1965, to enable the University of Tennessee to continue the visiting professorship in physiology, and \$25,000 toward the development of a degree program in the School of Nursing. Previous appropriations to the Faculty of Medicine since 1953 total \$1,244,144, in addition to \$46,200 to the School of Nursing and \$100,000 for the completion of medical and surgical wards in the University Hospital.

The university administration, in the meantime, is vigorously pursuing plans whereby the other faculties, espe-

cially those in the undergraduate liberal arts and sciences, may keep pace with the extraordinary progress of the medical school. As a modest contribution to the achievement of this aim, the Foundation has made a grant to Wayne State University, in Detroit, to cover part of the costs of sending a visiting professor to spend two years at Cali teaching and as a consultant on the development of the Faculty of Economics. Other plans for aid in the social sciences and humanities were under discussion as 1961 ended.



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*An investigator from the University of Valle's rural center at Candelaria visits a patient at her home.*



## Grants Made in Latin America

MNS: *Medical and Natural Sciences*; AS: *Agricultural Sciences*;  
SS: *Social Sciences*; H: *Humanities*; G: *General*; F: *Fellow*; S: *Scholar*

### ARGENTINA

National Institute of Agricultural Technology, Buenos Aires: to invite Dr. F. Pimental Gomes, professor of biometry, Luiz de Queiroz College of Agriculture, University of São Paulo, Piracicaba, Brazil, to teach at the institute; \$2,000; (AS)

Ing. Ernesto Florencio Godoy, Pergamino Experiment Station: to visit experiment stations in Mexico, the United States, and Canada; \$5,025; (AS)

University of Buenos Aires:

Equipment for the Departments of Agricultural and Veterinary Microbiology, Faculty of Agronomy and Veterinary Science; \$10,000; (AS)

Dr. Alejandro Constantino Paladini, professor of biochemistry, School of Pharmacy and Biochemistry; to observe current research in biochemistry at laboratories in Europe and the United States; \$1,440; (MNS)

University of Córdoba: equipment for the Institute of Virology, Faculty of Medicine; \$10,000; (MNS)

Dr. Jose Antonio Aranguren, assistant professor of surgery, Faculty of Medical Sciences, University of Cuyo, Mendoza: to observe heart surgery, teaching methods, and organization of departments of surgery at medical centers in the United States; \$1,485; (MNS)

### BOLIVIA

University of San Simón, Cochabamba: development of agricultural education and research in the Faculty of Agronomy; \$80,000 for a three-year period; (AS)

### BRAZIL

Botanical Garden of Rio de Janeiro: equipment for the Section of General Botany; \$18,000 through June, 1962; (MNS)

Brazilian Nursing Association, Rio de Janeiro: to establish a supervisory committee to implement the recommendations of its survey of nursing resources in Brazil, and to develop its professional journal, *Revista Brasileira Enfermagem*; \$10,000; (MNS)

Editorial, publication, and distribution expenses of the report, in English, of a survey of nursing resources in Brazil; \$3,500; (MNS)

Faculty of Philosophy, Sciences and Letters of Rio Claro: studies of bee genetics, management, and behavior, by Virgilio de Portugal Araujo, Department of Agriculture and Forests, Luso, Angola; \$10,000; (AS)

Ministry of Agriculture, Rio de Janeiro: equipment and supplies for the Institute of Agricultural Chemistry; \$10,000; (AS)

Oswaldo Cruz Institute, Rio de Janeiro: equipment and supplies for a research program in hematology, under the direction of Dr. Walter Oswaldo Cruz; \$10,000; (MNS)

Paulista School of Medicine, São Paulo: development of a curriculum emphasizing laboratory experience in the basic sciences, clerkships during the clinical years, and obligatory internships; \$58,750; (MNS)

São Paulo State Secretariat of Agriculture:

Equipment for research at the Institute of Biology, São Paulo; \$30,000 for a two-year period; (AS)

Plant virus research at the Institute of Agronomy, Campinas; \$16,500 for a two-year period; (AS)

Dr. Geraldo Leme da Rocha, head, Department of Animal Production, Animal Nutrition Research Center, Nova Odessa; to visit research centers specializing in pasture and animal feeding investigation in Latin America and the United States, and to visit The Rockefeller Foundation operations in Chile, Colombia, and Mexico; \$3,120; (AS)

Dr. Agesilau Antonio Bitancourt, director, Division of Plant Biology, Institute of Biology, São Paulo; to visit the laboratories of Professor Jean Lecomte and Professor Roger Buvat at the University of Paris, France; \$1,000; (AS)

Special Public Health Service Foundation, Rio de Janeiro: development of a tissue culture laboratory at the Evandro Chagas Institute; \$35,000 for a two-year period; (MNS)

Miss Nilza Marques Mauricio Garcia, director, School of Nursing, University of Bahia, Salvador: to observe the organization and teaching of public health nursing at nursing schools and services in the United States; \$3,440; (MNS)

Dr. Clementino Fraga, Jr., professor of internal medicine, Faculty of Medicine, University of Brazil, Rio de Janeiro: to observe teaching and research in internal medicine and the organization of internship and residency programs at medical schools in the United States; \$2,450; (MNS)

Dr. Washington Luiz Tafuri, assistant professor of pathology, Faculty of Medicine, University of Minas Gerais, Belo Horizonte: to study electron microscopy under the direction of Dr. Eduardo de Robertis at the Institute of General Anatomy and Embryology, Faculty of Medical Sciences, University of Buenos Aires, Argentina; \$1,000; (MNS)

University of Paraná, Curitiba: equipment for teaching and research in the Department of Zoology, Faculty of Philosophy, under the direction of Professor J. S. Moure; \$10,000; (MNS)

University of Rio Grande do Sul, Pôrto Alegre:

Development of research and teaching in the Faculty of Medicine, and research in genetics in the Institute of Natural Sciences; \$166,000 for a three-year period; (MNS)

Dr. Jose Martins Job, professor of clinical medicine, Faculty of Medicine; to observe the organization of departments of internal medicine at medical schools in the United States; \$3,460; (MNS)

Dr. José Hilário de Oliveira e Silva, director, Institute of Surgery, Faculty of Medicine; to observe the teaching of surgery and the organization of surgical services at medical schools in Colombia and the United States; \$3,000; (MNS)

Dr. Francisco Mauro Salzano, associate professor, Institute of Natural Sciences, Faculty of Philosophy; to visit research centers of human genetics in Europe; \$2,150; (MNS)

University of São Paulo:

Luiz de Queiroz College of Agriculture, Piracicaba; equipment for use by the Institute of Genetics in a maize improvement program; \$10,000; (AS)

Dr. Luiz Carlos Uchoa Junqueira, head, Department of Histology and Embryology, Faculty of Medicine; to observe modern trends in teaching and research in the biological sciences at medical centers in the United States; \$2,750; (MNS)

Miss Glete de Alcantara, director, School of Nursing, Faculty of Medicine at Ribeirão Preto; to visit schools of nursing in the United States, and to participate in the International Council of Nurses' Twelfth Quadrennial Congress, held in Australia during April, 1961; \$2,000; (MNS)

Completion of research on Brazilian potter's clay, by Dr. Persio Souza Santos and his wife, Dr. Helena Lopes de Souza Santos, at the School of Mineral Industries, Pennsylvania State University, University Park; \$1,800; (MNS)

Dr. Berta Lange de Morretes, Faculty of Philosophy, Sciences, and Letters; to continue studies of plant anatomy at the Department of Botany, University of California, Davis; \$1,500; (MNS)

Dr. José Ferreira Fernandes, assistant professor, Department of Histology and Embryology, Faculty of Medicine; to discuss approaches to the purine and pyrimidine metabolism in *Trypanosoma cruzi* at laboratories in the United States; \$1,200; (MNS)

Professor Hugo de Almeida Leme, acting director, Luiz de Queiroz College of Agriculture, Piracicaba; to observe the organization of courses on farm machinery at universities and factories in Europe, and to attend the International Technical Congress on Agricultural Machinery in Paris, France; \$1,000; (AS)

Dr. Ivan da Mota e Albuquerque, assistant professor, Department of Histology and Embryology, Faculty of Medicine; to observe current research in pharmacology and histology at laboratories in the United States; \$960; (MNS)

## CHILE

Catholic University of Chile, Santiago: to develop graduate training centers in neurology and in nuclear medicine, and to further a research program in marine biology; \$85,000 through January, 1965; (MNS)

Sergio Gutierrez Olivos, Chilean Ambassador to Argentina: to visit centers of international studies in the United States and Mexico; \$3,210; (SS)

Ing. Carlos Muñoz Pizarro, coordinator of research in agriculture and animal husbandry, Ministry of Agriculture, Santiago; to review collections of Chilean plants in herbariums in Europe; \$5,400; (AS)

University of Chile, Santiago:

To help meet construction expenses of a new building to house basic science departments of the Faculty of Medicine; \$300,000 for a two-year period; (MNS)

Development of the Graduate School of Economics; \$150,000 for a four-year period; (SS)

Pedro Mortheiru Salgado, theatre director, Institute of Dramatic Arts; to visit centers of theatre production and teaching in Mexico and South America; \$1,000; (H)

University of Concepción: equipment for a systematic and ecological inventory of the country's plant resources, to be conducted by Professor M. Ricardi S., Biological Institute; \$3,000; (AS)



## Photograph Excised Here

*Studies of experimental evolution at the Institute of Biology, University of Chile.*

Dr. Wilfried Stubbe, director, Institute of Botany, University of the South, Valdivia: to visit laboratories and consult with scientists in the United States in connection with research on plastid inheritance in Evening Primrose; \$600; (AS)

### COLOMBIA

Dr. Duncan S. Ballantine, university administrator and former president of Reed College, Portland, Oregon, and Robert College, Istanbul, Turkey: to consult with officials of the University of Valle, Cali, on curriculum planning and university organization; \$2,750; (H)

Dr. Julia Guzmán-Naranjo, Division of Agricultural Research, Ministry of Agriculture, Bogotá: to visit centers of research on potato diseases in the United States and Mexico; \$3,200; (AS)

National University of Colombia, Bogotá:

Field equipment for the Faculty of Agronomy and the Institute of Forestry, Medellín; \$10,000; (AS)

Continued research into sociological problems encountered by a rural community in the process of economic development, under the direction of Professor Orlando Fals-Borda, Faculty of Sociology; 22,000 Colombian pesos (about \$3,100); (SS)

Books and periodicals for the library of the Faculty of Sociology; \$500; (SS)

#### University of the Andes, Bogotá:

Development of the Department of Biology and the premedical program in the School of Sciences; \$625,000 for a five-year period; (MNS)

Research in cell physiology; \$22,000 for a three-year period; (MNS)

Research on the action of carcinogenic substances on protozoa, by Dr. Roberto Galán, professor of biology; \$8,500; (MNS)

Development of the biology section of the General Library; \$6,700; (MNS)

Graduate study at the Linguistic Institute, University of Michigan, Ann Arbor, by Professor Carlos Patiño and Professor Mary H. West, and acquisition of materials for instruction in English and Spanish as second languages; \$5,800; (H)

Research on rodent behavior in the Department of Biology; \$4,000; (MNS)

English language study in the United States, by Orlando de Luque, Department of Biology; \$1,000; (MNS)

Dr. James R. Tamsitt, professor of biology; to visit natural history collections in the United States; \$950; (MNS)

#### University of Antioquia, Medellín:

Expenses of three summer seminars at the Inter-American School of Library Science on the development of library training in Latin America, under the general direction of Dr. Luis Florén; \$30,000 through June, 1964; (H)

To develop English language instruction; \$10,000; (H)

Dr. Gaston Litton, director of courses, Inter-American School of Library Science; to attend the Inter-American Archival Seminar held in Washington, D.C., during October, 1961, and to visit selected library schools while in the United States; \$2,450; (H)

University of Caldas, Manizales: research and teaching equipment for the Department of Physiological Sciences, Faculty of Medicine; \$10,000; (MNS)

## University of Valle, Cali:

Development of a graduate training program in the Faculty of Medicine; \$2,000,000 for a five-year period; (MNS)

To develop a four-year course in the School of Nursing; \$25,000 for a three-year period; (MNS)

Stipends to enable physicians from other Latin American countries to undertake postgraduate study in the Faculty of Medicine; \$19,600; (MNS)

To supplement the salaries of Faculty of Medicine staff members on full-time and geographic full-time appointments; \$10,000 through June, 1962; (MNS)

Teaching materials and professional services for a new Linguistic Center; \$5,365; (H)

Dr. Jorge Araujo Grau, professor of internal medicine, Faculty of Medicine; to observe teaching and research programs at medical schools in



Photograph Excised Here

Europe and the organization and teaching programs of departments of internal medicine at medical schools in Brazil, Chile, and Peru while en route from Brazil to Colombia; \$5,150; (MNS)

Faculty visits to the New York office of The Rockefeller Foundation and to the Washington office of the International Cooperation Administration; \$4,070; (G)

Dr. Luis Maria Borrero, head, Department of Physiological Sciences, Faculty of Medicine; to conduct physiological research at the College of Medicine, University of Tennessee, Memphis, and to observe programs in this field at other medical centers in the United States; \$2,400; (MNS)

Dr. Eduardo M. Gaitan, assistant professor of medicine, Faculty of Medicine; to observe the organization of metabolic units at schools of medicine in the United States; \$2,020; (MNS)

Dr. Carlos A. León, chairman, Department of Psychiatry, Faculty of Medicine; to observe graduate training programs and research in psychiatry at medical institutions in the United States; \$1,780; (MNS)

Dr. Roger A. J. Barth, laboratory head, Animal Colony, Faculty of Medicine; to study the organization, construction, and administration of animal colonies in the United States; \$1,645; (MNS)

Xavier University, Bogotá: equipment for the Department of Morphology, Faculty of Medicine; \$10,000; (MNS)

Provision of an automobile for scholars whose visits to Colombian institutions are financed by Rockefeller Foundation grants; \$1,150; (SS)

## COSTA RICA

Inter-American Institute of Agricultural Sciences:

### *San José:*

Expenses of the Biological Sciences Review Team and the Review Panel examining present institute activities and developing recommendations for improvements and new projects; \$10,000; (AS)

### *Turrialba:*

Participation in a teaching and research program on maize improvement at the Graduate School, National School of Agriculture, Chapingo, Mexico, by Dr. Mario Gutiérrez G., plant geneticist; \$10,000; (AS)

*Threshing an experimental plot of wheat at the central experiment station of the Foundation's cooperative agricultural program in Chile.*



Development of a course in science reference and bibliography for Latin American librarians; \$7,500; (AS)

To invite deans from colleges of agriculture in Latin America to attend the Second Conference on Agricultural Higher Education, to be held in Medellín, Colombia, during May, 1962; \$7,500; (AS)

Miss Olga Lendvayova, chief librarian; to visit agricultural libraries in the United States and Mexico, and to attend a workshop at the School of Library Service, Columbia University, New York; \$2,000; (AS)

## ECUADOR

Central University, Quito:

Ing. Guillermo Merino Dominguez, professor of agronomy, Faculty of Agricultural Engineering; to study recent research developments in corn improvement in Mexico and Guatemala; \$1,300; (AS)

Professor John W. Martin, director of a Fulbright language-teaching program in Ecuador and currently head of an English language project at the Central University; to consult with authorities in Colombia on the teaching of foreign languages; \$900; (H)

## EL SALVADOR

University of El Salvador, San Salvador:

Development of teaching and research programs in the Faculty of Medicine; \$57,000 through December, 1962; (MNS)

Visits by a university committee to observe undergraduate programs in the arts and sciences in Colombia and Costa Rica; \$3,125; (MNS)

Dr. Pedro Sánchez García, associate professor of pharmacology, Department of Physiology, Faculty of Medicine; to observe current methods of teaching and research in pharmacology at medical schools in the United States; \$2,065; (MNS)

Dr. Ramón Lucio Fernández, associate professor, Department of Preventive Medicine and Public Health, Faculty of Medicine; to observe teaching methods in preventive medicine and family medical care at medical schools in Colombia, the United States, and the United Kingdom; \$1,500; (MNS)

## GUATEMALA

National Agricultural Institute, Guatemala City: field and laboratory equipment for three regional centers engaged in research and extension programs; \$40,000 for a three-year period; (AS)

University of San Carlos, Guatemala City:

Development of the Faculties of Veterinary Medicine and Agronomy and of a new Institute of Animal Husbandry; \$300,000 for a four-year period; (AS)

Dr. Juan de Dios Moscoso Najarro, instructor of animal anatomy, Faculty of Veterinary Medicine and Zootechnics; to study recent developments in research and education in animal anatomy at departments of anatomy in the United States; \$1,500; (AS)

HONDURAS

National University of Honduras, Tegucigalpa:

Ing. Edgardo Sevilla Idiáquez, Director of General Studies; to consult with specialists in the United States, Colombia, and Mexico on teaching and curriculum planning in the humanities and science at the beginning college level; \$1,530; (H)



Photograph Excised Here

*Students at the Pan American Agricultural School transplant cuttings of laurel from a hot frame to tar-paper pots.*

Ernest J. Baca, Jr., instructor in chemistry; to consult with specialists in the United States and Mexico on teaching and curriculum planning in the humanities and science at the beginning college level; \$1,025; (H)

Office of Natural Resources, Secretariat of State, Tegucigalpa: equipment for the Cooperative Maize Improvement Project in Central America; \$2,600; (AS)

Pan American Agricultural School, Tegucigalpa: to help meet the expenses of field and laboratory equipment, a refresher training course for staff, scholarships, and library development; \$75,000 for a three-year period; (AS)

## MEXICO

Children's Hospital, Mexico City: development of medical education and research, including a laboratory for the study of arthropod-borne virus diseases; \$190,000 for a five-year period; (MNS)

Colegio de México, Mexico City:

Development of a graduate history program; \$134,000 for a six-year period; (H)

Preparation of a volume on international relations viewed from a Latin American standpoint, by Dr. Francisco Cuevas Cancino, director, Center for International Studies; \$3,000; (SS)

History Commission of the Pan American Institute of Geography and History, Mexico City: preparation of a four-volume documentary history of Mexico; \$4,480 for an 18-month period; (H)

Mexican Center of Writers, Mexico City: compilation, editing, and translation into English of an anthology of Mexican literature, under the direction of Lysander Kemp, poet and literary critic resident in Mexico; \$7,250; (H)

Professor José Luis Lorenzo, head, Department and Laboratories of Prehistory, National Institute of Anthropology and History, Mexico City: to visit conservation laboratory installations in United States museums, and to consult with art conservation authorities at the Institute of Fine Arts, New York University; \$1,125; (H)

National School of Agriculture, Chapingo:

Development of the Graduate School; \$90,000; (AS)

Ing. Diego de la Peña Garcia, lecturer, and technical advisor to the Secretary of Public Health, Government of Mexico; to visit mushroom producing and research centers in the United States; \$1,350; (AS)

Professor Efraím Hernández Xolocotzi, Graduate School; to assist in developing ecological studies of natural grasslands at the School of Agriculture and Veterinary Science, University of Rio Grande do Sul, Pôrto Alegre, Brazil; \$1,200; (AS)

National University of Mexico, Mexico City:

Development of research in the Department of Pathology, School of Medicine, under the direction of Dr. Ruy Pérez Tamayo; \$10,000; (MNS)

Dr. Manuel H. Sarvide A., head, Department of Pathological Anatomy, National School of Veterinary Medicine; to visit schools of veterinary medicine in Latin America; \$3,300; (AS)

Chemical research by Javier Padilla, Institute of Chemistry, who will work with Dr. George Büchi, professor of chemistry, Massachusetts Institute of Technology, Cambridge; \$2,500; (MNS)

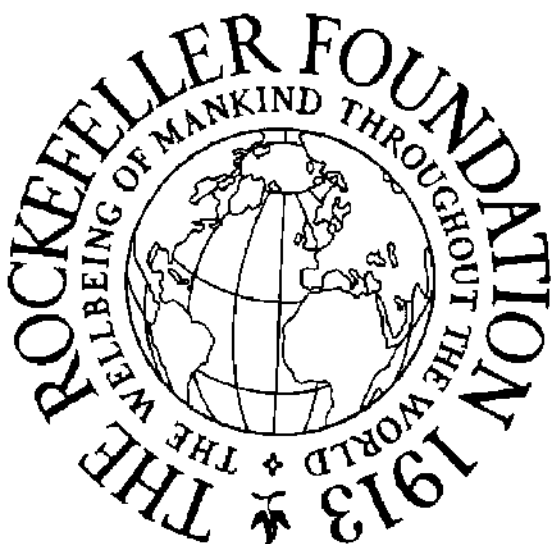
Electronic Computing Center; lectures on the use of electronic computers in operations research, given during the summer of 1961 by Dr. Herbert Scarf, associate professor of statistics, Stanford University, Palo Alto, California; \$2,250; (SS)

Ing. Leonel Robles Gutiérrez, dean, School of Agriculture and Animal Husbandry, Technological Institute and School of Advanced Studies of Monterrey; to visit Departments of Animal Husbandry at colleges and universities in the United States; \$1,260; (AS)

University of Coahuila, Antonio Narro College of Agriculture, Saltillo:

Ing. Oscar Fuentes del Valle; to attend the International Symposium on Seed Potatoes, held in Wageningen, Netherlands, during June, 1961; \$2,050; (AS)

*A seminar in the contemporary history of Mexico  
at the Colegio de México.*



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Ing. Gabriel Murillo Peralta; to attend the International Symposium on Seed Potatoes, held in Wageningen, Netherlands, during June, 1961; \$2,050; (AS)

**University of Nuevo León, Monterrey:**

Continued support of the teaching and research program of the Faculty of Economics and its Center for Economic Research; \$150,000 through December, 1964; (H-SS)

Development of a two-year course on contemporary civilization in the Faculty of Economics; \$7,000 through August, 1962; (H-SS)

Dr. Arthur F. Smith, professor of contemporary civilization and economic history; to consult with officials of the University of Valle, Cali, Colombia, on the teaching of general humanities courses; \$1,520; (H)

Visits to medical schools in Colombia, by Dr. Leonel A. Barrera and Dr. Rodrigo Barragán, coordinators in the teaching of medicine and surgery, Faculty of Medicine; \$1,200; (MNS)

**University of San Luis Potosí: development of the School of Medicine; \$42,015 for a five-year period; (MNS)**

Dr. Raul Hidalgo, School of Agriculture and Animal Husbandry, University of Sonora, Hermosillo: study of the diagnosis and control of common animal diseases of the region, under the supervision of Dr. William J. Pistor, Animal Pathology Laboratory, University of Arizona, Tucson; \$800; (AS)

**NICARAGUA**

Ministry of Agriculture and Animal Industry, Managua: equipment for use in connection with the Cooperative Maize Improvement Project in Central America; \$10,000; (AS)

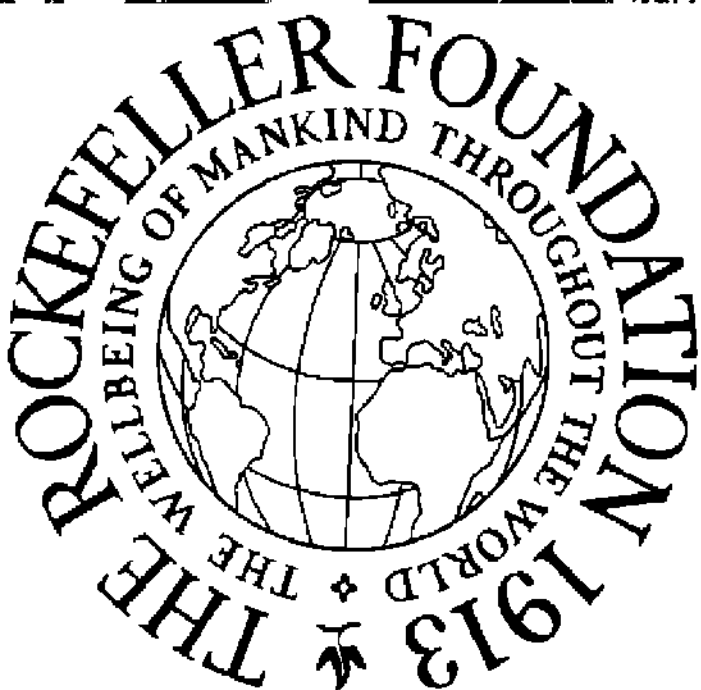
**PERU**

**Agrarian University, La Molina, Lima:**

Dr. Ferruccio Accame, dean, Faculty of Zootechnology; to visit departments of animal husbandry at colleges and research centers in the United States, Mexico, Costa Rica, Colombia, and Brazil; \$3,950; (AS)

To help meet the expenses of a national scientific symposium on animal husbandry, held in Lima under the auspices of the School of Animal Husbandry during May, 1961; \$2,900; (AS)

Ing. Antonio Bacigalupo, head, Institute of Research and Advanced Studies; to observe organizational patterns, program and curriculum



Photograph Excised Here

*The main campsite on Bush Bush Island, where two staff members of the Trinidad Regional Virus Laboratory are permanently in residence.*

planning, administrative procedures, and study progress in animal nutrition research at research and graduate training centers in Colombia, Central America, Mexico, and the United States; \$2,150; (AS)

Association of Friends of the Municipal Public Library of Callao: general support of the library's expansion program; \$15,000, of which \$9,000 is payable over a three-year period as equal funds are secured from other sources; (H)

Ministry of Agriculture, Lima:

Ing. Benjamín Quijandría, assistant director, Agricultural Research and Development Service; to study research, extension, and teaching at experiment stations and research centers in Latin America and the United States; \$4,410; (AS)

Mrs. Amalia Cavero y Cornejo, chief librarian, Agricultural Experiment Station, La Molina; to visit agricultural libraries in the United States for inservice training; \$3,250; (AS)

University of San Marcos, Lima:

Development of basic science departments and teaching programs in the Faculty of Medicine; \$105,000 through June, 1963; (MNS)

Equipment for the radiobiology laboratory and housing for foreign students and visiting professors; \$25,000 for a three-year period; (AS)

## URUGUAY

Research Institute of Biological Sciences, Ministry of Public Instruction, Montevideo; development of a fellowship program; \$50,000 for a four-year period; (MNS)

University of the Republic, Montevideo:

Research on uterine physiology, under the direction of Dr. Roberto Caldeyro-Barcia, Faculty of Medicine; \$45,000 for a three-year period; (MNS)

Dr. Edin Raul Castro, Faculty of Veterinary Science; to study specialized immunization techniques against parasitic diseases at institutions in Scotland; \$1,634; (AS)

## WEST INDIES

### JAMAICA

University College of the West Indies, Mona:

Development of a teaching and research program in Creole linguistics; \$4,940; (H)

To invite Dr. John Ellis, London Hospital, England, to visit the Faculty of Medicine; \$2,800; (MNS)

Noel Vaz, drama tutor; to become acquainted with the teaching and production of drama at universities in the United States; \$2,550; (H)

William A. Page, medical entomologist, Department of Zoology; to study research techniques at the Trinidad Regional Virus Laboratory, Port-of-Spain; \$500; (MNS)

### TRINIDAD

Colin Laird, architect for the Little Carib Theatre, Port-of-Spain: to consult with Professor George C. Izenour, theatre designer, Yale University, New Haven, Connecticut, and to observe recent theatre construction in Canada and the United States; \$1,550; (H)

Dr. Leslie Percival Spence, acting director, Trinidad Regional Virus Laboratory, Port-of-Spain: to observe recent developments in virus research at laboratories in the United States, Canada, and the United Kingdom; \$4,215; (MNS)

University College of the West Indies, St. Augustine:

To invite Dr. Dunstan Skilbeck, principal, Wye College, University of London, England, to serve as a special consultant on problems of organization and programs in the Faculty of Agriculture; \$3,000; (AS)

Dr. Peter N. Wilson, professor of agriculture; to observe recent developments in teaching methods and research in animal husbandry at agricultural education and research institutions in the United States, England, and Latin America; \$1,620; (AS)

Philip M. Sherlock, vice-principal; to visit The Rockefeller Foundation cooperative agricultural programs in Mexico and Colombia; \$1,270. (AS)

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#### AGRICULTURAL OPERATING PROGRAMS

For operating programs in Chile, Colombia, and Mexico, and the Inter-American Food Crop Improvement Program; \$762,000.

#### VIRUS RESEARCH PROGRAM

For virus research in Brazil, Colombia, and Trinidad; \$175,575.



Photograph Excised Here

*Removing mice from hood after a 24-hour exposure to biting insects in the forest near Belém, Brazil.*



## Study Awards, Latin America

### ARGENTINA

- ARIAS, HIPOLITO LEANDRO** b. 1923. Ing.Agr., La Plata Natl. Univ. 1946. Economics and Rural Life (s). Appointed from Natl. Inst. of Agric. and Livestock Technology, Buenos Aires. Place of study: U.S.A., 1961-. (AS)
- BIANCHINI, NERIS ROBERTO** b. 1935. Master's Degree, Natl. Univ. of Litoral, Santa Fé, 1958. Medical Entomology (F). Appointed from Univ. of Córdoba. Place of study: Brazil, 1961-. (MNS)
- CASTELLI, LUIS ANGEL** b. 1920. Ing.Agr., Univ. of Buenos Aires 1945. Economics and Rural Life (s). Appointed from Natl. Inst. of Agric. and Livestock Technology, Pergamino. Place of study: U.S.A., 1961-. (AS)
- CHABRILLON, ALBERTO LUIS** b. 1920. Ing.Agr., La Plata Natl. Univ. 1946. Plant Science—Genetics and Breeding (s). Appointed from Natl. Inst. of Agric. and Livestock Technology, Buenos Aires. Place of study: Mexico, 1961-. (AS)
- DAGNINO PASTORE, JOSE MARIA** b. 1933. M.A., Univ. of California 1961. Economics (s). Appointed while at Harvard Univ. under OAS sponsorship. Place of study: U.S.A., 1961-. (SS)
- ERNIE, ENRIQUE RENE** b. 1926. Ing.Agr., Univ. of Buenos Aires 1953. Soil Science (s). Appointed from Natl. Inst. of Agric. and Livestock Technology, Buenos Aires. Place of study: Mexico, 1961-. (AS)
- GEOGHEGAN, ABEL RODOLF** b. 1930. Librarian, Natl. School of Librarianship, Buenos Aires, 1960. Library Science (s). Appointed from Univ. of Salvador, Buenos Aires. Place of study: U.S.A., 1961-. (H)
- GIMENEZ, DOMINGO FELIX** b. 1924. V.M.D., La Plata Natl. Univ. 1946. Microbiology (F). Appointed from Univ. of Cuyo, Mendoza. Place of study: U.S.A., 1961-. (MNS)
- GOLDENBERG, JOSE BERNARDO** b. 1929. Ing.Agr., Univ. of Buenos Aires 1953. Plant Science—Genetics and Breeding (s). Appointed from Natl. Inst. of Agric. and Livestock Technology, Castelar. Place of study: U.S.A., 1961-. (AS)
- GONZALEZ PADILLA, ALEJANDRO GERARDO** b. 1918. Ing.Agr., La Plata Natl. Univ. 1942. Economics and Rural Life (s). Appointed from Natl. Inst. of Agric. and Livestock Technology, San Miguel de Tucuman. Place of study: U.S.A., 1961-. (AS)

- MORO, MARTA SUSANA b. 1932. Ing.Agr., La Plata Natl. Univ. 1957. Chemistry (s). Appointed from Natl. Inst. of Agric. and Livestock Technology, Marcos Juarez. Place of study: U.S.A., 1961-. (AS)
- SABATINI, DAVID DOMINGO b. 1931. M.D., Natl. Univ. of Litoral, Rosario, 1954. Biochemical Cytology (F). Appointed from Univ. of Buenos Aires. Place of study: U.S.A., 1961-. (MNS)
- TIRANTI, IVAN NICOLAS b. 1927. Ing.Agr., La Plata Natl. Univ. 1952. Plant Science—Genetics and Breeding (s). Appointed from Natl. Inst. of Agric. and Livestock Technology, Buenos Aires. Place of study: U.S.A., 1961-. (AS)
- VERGANI, ALDO RAUL b. 1911. Ing.Agr., Univ. of Buenos Aires 1935. Entomology (s). Appointed from Natl. Inst. of Agric. and Livestock Technology, Concordia. Place of study: U.S.A., 1961-. (AS)
- ZANGHERI, EGUALDO OSCAR b. 1931. M.D., Univ. of Cuyo, Mendoza, 1959. Basic Medical Sciences (F). Appointed from Univ. of Cuyo. Place of study: U.S.A., 1961-. (MNS)

## BOLIVIA

- AYALA ZAMBRANA, JORGE b. 1926. Ing. Agr., Univ. of San Simón, Cochabamba, 1960. Animal Science—Poultry Husbandry (s). Appointed from Univ. of San Simón. Place of study: Mexico, 1961-. (AS)
- CANDIA ZEBALLOS, JOSE DANIEL b. 1930. Ing.Agr., Univ. of San Simón, Cochabamba, 1956. Plant Science—Economic Entomology (s); Entomology (s). Appointed twice from Univ. of San Simón. Places of study: Mexico, 1957-1958; U.S.A., 1961-. (AS)
- COSIO MONTANO, CARLOS b. 1924. Ing.Agr., Univ. of San Simón, Cochabamba, 1951. Plant Science—Genetics and Breeding (s). Appointed from Univ. of San Simón. Place of study: U.S.A., 1961-. (AS)
- HERVAS ARCE, REMBERTO b. 1923. Ing.Agr., Univ. of San Simón, Cochabamba, 1946. Plant Science—Pathology (s). Appointed from Univ. of San Simón. Place of study: U.S.A., 1961-. (AS)

## BRAZIL

- ANDRADE, JOAQUIM PEDRO DE b. 1932. B.S., Univ. of Brazil, Rio de Janeiro, 1955. Drama (F). Appointed from Film Production Center, Min. of Foreign Relations, Rio de Janeiro. Place of study: England, 1961-. (H)
- BAPTISTA, WANDA ALVES b. 1920. R.N., Univ. of São Paulo, Ribeirão

- Preto, 1949. Nursing Education (F). Appointed from Univ. of São Paulo. Place of study: U.S.A., 1961-. (MNS)
- BOZON, FRANCISCO DAS CHAGAS BRITO b. 1930. M.D., Univ. of Minas Gerais, Belo Horizonte, 1956. Pharmacology (F). Appointed from Univ. of Minas Gerais. Place of study: U.S.A., 1961-. (MNS)
- CINTRA, BENJAMIN b. 1926. Ing.Agr., Univ. of São Paulo, Piracicaba, 1957. Economics and Rural Life (S). Appointed from State Secretariat of Agric., São Paulo. Place of study: U.S.A., 1961-. (AS)
- COUTINHO, LEOPOLDO MAGNO b. 1934. Ph.D., Univ. of São Paulo 1960. Plant Ecology (F). Appointed from Univ. of São Paulo. Place of study: Germany, 1961-. (MNS)
- DOBEREINER, JURGEN b. 1923. D.V.M., Agric. Univ., Rio de Janeiro, 1954. Animal Science—Veterinary Science (S). Appointed from Min. of Agric., Rio de Janeiro. Place of study: U.S.A., 1961-. (AS)
- FURTADO, MOZART REGIS FORTES b. 1933. M.D., Univ. of São Paulo 1958. Internal Medicine (F). Appointed from Faculty of Med. of the Triângulo Mineiro, Uberaba, Minas Gerais. Place of study: U.S.A., 1961-. (MNS)
- GARCIA, ELOY JULIUS b. 1931. Pharmacist, Univ. of Rio Grande do Sul, Pôrto Alegre, 1952. Biophysics (F). Appointed from Univ. of Rio Grande do Sul. Place of study: U.S.A., 1961-. (MNS)
- HAAG, HENRIQUE PAULO b. 1928. Dr.Agr., Univ. of São Paulo 1958. Plant Science—Physiology (S). Appointed from Univ. of São Paulo. Place of study: U.S.A., 1961-. (AS)
- INACIO, JAIR AFONSO b. 1932. Univ. of Brazil, Rio de Janeiro. Visual Arts (S). Appointed from Board of Directors of Natl. Artistic and Historic Patrimony, Ouro Preto. Place of study: Belgium, 1961-. (H)
- LIBERAL, MOZART TEIXEIRA b. 1925. Dipl., Eliseu Maciel School of Agric., Pelotas, 1950. Plant Science—Genetics and Breeding (S). Appointed from Min. of Agric., Pelotas. Place of study: U.S.A., 1961-. (AS)
- LINHARES, BRUNO MATTOS b. 1934. First Degree in Econ., Univ. of Brazil, Rio de Janeiro, 1958. Economics (S). Appointed while at Kiel Univ. on a scholarship from the Getulio Vargas Foundation. Place of study: Germany, 1961-. (SS)
- MALNIC, GERHARD b. 1933. M.D., Univ. of São Paulo 1960. Renal Physiology (F). Appointed from Univ. of São Paulo. Place of study: U.S.A. 1961-. (MNS)
- MARQUES PEREIRA, JOAO PEDRO ESCOBAR b. 1933. M.D., Univ. of Rio Grande do Sul, Pôrto Alegre, 1956. Histology and Embryology (F).

- Appointed from Univ. of Rio Grande do Sul. Place of study: U.S.A., 1961-. (MNS)
- NERY, MARIA ELENA DA SILVA** b. 1926. R.N., Univ. of Rio Grande do Sul, Pôrto Alegre, 1954. Nursing Education (F). Appointed from Univ. of Rio Grande do Sul. Place of study: U.S.A., 1961-. (MNS)
- OLIVEIRA, MARIA IVETE RIBEIRO DE** b. 1928. R.N., Univ. of Bahia, Salvador, 1950. Nursing (F); Nursing Education (F). Appointed twice from Univ. of Bahia. Place of study: U.S.A., 1952-1953; 1961-. (MNS) .
- PETRAGNANI, NICOLA** b. 1929. D.Sc., Univ. of São Paulo 1957. Organic Chemistry (F). Appointed from Univ. of São Paulo. Place of study: Germany, 1961-. (MNS)
- PINHEIRO, FRANCISCO DE PAULA** b. 1934. M.D., Univ. of Pará, Belém, 1958. Tissue Culture in Virology (F). Appointed from Special Public Health Service Foundation, Belém. Place of study: U.S.A., 1961-. (MNS)
- SOUZA, ALBERTO DE MELLO E** b. 1936. Bachelor's Degree, Univ. of Brazil, Rio de Janeiro, 1958. Economics (S). Appointed while at Harvard Univ. on a Getulio Vargas Foundation scholarship. Place of study: U.S.A., 1961-. (SS)
- TITO DE MORAIS, AUGUSTO** b. 1921. M.D., Univ. of Lisbon, Portugal, 1948. Preventive Medicine (F). Appointed from Natl. Acad. of Sciences—Natl. Research Council, Washington, D.C. Place of study: U.S.A., 1961-. (MNS)
- VEIGA, LUIZ ALBERTO SILVA** b. 1927. Ph.D., Univ. of Paraná, Curitiba, 1960. Chemistry (S). Appointed from Univ. of Paraná. Place of study: U.S.A., 1961-. (AS)
- VEIGA, MANUEL VICENTE RIBEIRO JR.** b. 1931. M.S., Juilliard School of Music, New York, 1961. Music (F). Appointed from Univ. of Bahia, Salvador, while on an OAS fellowship at Juilliard. Place of study: U.S.A., 1961-. (H)
- VERNETTI, FRANCISCO DE JESUS** b. 1925. Eng. Agr., Eliseu Maciel School of Agric., Pelotas, 1950. Plant Science—Genetics and Breeding (S). Appointed from Min. of Agric., Pelotas. Place of study: U.S.A. 1961-. (AS)
- VILLACA, MARIA JOSE** b. 1926. Lic., Univ. of São Paulo 1946. Economics (F). Appointed from Univ. of São Paulo. Place of study: U.S.A., 1961-. (SS)
- ZAPPALA, ANTONIO** b. 1931. M.D., Univ. of Minas Gerais, Belo Horizonte, 1955. Anatomy (F). Appointed from Univ. of Recife. Place of study: U.S.A., 1961-. (MNS)

## CHILE

- BONILLA ESPINDOLA, SERGIO b. 1931. Agron., Univ. of Chile, Santiago, 1957. Animal Science—Nutrition (s). Appointed from Min. of Agric., Chillán. Place of study: U.S.A., 1961-. (AS)
- CASANEGRA PRNJAT, PABLO b. 1934. M.D., Catholic Univ. of Chile, Santiago, 1958. Hemodynamics (F). Appointed from Catholic Univ. of Chile. Place of study: U.S.A., 1961-. (MNS)
- DE LUIGI LEMUS, JUAN MARIO b. 1928. Maestria, Univ. of Chile, Santiago, 1954. Library Science (F). Appointed from Univ. of Chile. Place of study: Colombia, 1961-. (H)
- DELGADO CASTILLO, ENRIQUE b. 1924. Ing.Agr., Univ. of Chile, Santiago, 1947. Agricultural Economics (s). Appointed while studying under FAO award at Michigan State Univ. Place of study: U.S.A., 1961-. (SS)
- ESCOBAR CERDA, ALEJANDRO b. 1938. Lic.Econ., Univ. of Chile, Santiago, 1961. Economics (s). Appointed from Univ. of Chile. Place of study: U.S.A., 1961-. (SS)
- FONTAINE, ERNESTO RICARDO b. 1934. M.A., Univ. of Chicago 1958. Economics (s). Appointed from Catholic Univ. of Chile, Santiago. Place of study: U.S.A., 1961-. (SS)
- GASTO CODERCH, JUAN b. 1935. Agron., Univ. of Chile, Santiago, 1960. Plant Science—Agronomy (s). Appointed from Univ. of Chile. Place of study: U.S.A., 1961-. (AS)
- GONZALEZ RODRIGUEZ, ROBERTO HERNAN b. 1933. Agron., Univ. of Chile, Santiago, 1956. Entomology (s). Appointed from Univ. of Chile. Place of study: U.S.A., 1961-. (AS)
- ILLANES MORA, ALEJANDRO b. 1928. M.D., Univ. of Chile, Santiago, 1956. Pharmacology (F). Appointed from Univ. of Chile. Place of study: U.S.A., 1961-. (MNS)
- ISRAEL, ARTURO b. 1938. B.Ec., Univ. of Chile, Santiago, 1960. Economics of Transport (s). Appointed from Univ. of Chile. Place of study: England, 1961-. (SS)
- MULLER OSINAGA, GUILLERMO b. 1921. Agron., Univ. of Chile, Santiago, 1951. Soil Science (s). Appointed from Min. of Agric., Temuco. Place of study: Mexico, 1961-. (AS)
- PARODI PINEDO, PATRICIO b. 1936. Agron., Catholic Univ. of Chile, Santiago, 1958. Plant Science—Genetics and Breeding (s). Appointed from Min. of Agric., Santiago. Place of study: U.S.A., 1961-. (AS)

- RAMIREZ ARAYA, IGNACIO** b. 1925. Agron., Univ. of Chile, Santiago, 1948. Agriculture—Plant Breeding (F); Plant Science—Genetics and Breeding (S). Appointed twice from Min. of Agric., Santiago. Places of study: Mexico, 1954–1955; U.S.A., 1961–. (AS)
- REYES MORALES, HERMAN** b. 1928. M.D., Univ. of Chile, Santiago, 1954. Medical Entomology (F). Appointed from Univ. of Chile. Place of study: Brazil, 1961–. (MNS)
- RODRIGUEZ VELIZ, SERGIO** b. 1938. Agron., Univ. of Chile, Santiago, 1961. Plant Science—Horticulture (S). Appointed while a student at Univ. of Chile. Place of study: U.S.A., 1961–. (AS)
- SANCHEZ ARELLANO, LUIS** b. 1937. Ing.Agr., Univ. of Chile, Santiago, 1961. Plant Science—Genetics and Breeding (S). Appointed from Univ. of Chile. Place of study: U.S.A., 1961–. (AS)
- TRIVELLI GANDAL, OSVALDO** b. 1935. Agron., Catholic Univ. of Chile, Santiago, 1960. Plant Science—Genetics and Breeding (S). Appointed from Catholic Univ. of Chile. Place of study: Mexico, 1961–. (AS)
- VALDIVIA BUGUENO, VITAL** b. 1926. Agron., Univ. of Chile, Santiago, 1953. Plant Science—Genetics and Breeding (S). Appointed from Min. of Agric., Santiago. Place of study: U.S.A., 1961–. (AS)
- YVER, RAUL ENRIQUE** b. 1934. Ing.Agr., Catholic Univ. of Chile, Santiago, 1957. Agricultural Economics (S). Appointed from Catholic Univ. of Chile. Place of study: U.S.A., 1961–. (SS)

## COLOMBIA

- AGUIRRE, ISAIAS** b. 1929. Maestro Superior, Natl. Normal School 1951. Intercultural Understanding (S). Appointed from Univ. of Antioquia, Medellín. Place of study: U.S.A., 1961–. (H)
- ALJURE, EMILIO** b. 1933. Lawyer, Natl. Univ. of Colombia, Bogotá, 1955. Neurophysiology (F). Appointed while a medical student at Univ. of Valle, Cali. Place of study: U.S.A., 1961–. (MNS)
- ANDRADE LLERAS, FERNANDO** b. 1933. B.S., Univ. of Maryland 1955. Biochemistry (F). Appointed from Xavier Univ., Bogotá. Place of study: U.S.A., 1961–. (MNS)
- ANGEL-GUINGUE, EDUARDO** b. 1932. M.D., Xavier Univ., Bogotá, 1960. Microbiology (F). Appointed from Xavier Univ. Place of study: Colombia, 1961–. (MNS)

- ARANZAZU, FERRY b. 1928. M.D., Xavier Univ., Bogotá, 1955. Clinical Hematology (F). Appointed from Univ. of Caldas, Manizales. Place of study: U.S.A., 1961-. (MNS)
- ARIAS-AGUIRRE, FERNANDO b. 1934. M.D., Natl. Univ. of Colombia, Bogotá, 1956. Microbiology (F). Appointed from Natl. Univ. of Colombia. Place of study: U.S.A., 1961-. (MNS)
- BARRIGA OLIVARES, RODOLFO b. 1928. M.A., Inter-American Inst. of Agric. Sciences, Turrialba, Costa Rica, 1955. Plant Science—Pathology (S). Appointed from Min. of Agric., Bogotá. Place of study: U.S.A., 1961-. (AS)
- BETANCOURT ARANGO, ALBERTO b. 1923. M.D., Univ. of Antioquia, Medellín, 1952. Obstetrics—Gynecology (F). Appointed from Univ. of Antioquia. Place of study: U.S.A., 1961-. (MNS)
- CARDONA ALVAREZ, OSCAR b. 1929. D.V.M., Univ. of Caldas, Manizales, 1955. Animal Science—Genetics and Breeding (S). Appointed from Min. of Agric., Bogotá. Place of study: U.S.A., 1961-. (AS)
- CASSALETT DAVILA, CLIMACO b. 1926. M.S., Univ. of Nebraska 1959. Plant Science—Genetics and Breeding (S); Plant Science—Genetics and Breeding (F). Appointed twice from Min. of Agric., Bogotá. Place of study: U.S.A., 1957-1959; 1961-. (AS)
- CHAVERRA G., HERNAN b. 1932. Agron., Natl. Univ. of Colombia, Medellín, 1960. Plant Science—Agronomy (S). Appointed from Min. of Agric., Bogotá. Place of study: U.S.A., 1961-. (AS)
- ECHEVERRI E., SILVIO b. 1931. M.S., Oregon State Univ. 1961. Plant Science—Agronomy (S); Plant Science—Agronomy (F). Appointed twice from Min. of Agric., Bogotá. Place of study: U.S.A., 1959-1961; 1961-. (AS)
- ESTRADA RAMOS, NELSON b. 1924. M.S., Univ. of Wisconsin 1957. Plant Science—Breeding (F); Plant Science—Genetics and Breeding (F). Appointed twice from Min. of Agric., Bogotá. Place of study: U.S.A., 1956-1957; 1961-. (AS)
- FONSECA M., SANTIAGO b. 1935. B.S., Natl. Agric. Coll., Pennsylvania, 1958. Plant Science—Genetics and Breeding (S). Appointed from Min. of Agric., Bogotá. Place of study: U.S.A., 1961-. (AS)
- FRANCO, GUILLERMO b. 1935. B.S., Univ. of the Andes, Bogotá. Theoretical and Mathematical Economics (S). Appointed from Univ. of the Andes. Place of study: U.S.A., 1961-. (SS)

- GALLEGO CARDENAS, RICARDO b. 1923. Intercultural Understanding (s). Appointed from Univ. of Antioquia, Medellín. Place of study: U.S.A., 1961-. (H)
- GUERRERO MUNOZ, RAMIRO b. 1926. Ing.Agr., Natl. Univ. of Colombia, Palmira, 1951. Soil Science (s). Appointed from Min. of Agric., Bogotá. Place of study: U.S.A., 1961-. (AS)
- GUERRERO VELASCO, HELENA b. 1933. R.N., Univ. of Valle, Cali, 1956. Nursing Education (F). Appointed (1) from Univ. of Valle; (2) while studying at Wayne State Univ. Place of study: U.S.A., 1958-1959; 1961-. (MNS)
- JARAMILLO, JORGE b. 1934. M.D., Univ. of Caldas, Manizales, 1959. Pharmacology (F). Appointed while at Tulane Univ. of Louisiana under Intern. Coop. Admin. fellowship. Place of study: U.S.A., 1961-. (MNS)
- JARAMILLO RAMIREZ, RAMON ALBERTO b. 1933. M.D., Univ. of Valle, Cali, 1958. Clinical Psychiatry (F). Appointed from Univ. of Valle. Place of study: England, 1961-. (MNS)
- LEON SARMIENTO, LUIS ALFREDO b. 1927. B.Sc., Natl. Univ. of Colombia, Bogotá, 1952. Soil Science (s). Appointed from Min. of Agric., Palmira. Place of study: U.S.A., 1961-. (AS)
- LOTERO C., JAIME b. 1930. M.S., Univ. of Florida 1960. Plant Science—Agronomy (s); Soil Science (F). Appointed twice from Min. of Agric., Bogotá. Place of study: U.S.A., 1958-1960; 1961-. (AS)
- MADIEDO MENDEZ, GONZALO b. 1934. D.V.M., Natl. Univ. of Colombia, Bogotá, 1961. Animal Science—Poultry Husbandry (s). Appointed from Min. of Agric., Bogotá. Place of study: U.S.A., 1961-. (AS)
- MARIN MORALES, JOSE GILDARDO b. 1930. B.S., Univ. of Caldas, Manizales, 1955. Soil Science (s). Appointed from Min. of Agric., Bogotá. Place of study: U.S.A., 1961-. (AS)
- MARULANDA, ABEL b. 1932. M.D., Univ. of Antioquia, Medellín, 1957. Urology (F). Appointed from Univ. of Valle, Cali. Place of study: U.S.A. 1961-. (MNS)
- MATEUS VALLES, JOSE GUILLERMO b. 1932. D.V.M., Natl. Univ. of Colombia, Bogotá, 1961. Entomology (s). Appointed from Min. of Agric., Bogotá. Place of study: U.S.A., 1961-. (AS)
- MEJIA GIRALDO, GERMAN b. 1923. Agron., Natl. Univ. of Colombia, Bogotá, 1952. Soil Science (s). Appointed from Univ. of Caldas, Manizales. Place of study: U.S.A., 1961-. (AS)



PRADILLA FERREIRA, ALBERTO b. 1934. M.D., Natl. Univ. of Colombia, Bogotá, 1957. Pediatrics (F). Appointed from Univ. of Valle, Cali. Place of study: U.S.A., 1961-. (MNS)

RAMIREZ ESTRADA, RICARDO b. 1921. M.S., Iowa State Univ. of Science and Technology 1955. Agriculture—Plant Breeding (F); Plant Science—Genetics and Breeding (F). Appointed twice from Min. of Agric., Bogotá. Place of study: U.S.A., 1954-1955; 1961-. (AS)

RAMIREZ OSPINA, RODRIGO b. 1928. Ing.Agr., Natl. Univ. of Colombia, Medellín, 1954. Agronomy (S). Appointed from Agric. Exper. Station, Medellín. Place of study: U.S.A., 1961-. (AS)

REVELO PEPINOSA, MIGUEL A. b. 1929. M.S., Iowa State Univ. of Science and Technology 1959. Plant Science—Entomology (S); Entomology (F). Appointed twice from Min. of Agric., Bogotá. Place of study: U.S.A., 1957-1959; 1961-. (AS)

SANCHEZ FARRUT, OTTO HERNANDO b. 1932. D.V.M., Natl. Univ. of Colombia, Bogotá, 1961. Animal Science—Veterinary Science (S). Appointed from Min. of Agric., Bogotá. Place of study: U.S.A., 1961-. (AS)

SOHM KUHNE, OSCAR DIETER b. 1935. Ing.Agr., Natl. Univ. of Colombia, Medellín, 1959. Plant Science—Genetics and Plant Breeding (S). Appointed from Min. of Agric., Bogotá. Place of study: U.S.A., 1961-. (AS)

TERNENT, JAMES ANTHONY SHORT b. 1936. B.B.A., Univ. of Miami 1958. International Economics (S). Appointed from Univ. of the Andes, Bogotá. Place of study: U.S.A., 1961-. (SS)

TORREGROZA CASTRO, MANUEL b. 1926. M.S., Univ. of Nebraska 1959. Plant Science—Genetics (S); Plant Science—Genetics and Breeding (F). Appointed twice from Min. of Agric., Bogotá. Place of study: U.S.A., 1957-1958; 1961-. (AS)

ZAPATA BALCAZAR, JOSE MARIO b. 1925. M.S., Univ. of Minnesota 1958. Plant Science—Breeding (F); Plant Science—Genetics and Breeding (F). Appointed twice from Min. of Agric., Bogotá. Place of study: U.S.A., 1956-1958; 1961-. (AS)

## ECUADOR

AVILA MEDINA, QUINTO b. 1927. D.V.M., Univ. of Guayaquil 1952. Animal Science—Poultry Husbandry (S). Appointed from Univ. of Guayaquil. Place of study: Mexico, 1961-. (AS)

## EL SALVADOR

- GODOY R., GERARDO ANTONIO b. 1931. M.D., Univ. of El Salvador, San Salvador, 1959. Basic Medical Sciences (F). Appointed from Univ. of El Salvador. Place of study: U.S.A., 1961-. (MNS)
- PINO MAZZINI, GUILLERMO RAFAEL b. 1929. Statistics (F). Appointed from Univ. of El Salvador, San Salvador. Place of study: U.S.A., 1961-. (MNS)
- SIGARAN, MANUEL FRANCISCO, JR. b. 1929. M.D., Univ. of El Salvador, San Salvador, 1959. Basic Medical Sciences (F). Appointed from Univ. of El Salvador. Place of study: U.S.A., 1961-. (MNS)

## GUATEMALA

- SOSA SANDOVAL, OSCAR NEVY b. 1930. B.S., Univ. of Minnesota 1958. Agriculture (s); Agriculture—Plant Pathology (s). Appointed (1) from Natl. Inst. of Agric. and Livestock Technology, Guatemala City; (2) while a graduate student at Univ. of Minnesota. Place of study: U.S.A., 1951-1953; 1961-. (AS)

## MEXICO

- ANDRADE, FRANCISCO JACINTO b. 1934. Ing.Agr., Natl. School of Agric., Chapingo, 1958. Agricultural Economics (s). Appointed from Natl. Inst. of Agric. Research, Mexico City. Place of study: U.S.A., 1961-. (AS)
- ANGLI, JOSE SOTO b. 1934. Ing.Agr., Natl. School of Agric., Chapingo, 1958. Economics and Rural Life (s). Appointed from Natl. Inst. of Agric. Research, Mexico City. Place of study: U.S.A., 1961-. (AS)
- CAMPOS VELA, ARMANDO, VI b. 1935. Ing.Agr., Antonio Narro Coll. of Agric., Saltillo, 1958. Plant Science—Pathology (s). Appointed from Natl. Inst. of Agric. Research, Mexico City. Place of study: U.S.A., 1961-. (AS)
- CARMONA RUIZ, GILDARDO b. 1936. Ing.Agr., Antonio Narro Coll. of Agric., Saltillo, 1958. Soil Science (s). Appointed from Natl. Inst. of Agric. Research, Mexico City. Place of study: U.S.A., 1961-. (AS)
- CORONADO HINOJOSA, JESUS b. 1937. Lic., Technological Inst. and School of Advanced Studies of Monterrey 1961. Economics (s). Appointed while a student at Technological Inst. and School of Advanced Studies of Monterrey. Place of study: U.S.A., 1961-. (SS)
- DE ALBA FLORES, GABINO b. 1925. M.S., Purdue Univ. 1960. Plant Science—Genetics and Breeding (s); Plant Science—Genetics and Breed-

ing (F). Appointed twice from Technological Inst. and School of Advanced Studies of Monterrey. Place of study: U.S.A., 1958-1960; 1961-. (AS)

FLORES CACERES, SILVERIO b. 1918. M.S., Louisiana State Univ. 1959. Plant Science—Economic Entomology (s); Plant Science—Pathology (F). Appointed from (1) Natl. School of Agric., Chapingo; (2) Inst. for the Improvement of Sugar Cane Production, Mexico City. Place of study: U.S.A., 1957-1959; 1961-. (AS)

GARCIA SANCHEZ, ALFREDO b. 1928. Ing.Agr., Antonio Narro Coll. of Agric., Saltillo, 1952. Agriculture—Wheat Breeding (s); Agronomy (F). Appointed from (1) Office of Special Studies, Mexico City; (2) Natl. Inst. of Agric. Research, Mexico City. Places of study: Canada, 1955-1957; U.S.A., 1961-. (AS)

GARZA TREVINO, RICARDO b. 1934. M.S., Univ. of California 1960. Plant Science—Agronomy (s); Plant Science—Agronomy (F). Appointed from (1) Office of Special Studies, Mexico City; (2) Natl. Inst. of Agric. Research, Mexico City. Place of study: U.S.A., 1958-1960; 1961-. (AS)

JIMENEZ SANCHEZ, LEOBARDO b. 1930. Ing.Agr., Natl. School of Agric., Chapingo, 1960. Agricultural Journalism (s). Appointed from Natl. Inst. of Agric. Research, Mexico City. Place of study: U.S.A., 1961-. (AS)

KOHASHI SHIBATA, JOSUE b. 1926. M.S., Cornell Univ. 1959. Plant Science—Genetics (s); Plant Science—Physiology (F). Appointed from (1) Office of Special Studies, Mexico City; (2) Natl. Inst. of Agric. Research, Mexico City. Place of study: U.S.A., 1957-1959; 1961-. (AS)

LEON MANZO, RICARDO b. 1917. Ing.Agr., Natl. School of Agric., Chapingo, 1946. Plant Science—Physiology (s). Appointed from Natl. Inst. of Agric. Research, Mexico City. Place of study: U.S.A., 1961-. (AS)

LUBAN, MIGUEL b. 1908. D.L., Free Univ. of Brussels, Belgium, 1931. Law (F). Appointed from Natl. Univ. of Mexico, Mexico City. Place of study: U.S.A., 1961-. (SS)

MAS ARAUJO, MANUEL b. 1927. Lic.Dip., Natl. Univ. of Mexico, Mexico City, 1957. International Relations (s). Appointed from Colegio de México, Mexico City. Place of study: France, 1961-. (SS)

MERINO IRIGOYEN, RUBEN b. 1929. Ing.Agr., Antonio Narro Coll. of Agric., Saltillo, 1958. Plant Science—Pathology (s). Appointed from Natl. Inst. of Agric. Research, Mexico City. Place of study: U.S.A., 1961-. (AS)

MIRANDA COLIN, SALVADOR b. 1934. Ing.Agr., Natl. School of Agric.,

- Chapingo, 1959. Plant Science—Genetics and Breeding (s). Appointed from Natl. Inst. of Agric. Research, Mexico City. Place of study: U.S.A., 1961-. (AS)
- MORALES M., MINERVA b. 1938. Dipl., Natl. Univ. of Mexico, Mexico City, 1961. International Relations (s). Appointed from Natl. School of Political and Social Studies, Mexico City. Place of study: U.S.A., 1961-. (SS)
- OLMOS BARRERA, GIL b. 1934. Ing.Agr., Antonio Narro Coll. of Agric., Saltillo, 1961. Economics and Rural Life (s). Appointed from Natl. Inst. of Agric. Research, Mexico City. Place of study: U.S.A., 1961-. (AS)
- ORTIZ CERECERES, JOAQUIN b. 1936. Ing.Agr., Natl. School of Agric., Chapingo, 1961. Plant Science—Genetics and Breeding (s). Appointed from Natl. Inst. of Agric. Research, Mexico City. Place of study: U.S.A., 1961-. (AS)
- PEREZ UGALDE, GELACIO b. 1930. Ing.Agr., Antonio Narro Coll. of Agric., Saltillo, 1959. Genetics and Breeding—Plant Science (s). Appointed from Natl. Inst. of Agric. Research, Mexico City. Place of study: U.S.A., 1961-. (AS)
- PINEDA, REYNALDO LUIS b. 1919. Ing.Agr., Natl. School of Agric., Chapingo, 1945. Plant Science—Agronomy (s). Appointed from Natl. Inst. of Agric. Research, Mexico City. Place of study: U.S.A., 1961-. (AS)
- RETA P., GUSTAVO b. 1937. D.V.M., Natl. School of Veterinary Med. and Animal Husbandry, Mexico City, 1960. Animal Science—Poultry Husbandry (s). Appointed from Natl. School of Veterinary Med. and Animal Husbandry. Place of study: U.S.A., 1961-. (AS)
- RIVERA CAMARENA, JORGE ENRIQUE b. 1928. M.S., Washington State Univ. 1958. Plant Science—Pathology (F). Appointed twice from Technological Inst. and School of Advanced Studies of Monterrey. Place of study: U.S.A., 1956–1958; 1961-. (AS)
- RIVERA CRUZ, EDUARDO b. 1932. D.V.M., Natl. School of Veterinary Med. and Animal Husbandry, Mexico City, 1956. Animal Science—Veterinary Science (s). Appointed from Natl. School of Veterinary Med. and Animal Husbandry. Place of study: U.S.A., 1961-. (AS)
- ROSAS MENDOZA, OSCAR b. 1933. M.D., Univ. of Guanajuato, León, 1960. Physiology (F). Appointed while a research fellow at Natl. Inst. of Cardiology, Mexico City. Place of study: Mexico, 1961-. (MNS)
- SIFUENTES AGUILAR, JUAN ANTONIO b. 1926. M.S., Kansas State Univ. 1958. Plant Science—Economic Entomology (F); Entomology (F).

Appointed from (1) Office of Special Studies, Mexico City; (2) Natl. Inst. of Agric. Research, Mexico City. Place of study: U.S.A., 1956-1958; 1961-. (AS)

TELIZ ORTIZ, DANIEL b. 1938. Ing.Agr., Natl. School of Agric., Chapingo, 1959. Plant Science—Pathology (s). Appointed from Natl. Inst. of Agric. Research, Mexico City. Place of study: U.S.A., 1961-. (AS)

TELIZ ORTIZ, MOISES b. 1931. M.S., Cornell Univ. 1958. Plant Science—Pathology (s); Agriculture—Plant Pathology (F). Appointed from (1) Office of Special Studies, Mexico City; (2) Natl. School of Agric., Chapingo. Place of study: U.S.A., 1957-1958; 1961-. (AS)

VAZQUEZ GUILLEN, GREGORIO b. 1928. M.S., North Dakota State Coll. 1958. Plant Science—Genetics and Breeding (F). Appointed from (1) Office of Special Studies, Mexico City; (2) Natl. Inst. of Agric. Research, Mexico City. Place of study: U.S.A., 1956-1958; 1961-. (AS)

VILLEGAS MORENO, EVANGELINA b. 1925. Biologist, Natl. School of Biological Sciences, Mexico City, 1948. Chemistry (s). Appointed from Natl. Inst. of Agric. Research, Mexico City. Place of study: U.S.A., 1961-. (AS)

## NICARAGUA

VILLENA DUCHEN, WILLY b. 1931. Ing.Agr., Univ. of San Simón, Cochabamba, Bolivia, 1954. Plant Science—Corn Improvement (s); Plant Science—Genetics and Breeding (s). Appointed from (1) Univ. of San Simón; (2) Min. of Agric. and Animal Husbandry, Managua. Places of study: Mexico, 1955-1956; U.S.A., 1961-. (AS)

## PERU

AGUILAR CACERES, LEONIDAS b. 1927. M.D., Univ. of San Marcos, Lima, 1953. Neurophysiology (F). Appointed while a research fellow at the Catholic Univ. of Chile, Santiago. Place of study: Chile, 1961-. (MNS)

CHRISTIANSEN GONZALEZ, JORGE b. 1934. Agrarian Univ., La Molina, Lima, 1957. Plant Science—Genetics and Breeding (s). Appointed from Min. of Agric., Lima. Place of study: Mexico, 1961-. (AS)

DONGO DENEGRI, SEGUNDO b. 1927. Ing.Agr., Agrarian Univ., La Molina, Lima, 1957. Plant Science—Pathology (s). Appointed from Min. of Agric., Lima. Place of study: Mexico, 1961-. (AS)

MANRIQUE CHAVEZ, ANTONIO b. 1926. Ing.Agr., Natl. School of Agric., La Molina, Lima, 1954. Plant Science—Corn Breeding (s); Plant Science—Genetics and Breeding (s). Appointed from (1) Natl. School of Agric.;

(2) Agrarian Univ., La Molina, Lima. Places of study: Mexico, Colombia, 1954-1955; U.S.A., 1961-. (AS)

ORBEZO SUAREZ, GERMAN b. 1931. D.V.M., Univ. of San Marcos, Lima, 1958. Animal Science (s). Appointed from Univ. of San Marcos. Place of study: Mexico, 1961-. (AS)

PIMENTEL, HECTOR RAFAEL b. 1929. Ing.Agr., Natl. School of Agric., La Molina, Lima, 1954. Food Technology (s). Appointed from Agrarian Univ., La Molina, Lima. Place of study: U.S.A., 1961-. (AS)

RONDON OLAZAVAL, MARIO b. 1931. Ing.Agr., Natl. School of Agric., La Molina, Lima, 1955. Plant Science—Genetics and Breeding (s). Appointed from (1) Natl. School of Agric.; (2) Agrarian Univ., La Molina, Lima. Places of study: Mexico, 1957-1958; U.S.A., 1961-. (AS)

TISNADO, ALICIA b. 1933. Librarian, Natl. School of Library Science, Lima, 1955. Library Science (s). Appointed from Natl. School of Engineering, Lima. Place of study: U.S.A., 1961-. (AS)

VOYSEST V., OSWALDO b. 1933. Ing.Agr., Agrarian Univ., La Molina, Lima, 1957. Plant Science—Genetics and Breeding (s). Appointed twice from La Molina Exper. Station. Places of study: Mexico, 1958-1959; U.S.A., 1961-. (AS)

## URUGUAY

PICCION NUNES, GLADYS MARIA b. 1928. Nursing Dipl., Dr. Carlos Nery School of Nursing, Salto, 1949. Nursing Education (F). Appointed from Univ. School of Nursing, Montevideo. Place of study: U.S.A., 1961-. (MNS)

PORTA, LILA AZUCENA b. 1920. Certificate, Wayne State Univ. 1955. Nursing Education (F). Appointed from Univ. School of Nursing, Montevideo. Place of study: U.S.A., 1961-. (MNS)

## VENEZUELA

MORILLO ANDRADE, FRANCISCO JOSE b. 1935. M.Agr., Inter-American Inst. of Agric. Sciences, Turrialba, Costa Rica, 1958. Animal Science—Genetics and Breeding (F). Appointed from Min. of Agric. and Animal Breeding, Maracay. Place of study: U.S.A., 1961-. (AS)

## WEST INDIES—JAMAICA

MASSON, ANDREW FRANCIS b. 1927. M.B., B.S., Univ. of London, England, 1951. Neurosurgery (F). Appointed from Univ. Coll. Hospital of the West Indies, Mona. Place of study: England, 1961-. (MNS)

## AFRICA

Of the myriad tasks to which the new African states are setting themselves in their drive for rapid development, none is assigned higher long-range importance than the expansion and improvement of education. The educational systems inherited from their colonial pasts vary greatly in size and quality, but no one of the new states has elementary and secondary schools, or higher institutions, with anywhere near the capacity to meet national needs. To expand existing systems and to create new ones is a task confronting all the new states at a time when they must simultaneously build up communications, industry, agriculture, finances, public health, and all the other institutions and services upon which their futures depend.

The many foreign agencies, both governmental and private, which are seeking to give assistance to the African states must of necessity make choices among practical possibilities in keeping with their resources and interests. The Rockefeller Foundation has chosen to direct its efforts toward the training of future leaders through aid to African universities, particularly in the disciplinary areas where the Foundation has had most experience. Professional education in medicine, nursing, public health, agriculture, and economics, and the encouragement of advances in the other social sciences and the humanities are the points of concentration.

The Foundation is proceeding on the assumptions that this advanced training should be home-based in African institutions, and that it should be research-oriented. While not neglecting its traditional employment of fellowships and scholarships for foreign study to meet particular training

needs in certain situations, the Foundation believes that strong local universities must be the main reliance for educating the numbers and varieties of leaders required.

Research-oriented advanced training has the double advantages of the value which participation in research adds to the quality of training the student receives, and of the practical benefits often derived from research projects directed toward the solution of local problems. A good example is the planned participation of graduate students in the field and laboratory work on bilharziasis sponsored in part by Makerere University College, which is mentioned again later.

In most of the other developing areas of the world, present Rockefeller Foundation programs have evolved from experience with the countries and their universities that in some instances goes back over five decades. In Africa, until fairly recently, the experience was more or less limited to direct operations in the study of certain public health problems. During its investigations of yellow fever, the Foundation operated field laboratories for a number of years in Nigeria and Uganda, and in its work on the arthropod-borne viruses also cooperated in maintaining laboratories in Cairo and Johannesburg. But in colonial Africa in general there was little opportunity for most of the other programs to which the Foundation has devoted its attention.

Recent years, however, have brought many opportunities to be of assistance. During 1961 a total of approximately \$1,200,000 was appropriated for various projects in Africa, and the trend is likely to continue upward.

### **The Congo**

Lovanium University, which is situated near Leopoldville, the Congolese capital, was established in 1954 with student admission requirements and academic standards sufficiently rigorous to make its degrees comparable to those awarded by universities in Belgium. In the troubled period immediately following the achievement of independence by



the Congo in 1960, the university was held in such high regard that it could continue operation with only one interruption, when its buildings were used for a session of the national parliament. Its regular sources of support, however, were seriously affected by the transfer from Belgian to Congolese national responsibility, and The Rockefeller Foundation was one of several agencies which provided funds for running expenses during 1961. Total Foundation aid to Lovanium, including grants to the Faculty of Medicine, the School of Nursing, and the Institute of Agriculture, amounts to almost \$911,300.

The university consists of nine faculties representing all the major disciplines, with principal emphasis being placed on medicine, the political and social sciences, philosophy and letters, and the natural sciences.

Though the number of secondary school graduates in the Congo is increasing each year, it will be some time before there are enough with full qualifications for degree courses to fill the university. In the meantime the university is offering subfreshman courses for students whose preparation is nearly complete, as well as instituting non-degree diploma courses for technical and vocational students. A good many non-Congolese French-speaking Africans have also been admitted, in accordance with a policy which is to be permanent.

Lovanium is now an independent university, controlled by a board of trustees with a majority of Congolese members. The faculty, for the most part trained in Europe, are vigorously pursuing research in a number of specialties. Lovanium is growing into one of the important African centers of higher education.

### **East Africa**

Bordering the Congo on the east are the three states which will form the projected Federation of East Africa—Uganda, Kenya, and Tanganyika. Three colleges, one in each state, have already become associated as the University of East Africa: Makerere University College in Kampala,

Uganda; the Royal College in Nairobi, Kenya, formerly the Royal Technical College; and the University College in Dar es Salaam, Tanganyika, which began limited work in the fall of 1961 and anticipates rounding out its arts curriculum by 1964.

Each of the colleges offers a full undergraduate curriculum in the arts and sciences. At the graduate and professional level, to make the most efficient use of facilities and personnel and to avoid excessive overlapping and duplication, each will specialize in a few selected areas. Makerere University College will emphasize medicine, agriculture, economics, the fine arts, and teacher training. The Royal College will offer advanced work in engineering, architecture, home economics, public administration, and veterinary science. The University College will eventually provide graduate instruction in political science, history, political economy, and international law.

The Foundation assisted all three colleges during 1961. A grant of £17,930 (about \$51,000) will aid the Department of Education at Makerere in developing a program in music with emphasis on Africa. The purpose is not only to provide music teachers for the primary and secondary schools of the three states, but also to create a center for formal instruction in both musical composition and performance. Professor Solomon Mbabji-Katana, a composer and a graduate of both Makerere and the Royal Academy of Music in London, has been chosen to direct the new program.

At the Royal College, Kenya, a \$90,000 grant contributed to the establishment of a degree program in the sciences, begun in the fall of 1961. Courses leading to the bachelor's degree are offered in mathematics, geography, geology, zoology, botany, physics, and chemistry. The college will also continue the technical courses in engineering sciences and architecture formerly offered by the Royal Technical College.

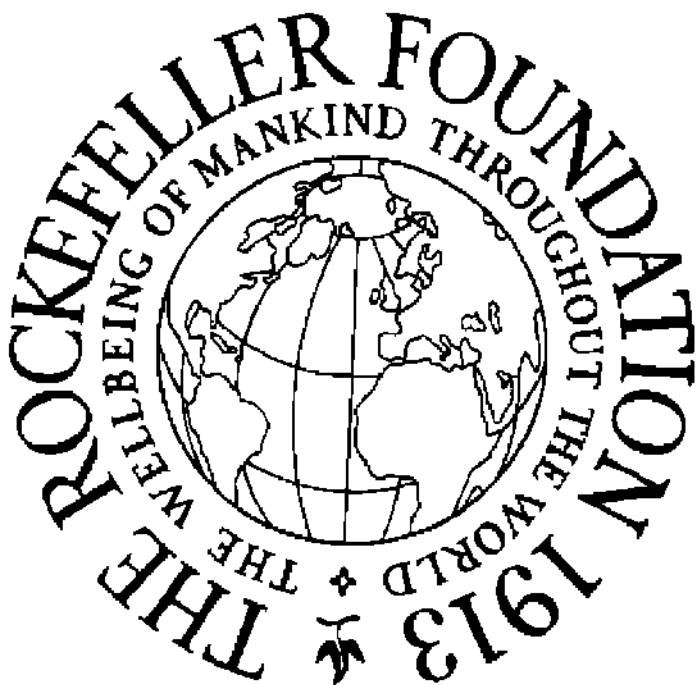
The Faculty of Law is the first unit of the University College in Tanganyika to have begun operation; Professor

A. B. Weston, formerly of the University of Toronto, is the dean. In recognition of the new faculty's urgent need for a law library, the Foundation has contributed £10,000 (about \$28,500) toward the purchase of a basic collection of books in law and the social sciences. Lists of the books needed have been prepared by legal scholars in Tanganyika, Uganda, Great Britain, and the United States.

Other grants are helping to bring visiting professors to the East African colleges, to give faculty members an opportunity to visit other institutions, to increase library holdings, and to purchase scientific and laboratory equipment. Altogether the Foundation appropriated some \$200,000 to the University of East Africa in 1961.

Financial support also was given to the Law School, Yale University, for a special program of graduate study for Africans preparing to be teachers of law in their own countries. The Yale Law School has recently formed ties with the Faculty of Law of the University College in Tanganyika, which it assisted in the preparation of a basic library, but the new program is open to scholars in all the African nations. A Foundation grant of \$30,000 will help bring five candidates for the degree of Master of Laws, and three for the degree of Doctor of the Science of Law, to New Haven annually.

*Tanganyika Information Services*



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## **Sudan**

In the Sudan the administration of the University of Khartoum is planning the rapid expansion of its facilities to take care of an anticipated enrollment of 3,500 five years from now. Two Foundation grants totaling \$141,000 were made to assist the administration in achieving this goal and to strengthen the research aspects of the university's work over the next four years.

The Faculty of Medicine, with improved clinical and research facilities in a newly completed science building, is emphasizing the training of young Sudanese for future posts as teachers. Foundation funds are assisting this program.

The Faculty of Science, which teaches the basic sciences to students who later specialize in agriculture or veterinary science, is building up its research work on the biology of the region around Khartoum. The Faculty of Agriculture is expanding its work in crop and animal husbandry and in crop protection, and the Faculty of Veterinary Science is extending its research in nutrition and biochemistry, with some assistance from the new grants.

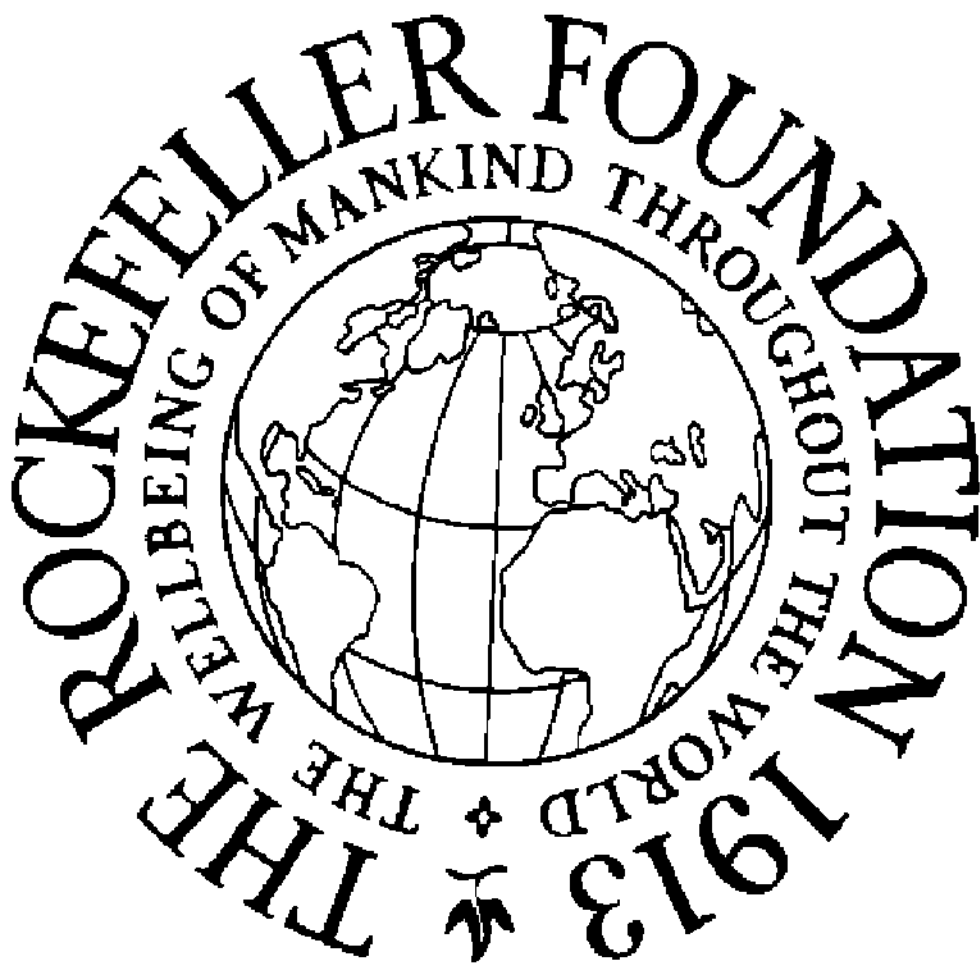
Some aid is also going to the Department of Geology, which is training Sudanese in the methods of exploiting mineral resources. This field is important for the country's future economic growth, since the potential expansion of agriculture, now the country's chief reliance, is sharply limited by the amount of arable land and by the shortage of water.

## **West Africa**

Cuttington College and Divinity School, in Suacoco, Liberia, is a small coeducational institution, operated under the auspices of the Protestant Episcopal Church and with a wide reputation for excellent academic standards. In the past its students have been mainly children of Europeans, but it

*In the library of the University College, Tanganyika,  
a law student checks a legal point.*

has always accepted Africans, and now the number of Africans applying for entrance makes it necessary to increase the capacity of the school from the present 140 to a much higher figure. Faculty is the limiting factor in expansion. The college has drawn up an extensive plan for sending potential African staff abroad for advanced study, and pending their return, is recruiting foreign faculty members on temporary appointments. A Foundation grant of \$39,000 is helping to finance these interim arrangements through December, 1963.



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*In a "palaver house" in a village near Suacoco, an education student at Cuttington College teaches a group of children.*

The largest and one of the most important universities in West Africa is the 14-year-old University College in Ibadan, Nigeria. Established after careful study and planning, it emerged under the direction of outstanding educators from the United Kingdom and achieved standards of academic excellence and educational philosophy consistent with the best traditions and experience of the universities in Britain. Since Nigerian independence in 1960 it has come under able African leadership. Its faculty, which is of unusual distinction, still consists largely of foreign teachers, but growing numbers of Africans trained during the college's formative years are now returning to fill academic posts. Enrollment, presently 1,800, is expected to rise to an estimated 5,000 by 1970, including 250 candidates for the doctoral degree.

In the present period of major growth and change in Africa there is increasing need for educational leadership and trained personnel to create and staff the numerous new universities being planned in Nigeria and in other new states. The University College is in an excellent position to help supply this leadership through its vigorous development of postgraduate work in all its faculties.

The Rockefeller Foundation has assisted the college for several years through grants totaling over \$380,000. About half this amount has gone for various activities in medicine and public health, including a program of teaching and research in rural pediatrics. A substantial appropriation in 1959 aided the establishment of a series of studies on Islam in Africa, and another in 1960 helped advance research in the Faculty of Agriculture.

This year, two five-year grants were made. One of £10,000 (about \$28,500) supports in part a plan of faculty exchanges intended to encourage closer contact and communication among professors in five widely separated schools of medicine in Africa. Sharing in these exchanges will be the medical school at Ibadan, which is organizing the project, and the schools at Dakar, Senegal; Leopoldville, Congo;



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*Tower Court and part of Mellanby Hall, a student residence, at University College, Ibadan.*

Khartoum, Sudan; and Kampala, Uganda. Under the plan, two visitors each from four of the schools will spend annually at least two weeks in the fifth faculty. Each year a different school will act as host.

The second grant, of Nigerian £141,350 (about \$400,000), will help establish an Institute of African Studies. To be directed by Dr. Kenneth O. Dike, principal of the university, the proposed institute will be primarily concerned with studies in the humanities and social sciences, and will consist of a director, a small administrative staff, and a body of fel-

lows actively engaged in research. Most of the fellows will be selected from the University College faculty and from promising young graduates. The goal will be the development of research on Africa within existing university departments and the training of scholars and university-level teachers in the humanities and social sciences who will combine competence in their particular disciplines with a research interest in Africa.

Sorghum is a cereal little known to the general public in the United States, where the shot-like grain is used chiefly for poultry and cattle feed mixes, but in large areas of the world it is a staple in the human diet. Especially is this true in Africa, where in regions lacking enough rainfall to grow maize for "mealie," the drought-resistant sorghum can be more reliably grown. Improvement of quality and yield of sorghum in Africa would be a valuable and immediate contribution to better human nutrition.

In addition to helping a number of schools of agriculture in Africa, the Foundation is aiding directly a program of sorghum improvement at the Northern Region Experiment Station, near Samaru, Nigeria, where a vocational school of agriculture is also located. This station, with a professional staff of 40 senior members, a farm of more than 600 acres, and good buildings and equipment, was established by the British colonial administration in 1922. The staff was almost exclusively European until independence, and since then the administration has faced the usual problems inherent in the change-over to African leadership.

Good progress is being made with the sorghum studies. In the Northern Region about 15 million acres, over 50 per cent of the cultivated land, is planted to sorghum. The behavior of native varieties under different geographical and climatic conditions is being studied, and seeds of different types are being collected to form a germ plasm bank which will be supplemented by foreign types. Breeding for the production of hybrid sorghums is already well advanced.



Improvement work with the millets, which are close relatives of sorghum, is following the same general outlines. This part of the program is centered at a substation near Kano, where millets are intensively cultivated.

The Foundation's grant of \$345,000 will provide partial support for these studies over the next three years.

Bilharziasis is a parasitic disease in which snails play an essential role. It is caused by a flatworm living in the blood vessels whose eggs are discharged with body wastes. If the eggs reach water in which certain kinds of snails live, the parasite invades and develops in the snail's body, becoming a free-swimming larval form which can cut through the skin of a man or animal, to start again its cycle in the blood vessels.

Characterized as the "greatest unconquered parasitic disease now afflicting man and animals," bilharziasis is found in practically every region in the tropical and subtropical zones around the world. Seldom is it fatal; its effects are debility and lowered energy caused by the degeneration of tissue in bodily organs.

Ironically, bilharziasis is growing in seriousness in underdeveloped nations where people are struggling hardest to raise their level of well-being through agricultural improvement. Snails thrive in the warm, moist, shady edges of irrigation ditches. Irrigation projects to bring formerly dry land into agricultural production also bring bilharziasis to regions where it was unknown.

Control of the disease would be possible if the life cycle of the parasite could be interrupted at any point, but at present and in the immediately foreseeable future such interruption seems impractical. Treatment requires many injections over successive days to kill the flukes in an infected person, and many people refuse to complete the series. Improved sanitation through protected water supplies and sewage disposal would prevent the eggs discharged with excrement from reaching water where the snails lurk and where people

bathe or wash laundry, but when sanitary systems are rare even in the cities of underdeveloped countries, their general installation in rural regions is remote indeed.

A direct attack would be to kill the snails, and in city water reservoirs this can easily be done. But chemical controls cannot easily be applied in irrigation canals or running streams and experience with them has been uniformly disappointing.

It may well be asked why so ancient a disease (eggs of the parasite have been found in Egyptian mummies 3,500 years old) is not better understood or controlled. The answer is, in part, that the disease does not draw dramatic attention



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*A hot water emasculation technique is being applied to sorghum at the Northern Region Experiment Station, Samaru.*

to itself. It cripples but does not kill; when first infected, children are usually not sick enough to be put to bed. The disease never flares up into epidemics threatening rich and poor, city dwellers and farmers, alike. Bilharziasis is the poor country cousin among diseases.

The lowered human energy and productivity directly attributable to bilharziasis, assessed in terms of days of labor lost and decreased output, reach astonishing figures. No longer can developing nations afford to ignore this disease.

A good deal of research has been done on bilharziasis, but for the most part it has been scattered and sporadic. No example can be cited of a combined effort to study the clinical disease at all ages and to relate these results to simultaneous studies of the biology and ecology of the snail vector in the area of infestation responsible for the human cases under study. No successful attempt has been made to combine all possible methods of control in a single attack on the disease in a population or a community, along with simultaneous studies of the factors affecting transmission of the disease.

The Rockefeller Foundation is fortunate in being able to aid the beginning of such a coordinated attack, launched in 1961 under the direction of Professor George Macdonald, Director of the Ross Institute of the London School of Hygiene and Tropical Medicine. With the cooperation of the British Medical Research Council, a team has been formed which uses Makerere Medical College in Uganda as its clinical base. The East African Medical Research Council is furnishing epidemiological and biological personnel for the field staff. The disease will be studied among Africans in the area around Lake Victoria. To defray some of the research expenses over the next five years, the Foundation is providing \$142,500 (about £50,000).

In a long-range project like this, it is necessary to provide tenure and continuity for the scientists on the team. Arrangements have been made to attach them to the staff of the Ross Institute in London while they remain in the field under the general aegis of Makerere University College.

They will not only conduct the investigations but also train Africans in the techniques of investigating bilharziasis on a team basis.

Will this new step be successful? Only time can answer this question. It is a hopeful omen, however, that the team approach proved successful in achieving control of malaria, yellow fever, and a number of other infectious diseases. While the present outlook for the possible control of bilharziasis is gloomy at best, the future now holds some promise of a successful attack upon this serious, endemic, and crippling disease.



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*A member of the bilharziasis research team of the Ross Institute examines a Tanganyikan.*

## Grants Made in Africa

*MNS: Medical and Natural Sciences; AS: Agricultural Sciences;  
SS: Social Sciences; H: Humanities; G: General; F: Fellow; S: Scholar*

Support of a conference dealing with inter-university cooperation in sub-Saharan Africa; \$20,000 through December, 1962; (H)

### CONGO

Dr. J. J. Sonnet, professor of internal medicine, Faculty of Medicine, Lovanium University, Leopoldville: to undertake research in hematology at The Rockefeller Institute, New York; \$1,540; (MNS)

### ETHIOPIA

University College, Addis Ababa: research preliminary to the preparation of a history of Ethiopia, by Sven Rubenson; 14,000 Ethiopian dollars (about \$5,880) for a two-year period; (H)

### GHANA

Arts Council of Ghana, Accra: support of the Ghana Drama Studio, under the direction of Mrs. Efua Sutherland; £3,520 (about \$10,000); (H)

Professor K. Twum-Barima, head, School of Agriculture, Kwame Nkrumah University of Science and Technology (formerly the Kumasi College of Technology): to attend the Eighth National Conference of the United States National Commission for UNESCO in Boston, Massachusetts, and to confer with agricultural educators in the United States, Puerto Rico, and Trinidad; \$3,280; (AS)

Ministry of Agriculture, Accra:

Frederick Maxwell Amfo Sackey, poultry development officer, Division of Agriculture, Pokoase; to visit centers of research in poultry science in the United States; \$7,240; (AS)

A. S. A. Abban, ministerial secretary; to visit centers of agricultural research in the United States; \$3,350; (AS)

Alfred Ernest Chinbuah, principal secretary; to visit large-scale mechanized farming projects, and to consult with farm management specialists in the United States; \$2,990; (AS)

University of Ghana, Accra:

Development of a program in African music, under the direction of J.

H. Nketia, acting director, Institute of African Studies, and support of the research program of the institute; £5,430 (about \$15,475); (H)

Research equipment for the Department of Chemistry; \$9,000; (MNS)

To help meet the expenses of a visiting professorship in physics; Ghanaian £1,000 (about \$2,850); (MNS)

## KENYA

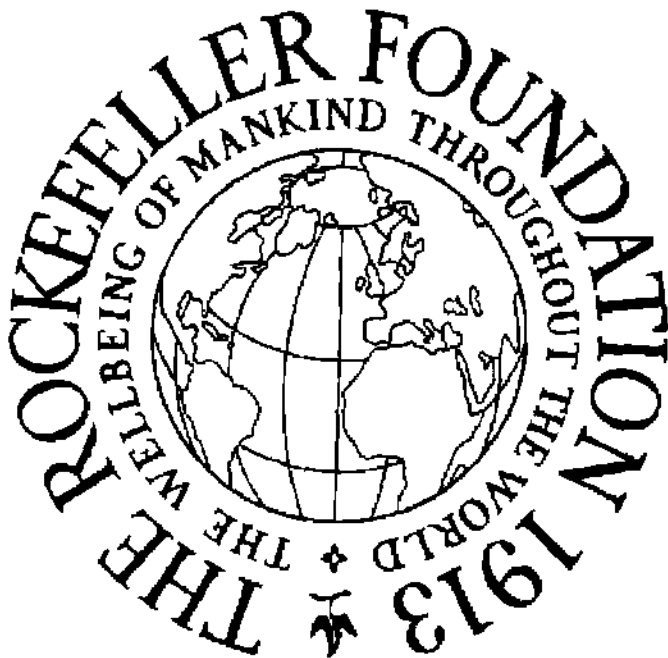
Coryndon Memorial Museum, Nairobi: study of primates in Kenya and Uganda, by Mrs. C. B. M. Booth, zoologist, University of Cambridge, England; \$2,850; (MNS)

East African Common Services Organization, Nairobi:

Equipment for the East African Marine Fisheries Research Organization, Zanzibar; \$10,000; (AS)

Spectrographic equipment for the East African Agriculture and Forestry Research Organization, Kikuyu; \$7,500; (AS)

E. J. Guthrie, plant pathologist, Department of Agriculture, Ministry of Agriculture, Animal Husbandry, and Water Resources, Nairobi: to visit centers of research in plant pathology in the United States, Canada, and Mexico; \$4,700; (AS)



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*Model for the new home of the Ghana Drama Studio.*

Dr. Brian Andrew Southgate, medical officer of health, Ministry of Health and Social Affairs, Kitui: to undertake postgraduate studies in epidemiology and medical statistics at the University of London, England; \$1,965; (MNS)

Royal College, Nairobi:

Development of a degree program in the sciences; \$90,000 through June, 1963; (G)

Research equipment for the Department of Chemistry; \$9,940; (MNS)

Library acquisitions in the field of African studies and African history; £2,500 (about \$7,125) for a two-year period; (G)

Books and periodicals for the Department of Economics; \$5,000; (G)

## LIBERIA

Cuttington College and Divinity School, Suacoco: to develop the faculty in the fields of economics, chemistry, and education; \$39,000 through December, 1963; (SS-MNS-H)

## MALI

Federal Animal Husbandry Research Center, Sotuba: equipment for an artificial insemination program; \$5,000; (AS)

## NIGER

Kolo Agronomy Station: field equipment; \$5,000; (AS)

## NIGERIA

Claude C. Cheysson, Secretary-General, Commission for Technical Cooperation in Africa South of the Sahara, Lagos: to attend the Eighth National Conference of the United States National Commission for UNESCO in Boston, Massachusetts; \$1,900; (AS)

Alhaji Jose, editor, *Daily Times*, Lagos: to attend the 1961 meeting of the International Press Institute in Tel Aviv, Israel, and to study the press in selected African cities; \$2,150; (H)

Ministry of Economic Development, Moor Plantation, Ibadan:

P. M. Chinwuba, agronomist, Federal Department of Agricultural Research; to visit centers of maize research in the United States and Mexico; \$4,690; (AS)

Laurence A. Mound, specialist officer, Federal Department of Agricultural Research; to carry on entomological investigations with Miss Louise Russell, United States Department of Agriculture, Washington, D.C.; \$2,420; (AS)

Northern Region Experiment Station, Samaru: development of a cereal research program; \$345,000 for a three-year period; (AS)

A. Muhammadu Maccido, councillor for natural resources, Sokoto Native Authority: to visit agricultural centers in the United States and Puerto Rico; \$4,265; (AS)

University College, Ibadan:

To establish an Institute of African Studies, under the direction of Dr. Kenneth O. Dike, principal; Nigerian £141,350 (about \$400,000) for a five-year period; (G)

To initiate a faculty exchange program with other medical schools in Africa, under the direction of Professor Alexander Brown, Faculty of Medicine; £10,000 (about \$28,500) through June, 1966; (MNS)

Equipment for the Department of Chemical Pathology, Faculty of Medicine; \$10,000; (MNS)

Teaching and research equipment for the Department of Anatomy, Faculty of Medicine; \$10,000; (MNS)

To help meet the expenses of a psychiatric conference concerned with mental health problems in Africa; \$10,000; (MNS)

Research on food crop production in the Faculty of Agriculture; \$6,500 for a three-year period; (AS)

Dr. Ralph George Hendrickse, senior lecturer in pediatrics, Faculty of Medicine; to observe current methods in pediatric practice at medical centers in the United States, Puerto Rico, and Jamaica; \$6,400; (MNS)

Dr. Felix Oladejo Dosekun, senior lecturer in physiology, Faculty of Medicine; to study curricula and methods of teaching and research at medical schools in South America, Jamaica, the United States, and Canada; \$3,130; (MNS)

Dr. Joseph Chike Edozien, head, Department of Chemical Pathology, Faculty of Medicine; to study curricula and methods of teaching and research at medical schools in South America, Jamaica, the United States, and Canada; \$3,130; (MNS)

Dr. Jack Hirst, senior lecturer, Department of Chemistry; to conduct chemical research under Professor J. Bunnett at Brown University, Providence, Rhode Island; \$2,525; (MNS)



### RHODESIA AND NYASALAND

Nathan Shamuyarira, chief editor, African Newspapers, Ltd., Salisbury: to attend the 1961 meeting of the International Press Institute in Tel Aviv, Israel, and to study the press in selected African cities; \$1,900; (H)

Chibero College of Agriculture: books and visual aid equipment; \$7,500; (AS)

Henderson Research Station, Mazoe: research on farming systems in selected areas of Africa; \$10,000 for a two-year period; (SS-AS)

University College of Rhodesia and Nyasaland, Salisbury:

Continued study of the biology of ticks in the Department of Zoology; \$10,000; (MNS)

Preparation of materials for teaching and research in government and administration, under the direction of Professor F. M. G. Willson, Department of Government; \$10,000 through December, 1962; (SS)

Professor A. G. Davis, Faculty of Science; to visit centers of agricultural extension and alfalfa research in the United States, Mexico, Colombia, and Canada; \$8,550; (AS)

Development of literary criticism of contemporary African writing; £3,000 (about \$8,550) for a three-year period; (H)



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Studies of arthropod physiology in the United States and Brazil, by Dr. E. B. Edney, professor of zoology; \$7,800; (MNS)

Studies of the origin and distribution of flowering plants in the United States and Canada, by Dr. A. S. Boughey, professor of botany; \$5,300; (MNS)

To invite two professors from the University of Birmingham, England, to attend a conference of deans of African medical schools in Ibadan, Nigeria; \$1,600; (MNS)

## SENEGAL

Simon Kiba, editor, *Afrique Nouvelle*, Dakar: to attend the 1961 meeting of the International Press Institute in Tel Aviv, Israel, and to study the press in selected African cities; \$2,900; (H)

Purchase of a collection of basic books in international relations for the Ministry of Foreign Affairs, Dakar; \$4,500 for a two-year period; (SS)

## SIERRA LEONE

Purchase of a collection of basic books in international relations for the Ministry of External Affairs, Freetown; \$4,500 for a two-year period; (SS)

University College of Sierra Leone, Freetown: library development; £1,750 (about \$5,000); (H)

## SOUTH AFRICA

Dr. Bruce Merton McIntosh, senior research officer, Arbor Virus Research Unit, South African Institute for Medical Research, Johannesburg: to visit centers of research on arthropod-borne viruses in Brazil, Trinidad, the United States, England, and Uganda, and to attend the Tenth Pacific Science Congress in Hawaii; \$4,740; (MNS)

## SUDAN

University of Khartoum:

Development of teaching and research in the Faculty of Medicine and the Department of Geology; \$71,000 through December, 1962; (MNS)

Development of teaching and research in the Faculties of Agriculture, Science, and Veterinary Science; \$70,000 through January, 1964; (AS)

*The library of the University College of Rhodesia and Nyasaland.*

Development of research on primates in the Department of Anatomy; \$10,000; (MNS)

Equipment and supplies for virus serological work in the Department of Bacteriology and Parasitology, Faculty of Medicine; \$7,000; (MNS)

Dr. K. A. Agabawi, manager, Faculty Farm, Faculty of Agriculture; to study patterns of crop production in the United States; \$4,240; (AS)

Dr. Mohamed A. Nour, dean, Faculty of Agriculture; to study modern developments in plant virus research techniques in the United Kingdom and the United States; \$3,945; (AS)

Abdel Rahman el-Nasri Hamza, deputy librarian; to visit libraries, library schools, and publishing houses in the United States and Europe; \$3,800; (H)

## TANGANYIKA

Dr. Phyllis Lutz, senior scientific officer, East African Institute for Medical Research, Mwanza: to study biochemical methods and techniques at laboratories while in the United States; \$1,100; (MNS)

Purchase of a collection of basic books in international relations for the Ministry of Foreign Affairs, Dar es Salaam; \$4,500 for a two-year period; (SS)

Robert M. Makange, editor, *Mwafrica*, Dar es Salaam: to attend the 1961 meeting of the International Press Institute in Tel Aviv, Israel, and to study the press in selected African cities; \$2,700; (H)

University College, Dar es Salaam: a visit to the New York office of The Rockefeller Foundation, by R. C. Pratt, principal; \$1,900; (G)

Western Regional Research Centre, Ukiriguru: equipment for research in plant science; \$10,000; (AS)

## UGANDA

Makerere University College, Kampala:

Development of a program in African music; £17,930 (about \$51,000) for a five-year period; (G)

Purchase of law and social science books for a general library at the University College, Dar es Salaam, Tanganyika; £10,000 (about \$28,500) through June, 1963; (G)

Faculty of Agriculture; to construct and furnish a guest house for visiting scientists at the College Farm, Kabanyolo; \$10,000; (AS)

Consultations by four representatives of the University of East Africa with principal officers of The Rockefeller Foundation in New York, and a visit by these representatives to the Washington offices of the International Cooperation Administration and the Department of State; \$4,700; (G)

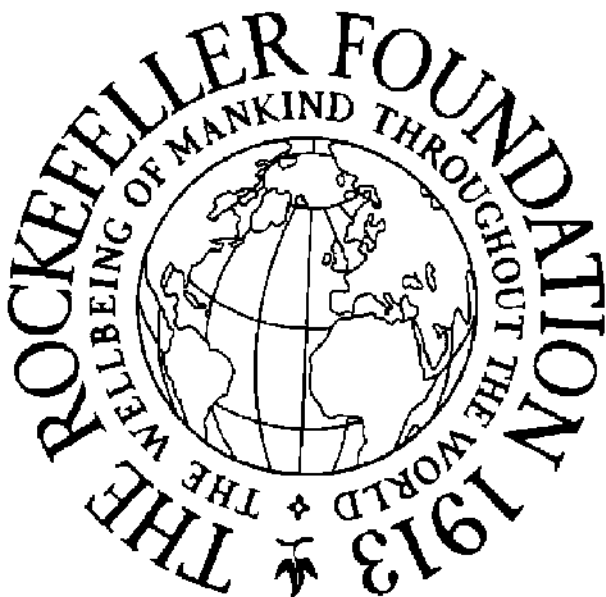
Appointment of Professor James Eayrs, University of Toronto, Canada, to a visiting professorship in international relations for a six-week period; \$3,400; (G)

Professor Kenneth Ingham, head, Department of History; to observe historical teaching and research at universities in West Africa; \$2,975; (H)

#### UPPER VOLTA

Saria Agricultural Station: development of a regional sorghum improvement program; \$10,000 for a two-year period. (AS)

*A. Kazandjian & Sons, Khartoum*



Photograph Excised Here

*The dome library of the University of Khartoum, Sudan.*

## Study Awards, Africa

### ETHIOPIA

BELAY, HAILE SELASSIE b. 1932. M.Sc., Cornell Univ. 1959. Economics and Rural Life (s). Appointed from Imperial Ethiopian Coll. of Agric. and Mechanical Arts, Dire Dawa. Place of study: U.S.A., 1961-. (AS)

MELAK HAIL MENGESHA b. 1935. M.S., Univ. of Nebraska 1959. Plant Science—Genetics and Breeding (s). Appointed from Imperial Ethiopian Coll. of Agric. and Mechanical Arts, Dire Dawa. Place of study: U.S.A., 1961-. (AS)

### GHANA

ADALI-MORTTY, GEORMBEEVI b. 1916. Teacher's Certificate A, Prince of Wales Coll., Achimota, 1935. Business Administration (s). Appointed from Univ. Coll. of Ghana, Legon, Accra. Place of study: U.S.A., 1961-. (SS)

SEY, SAMUEL b. 1924. B.S., Univ. of Hull, England, 1954. Economics and Rural Life (s). Appointed from Kumasi Coll. of Technology. Place of study: U.S.A., 1961-. (AS)

### NIGERIA

ASIKA, UKPABI ANTHONY b. 1936. B.Sc., Univ. Coll., Ibadan, 1961. Political Science (s). Appointed while a student at Univ. Coll. Place of study: U.S.A., 1961-. (SS)

KALU, KALU MBA b. 1935. B.Sc., Univ. Coll. of Ghana, Legon, Accra, 1961. Economic Development (s). Appointed while a student at Univ. Coll. of Ghana. Place of study: U.S.A., 1961-. (SS)

NWOSU, BENJAMIN C. E. b. 1930. M.S., Miami Univ., Ohio, 1961. Physics (F). Appointed while at Miami Univ. on an IIE fellowship. Place of study: U.S.A., 1961-. (MNS)

NZEKWU, ONUORA b. 1928. Teacher's Higher Elementary Certificate, St. Charles' Higher Elementary Teacher Training Coll., Onitsha, 1946. Intercultural Understanding (s). Appointed from *Nigeria Magazine*, Lagos. Place of study: U.S.A., 1961-. (H)

OGUSHEYE, FIDELIS AYODELE b. 1923. B.Sc., Univ. of London, England, 1950. Economics (s). Appointed from Univ. Coll., Ibadan. Place of study: U.S.A., 1961-. (SS)

## SUDAN

OSMAN MOUSA, HUSSEIN ELSAYED b. 1931. M.S., Univ. of London, England, 1958. Animal Science—Genetics and Breeding (s). Appointed from Univ. of Khartoum. Place of study: England, 1961-. (ss)

## UGANDA

CHAGULA, WILBERT KUMALIJA b. 1926. L.M.S., Makerere Univ. Coll., Kampala, 1951. Histochemistry (F). Appointed from Makerere Univ. Coll. Place of study: West Indies, 1961-. (MNS)

NAMBOZE, JOSEPHINE MARY b. 1931. L.M.S., Makerere Univ. Coll., Kampala, 1958. Pediatrics and Child Health (F). Appointed from Makerere Univ. Coll. Places of study: England, U.S.A., 1961-. (MNS)

SOMERS, KRISHNA b. 1926. M.R.C.P., Royal Coll. of Physicians, London, England, 1954. Cardiology—Hemodynamics (F). Appointed from Makerere Univ. Coll., Kampala. Place of study: U.S.A., 1961-. (MNS)

THORNTON, DAVID DILLON b. 1930. M.S., Univ. of London, England, 1955. Agriculture—Forestry (s). Appointed from Animal Health Research Centre, Entebbe. Place of study: U.S.A., 1961-. (AS)

## MIDDLE EAST

Until the dawn of the modern era, many of the world's most highly developed civilizations flourished in the coastal regions where Europe, Asia, and Africa converge. The sense of this rich past is a significant factor in shaping the response of the Middle East to the twentieth century. Turkey, Iran, the Arab nations, Pakistan, and Israel—all have set their course toward modernization along Western lines. But at the same time they are emphasizing the need to preserve or to rediscover the values and achievements of their heritage. Rockefeller Foundation aid to the region in 1961 was intended, in large part, to encourage these trends.

In the harsh Negev desert the Israelis have found the remains of ancient civilizations whose farmers employed an outstanding technical skill in the conservation of water. The evidence they have unearthed strongly suggests that agriculture can be re-established in the desert, which covers about 60 per cent of the country, by using the water that falls directly on the region and its hinterland. Aid to this project of the Hebrew University of Jerusalem was continued this year with a grant of \$108,000, available through June, 1965.

Ingenious use of another natural resource, the heat of the sun, is also being attempted in the desert areas of Israel. Researchers at the National Physical Laboratory of Israel, Jerusalem, are exploring the possibilities of various surfaces for collecting and storing solar energy. One of these devices is an abandoned salt evaporation pan near Sodom, which is being used as a solar energy pond.

The use of solar ponds offers one hope for the conversion of thermal solar energy into other forms of power on

a substantial scale. The contribution these experiments will make to man's fundamental knowledge of solar energy, however, may far exceed in importance their practical results. A 1961 Foundation grant of \$80,000 continues support of this research for another three years.

Thousands of miles to the east of Israel, the creation of Pakistan as an Islamic republic has lent especial urgency to the need for re-examination of its Moslem traditions. To interpret Islam as a religion and a way of life in the context of the modern age, and to show its contributions to the history of ideas, a Central Institute of Islamic Research was founded in Karachi in 1960. A 1961 Rockefeller Foundation grant of \$62,000 is helping to launch the activities of the institute.

A number of other grants, some of them current, for studies of Islamic art, history, and literature have been made in past years to both individuals and institutions throughout the Middle East.

The Rockefeller Foundation has likewise given strong encouragement to a program of interpretive studies of the modern Arab Middle East at the American University of Beirut, Lebanon. The program includes individual research and yearly conferences at which Arab scholars from the entire region come together to exchange ideas and learn of one another's work. For the continuation of these activities, the Foundation has made a two-year grant of \$45,000.

The Arab Studies Program is only one of the many at the American University of Beirut that have been given substantial assistance. As a private institution, the university is in a key position to set standards for education and research throughout the Middle East.

In 1957, for instance, the Foundation appropriated \$5 million to the School of Arts and Sciences for faculty salaries and student scholarships. Long a meeting ground for Middle Eastern and Western cultures, the school had been struggling against the spiraling cost of living in the



postwar period. The grant is helping it through the next eight years to compete with institutions of comparable stature in the provision of faculty salaries, and to attract with scholarship aid the best students of the region.

The medical school of the American University of Beirut has received support from the Foundation totaling over \$3.5 million since 1924. The most recent appropriation, a 1960 grant of \$230,000, is assisting the school to develop facilities as a center for training academic personnel for the medical schools of the Middle East.

Another key medical unit for the region is the Pediatric Clinic at the University of Ankara, Turkey. When Foundation officers first visited its director, Dr. Ihsan Dogramaci, in 1955, his clinic consisted of a half-finished building and a dream—of creating a new pattern in medical education and training in Turkey that would permit the development of modern clinical, teaching, and research services of the highest international standards. Within two years after it was opened, the clinic, comprising the Research Institute of Child Health and the Hacettepe Children's Hospital, had developed a service providing top-quality medical care and a program for teaching that were unparalleled, certainly in the Middle East, and possibly over a far wider area. A high proportion of the students come from Iraq, Syria, Iran, and Afghanistan.

Since 1956, the Pediatric Clinic has received well over \$300,000 for its development, and during 1960-1961 a Rockefeller Foundation medical staff member was stationed there.

One of the most essential prerequisites for the development of the Middle East, and for that matter, any emerging area of the world, is a knowledge of its economic and cultural geography. In 1956 the Foundation encouraged the University of Durham, England, which already had a strong

*Assembling an experimental solar power unit at the National Physical Laboratory of Israeli, Jerusalem.*

program of Middle Eastern studies, to expand its interests along these lines.

While providing training for young researchers, many of them graduates of Middle Eastern universities, senior members of the Durham program have undertaken cooperative surveys and studies with the governments of Libya, Jordan, and Turkey. One professor, with two associates, has carried out extensive investigations of environmental and social conditions in Libya that the Libyan Department of Agriculture and the United Nations Development Agency have formally requested be continued. In Jordan, one researcher conducted a social study of Amman City, and was



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asked, as a result, to stay on to assist in the first major social survey ever made by the Jordanian government. Similarly in Turkey, a project carried on in cooperation with the Turkish government and the Food and Agriculture Organization of the United Nations on problems of soil conservation has led to a more extensive survey of a coastal agricultural area where serious problems of this kind have been created by increases in cereal growing. A 1961 grant of about \$28,500 is enabling these studies to be continued, and new ones to be initiated in Iran and Lebanon, during the next three years.

The principal food crop for the people of the Middle East for many centuries has been wheat. It is as important in the diet of the region as rice in the Far East and corn in Central and South America. In spite of its pre-eminence, however, only Egypt, Pakistan, and Turkey had active government projects in wheat production in 1952, when the FAO initiated a project on wheat and barley improvement for the Middle East. By 1960 substantial progress had been made in developing facilities, but a lack of trained scientists made it impossible to begin large-scale research on breeding improved varieties. The FAO therefore requested of the Foundation that young agricultural scientists from its program be given training in the Foundation's own Latin American operating programs, where work on wheat is in progress.

In addition to providing a training experience for Middle Eastern scientists, five annually for a five-year period, the program should lead to a further exchange of materials and ideas in international research programs designed to improve wheat production throughout the world. Cooperative programs of the United States Department of Agriculture have already revealed that wheat selections from Mexico, Colombia, and Chile appear to be well adapted to a number of areas in the Middle East. There is every reason to expect that desirable characteristics, such as disease re-

sistance and drought tolerance, can be incorporated into Latin American grain from types indigenous to the Middle East.

Still other Middle Easterners are receiving training in the United States through a Foundation-supported program at Brown University for the improvement of English language teaching in the United Arab Republic.

For some years English has been taught in the schools, colleges, and universities of the United Arab Republic as the principal second language of the country. Both the Ministry of Higher Education and the Ministry of Public Education require that at least one foreign language be studied; 95 per cent of the students choose English.

In 1954-1955 Dr. W. Freeman Twaddell, professor of German and linguistics at Brown University, spent a year as a Fulbright Professor in Egypt. During the time Professor Twaddell spent with ministry officials, they became convinced that the linguistic analysis of Egyptian Arabic would enable teachers to help students find the sounds of English that are similar to those used in speaking Arabic. With the cooperation of the ministries, Cornell University and the Universities of Texas and Michigan subsequently instituted training programs leading to the Ph.D. in linguistics for nine Egyptians who would plan and direct a program to instruct Egyptian teachers of English in the use of the new linguistic materials in the public schools. The programs were supported by The Rockefeller Foundation. Six of the scholars have now returned home, and the final three are expected to complete their work in the summer of 1962.

Brown University has now organized a supplementary program, under Professor Twaddell's direction, through which 20 Egyptians will be trained to supervise the new teacher-training program. Working with the nine who have the Ph.D. degree, these linguists will help develop curricula, textbooks, and teaching procedures, and supervise the re-

trained or newly graduated teachers. To prepare for this work they will complete a two-year program at Brown leading to a degree of Master of Applied Linguistics: English.

The new program at Brown University has received a five-year grant of \$368,000.

## Grants Made in the Middle East

*MNS: Medical and Natural Sciences; AS: Agricultural Sciences; SS: Social Sciences; H: Humanities; G: General; F: Fellow; S: Scholar*

### IRAN

University of Shiraz: teaching equipment for the basic science departments of the Faculty of Medicine; \$10,000; (MNS)

### ISRAEL

Hebrew University of Jerusalem:

Research on ancient agricultural systems in the Negev, under the direction of Professor Michael Evenari, Department of Botany; \$108,000 through June, 1965; (AS)

Library acquisitions relating to Asian studies; \$10,000 for a two-year period; (H)

Dr. Y. Henis, instructor in agricultural microbiology, Department of Bacteriology, Faculty of Agriculture, Rehovot; to visit research and teaching centers concerned with applied and basic studies in soil and agricultural microbiology in Europe, Canada, and the United States; \$4,900; (AS)

Y. Atsmon, wheat breeder, Research Department, Mivhor Farm, Sde Gat: to conduct wheat breeding research at The Rockefeller Foundation Colombian Agricultural Program; \$3,235; (AS)

National Physical Laboratory of Israel, Jerusalem: research in solar energy, under the direction of Dr. H. Tabor; \$80,000 for a three-year period; (AS)

### LEBANON

American University of Beirut:

Development of its Arab Studies Program; \$45,000 for a two-year period; (H)

Histochemical research, under the direction of Dr. Amal K. Kurban, assistant professor of medicine, Faculty of Medical Sciences; \$4,000; (MNS)

Mohammed Yousef Najm, associate professor of Arabic literature; to study at the School of Letters, Indiana University, Bloomington, and to visit centers of Middle Eastern studies in the United States; \$3,880; (H)

## PAKISTAN

Central Institute of Islamic Research, Karachi: development of its research program; \$62,000 for a 30-month period; (H)

## TURKEY

Ministry of Health and Social Assistance, Ankara: teaching and research equipment for the School of Public Health; \$10,000; (MNS)

University of Ankara:

Expenses of a regional symposium on the teaching of pediatrics, held at the Research Institute of Child Health, under the direction of Professor Ihsan Dogramaci; \$4,000; (MNS)

Research, at King's College, London, England, on the conflict rules of common law, by Dr. Gündüz Okcün, Faculty of Political Sciences; \$3,250. (SS)

## Study Awards, Middle East

### IRAN

HAGHIGHI, PARVIZ b. 1936. M.D., Univ. of Shiraz 1961. Pathology (F). Appointed from Univ. of Shiraz. Place of study: U.S.A., 1961-. (MNS)

### ISRAEL

NEUMANN, JOSEPH b. 1930. Ph.D., Hebrew Univ. of Jerusalem 1961. Plant Science—Physiology (F). Appointed from Hebrew Univ. of Jerusalem. Place of study: U.S.A., 1961-. (AS)

### LEBANON

CROW, RALPH E. JR. b. 1924. M.A., Univ. of Michigan 1949. Political Science (F). Appointed from American Univ. of Beirut. Place of study: U.S.A., 1961-. (SS)

## PAKISTAN

AHMAD, EQBAL b. 1930. M.A., Forman Christian Coll., Lahore, 1953. Politics and Near Eastern Studies (s). Appointed while a student at Princeton Univ. on a Charlotte Elizabeth Proctor Fellowship. Place of study: France, 1961-. (ss)

AZIZ, MUHAMMAD ABDUL b. 1924. Ph.D., Univ. of Leiden, Netherlands, 1955. International Relations (F). Appointed from Univ. of Dacca. Place of study: U.S.A., 1961-. (ss)

ISLAM, MUZHARUL b. 1923. B.Sc., B.E., Univ. of Calcutta, India, 1942, 1946. B.Arch., Univ. of Oregon 1952. Visual Arts (F). Appointed from Dept. of Works, Housing, and Settlement, Govt. of East Pakistan. Place of study: U.S.A., 1961-. (H)

KARIM, ABUL KHAIR NAZMUL b. 1922. M.A., Columbia Univ. 1953. Sociology (s). Appointed from Univ. of Dacca. Place of study: England, 1961-. (ss)

NOORUZZAMAN, ABUL HASSAN MUHAMMAD b. 1928. M.A., Univ. of Dacca 1950. Political Science and Sociology (s). Appointed from Univ. of Dacca. Place of study: England, 1961-. (ss)

## TURKEY

DAVER, BULENT b. 1928. Ph.D., Univ. of Ankara 1955. Political Science (F). Appointed from Univ. of Ankara. Place of study: U.S.A., 1961-. (ss)

TUNCAY, METE b. 1936. Ph.D., Univ. of Ankara 1961. Political Theory (F). Appointed from Univ. of Ankara. Place of study: England, 1961-. (ss)

ULMAN, A. HALUK b. 1931. Ph.D., Univ. of Ankara 1961. Middle Eastern Studies (F). Appointed from Univ. of Ankara. Place of study: U.S.A., 1961-. (ss)

## UNITED ARAB REPUBLIC

ALY, NAHED ABD-EL-AZIZE MOHAMED b. 1933. B.S., Alexandria Univ. 1959. Nursing Education (F). Appointed from Alexandria Univ. Place of study: U.S.A., 1961-. (MNS)

KAMEL, LAYLA IBRAHIM b. 1935. B.Sc., Alexandria Univ. 1959. Nursing Education (F). Appointed from Alexandria Univ. Place of study: U.S.A., 1961-. (MNS)

YOUSSEF, ENAAM YOUSSEF MOHAMED ABOU b. 1940. B.N., Alexandria Univ. 1960. Nursing Education and Administration of Nursing Services (F). Appointed from Alexandria Univ. Place of study: U.S.A., 1961-. (MNS)



# INDIA

The Rockefeller Foundation's activities in India date back to 1916, when public health workers of the International Health Commission collaborated in surveys of the incidence of hookworm in that country. The Foundation has maintained one or more resident representatives in India continuously since 1920, and during 1961 14 staff members were assigned there, 8 of them engaged in agricultural research and teaching, 4 conducting field and laboratory investigations of arthropod-borne viruses, and 2 serving as consultants at one of India's leading medical colleges. Complementing this direct participation by Foundation representatives are grants for the further development of Indian universities and research institutions, and numerous fellowships to enable young Indian scientists and scholars to acquire advanced training abroad.

Like the Foundation's operating programs in agriculture in Latin America, the Indian Agricultural Program, established in 1956, is a cooperative venture with the host government. Its work on the improvement of maize and sorghum is patterned to a considerable extent on the experience gained in the three older programs, with necessary adaptations to Indian conditions. From the first, however, the program has also been given special responsibilities in the field of agricultural education. In particular it has cooperated in the development of the Post Graduate School at the Indian Agricultural Research Institute, New Delhi.

This school, which was inaugurated in 1958, represents an important step for India in several respects. Not only is it helping to reduce the need for students in the agricultural

sciences to be sent abroad for training, it is also providing a significant number of the country's future agriculturists with training in the home environment on the same problems with which they will later work.

About 400 students study at the school each year, of whom 45 per cent are working for the Ph.D. degree and the balance for the M.Sc. degree. Admission is strictly on the basis of merit, as shown by the candidate's previous record and the qualifications he demonstrates in a personal interview. About one in seven students works as a junior member of the institute's staff to gain professional experience and defray expenses. At the first commencement, held this year, 16 Ph.D. and 112 M.Sc. degrees were awarded.

The pattern of education in the institute is quite different from that in many Indian universities. In particular there is considerably more class and laboratory instruction, greater flexibility in the syllabus to permit adjustment to individual needs, and greater depth and breadth of training in the supporting scientific disciplines.

In addition to cooperating in the establishment of the Post Graduate School through its resident staff in India, The Rockefeller Foundation has provided visiting professors (four in 1961) in various disciplines, and has made grants for building, equipment and supplies, and for travel and advanced study by faculty members. This year the Foundation continued its support with a two-year grant of \$45,000 for completion of a new wing of the institute's library.

The experience with the Post Graduate School has led the government of India to stress the establishment of new undergraduate agricultural universities as part of the Third Five Year Plan. The first of these to open, Uttar Pradesh Agricultural University, Rudrapur, is collaborating with the University of Illinois; three more are authorized for early opening and will collaborate with other United States land-grant colleges. In 1961 the Foundation contributed \$240,000, available over five years, toward the construction and development of the 500-acre experiment station at Rudrapur.

India has long recognized the need for research on problems of agricultural production, for the training of specialists in the agricultural sciences, and for the extension of new information and materials to farmers. For the most part, however, the facilities and the personnel for performing these functions have been developed in separate institutions. In the new agricultural universities, as in the land-grant colleges in the United States, these three aspects of agricultural improvement will be closely related. The experiment station at Uttar Pradesh Agricultural University, for example, will be used for the practical training of students, for research studies by faculty members and outside specialists, and as a center of information and experience for extension workers. Ultimately the activities will include investigations in animal husbandry, veterinary medicine, agricultural engineering, home science, and the biological, physical, and social sciences.

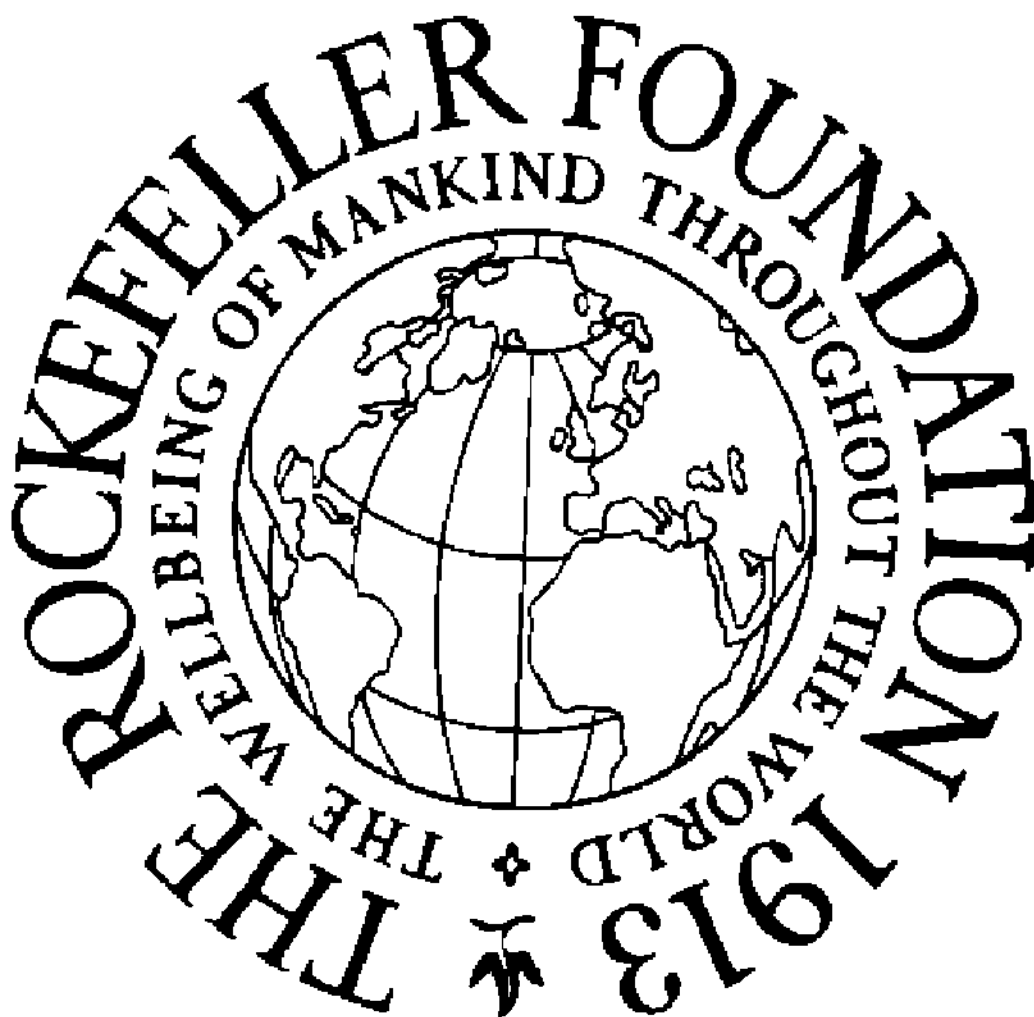
For the maize and sorghum improvement schemes the federal and state governments maintain a system of 10 main experiment stations and 16 substations representing most of India's important agricultural regions, coordinated from the main laboratories and headquarters at the Indian Agricultural Research Institute in New Delhi. Although it has been in operation only four years, the maize program has already released for multiplication four new double-cross hybrids created from Indian lines and high-yielding disease-resistant lines developed in the Foundation's corn breeding work in Mexico and Colombia. Within five years there will be sufficient seed of these new hybrids to plant one-third of the national acreage devoted to maize.

The work on sorghum began with the collection and testing of varieties found in India, and the creation of a sorghum germ plasm bank which has since been expanded by

*Weighing hybrid maize seed produced by a progressive farmer in India.*

the addition of seed of representative varieties from other countries. Housed at the institute in New Delhi, the germ plasm bank is being intensively analyzed for yield and other characteristics needed for selecting and breeding better varieties suited to Indian conditions. A program for the improvement of the millets, close relatives of sorghum, is following the same plan of collection and analysis to identify lines having the qualities required for the creation of improved varieties and hybrids.

During 1961 the Foundation aided work on a third Indian food crop with a three-year grant of \$65,000 to the Central Potato Research Institute for the expansion of its



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investigative work. The institute was established in 1949 as a unit in the Ministry of Food and Agriculture to coordinate long-range research on potatoes.

While not as extensively grown as maize, sorghum, or millet, potatoes have been cultivated in certain regions of India for more than 300 years. Through its main station at Simla, substations at Patna and Kufri, and five regional stations throughout India, the institute conducts a comprehensive program on varietal improvement, cultural practices, soil fertility, plant protection, seed production and distribution, and problems of commercial storage.

The investigation of arthropod-borne viruses in which Foundation staff members collaborate has headquarters at the Virus Research Centre in Poona, a laboratory administered by the Indian Council of Medical Research. Two staff



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members are attached to the Poona laboratory, while the other two are assigned respectively to a substation at Sagar in the jungle area of Mysore State and to a collaborating laboratory at Christian Medical College, Vellore.

Currently entering its second decade of operation, the Virus Research Centre is directed by an outstanding Indian investigator and administrator, Dr. T. Ramachandra Rao. It is the over-all function of the center to define the distribution of arthropod-borne virus diseases in the various regions of India, to collect and identify new viruses, to study their natural history—emphasizing those agents which are important for public health—and to advise the government on appropriate control measures. The center processes materials gathered in the field and trains young Indian scientists in the exacting techniques required for general virus work. The completion of a three-story wing in 1961 gave the laboratory expanded and improved working space.

In the early years the work of the center was focused on a survey of the incidence of diseases caused by the arthropod-borne viruses as disclosed by immunizing antibodies in blood samples collected from residents of the states in the southern part of India. The results revealed the presence of six different viruses within a radius of 500 miles of Poona, several of which proved similar to others previously isolated in Africa and in Southeast Asia.

In recent years the efforts of the laboratory staff have been concentrated on Kyasanur Forest disease virus, a tick-borne agent of the Russian spring-summer complex heretofore known only in the north temperate zone. The discovery of a tick-borne virus in tropical India began with a report in 1957 that monkeys were dying at a rapid rate in forested areas of Mysore State. Investigation soon revealed that many cases of a febrile illness, sometimes resulting in death, were occurring in human beings as well. Intensive studies

*An investigator on the staff of the Virus Research Centre collects ticks from a pack horse.*

showed that the disease was limited to a relatively small area in the Kyasanur Forest, that the cause of the disease in man and monkeys was identical, and that the vectors concerned were ticks whose usual hosts were jungle monkeys.

To control the epidemic, the population in the immediate vicinity of the infected area was inoculated with a killed-virus vaccine made from a strain of Russian spring-summer encephalitis virus. Treatment requires three inoculations followed by annual booster shots, making control on a mass basis questionable; a search is now being made for an attenuated strain which can be used as a live-virus vaccine.

The Virus Research Centre has set up a systematic monitoring system to gain more precise knowledge of the ebb and flow of the virus activity, and through intensive and painstaking work is trying to answer some of the basic questions about the epidemiology of Kyasanur Forest disease.

Of the two Foundation staff members currently stationed at the All-India Institute of Medical Sciences, New Delhi, one is devoting much of his time to advising the administration on problems of structure and the teaching program, and the other is assisting in the development of a semi-rural health center that will serve as a teaching and research unit of the institute.

Through the years The Rockefeller Foundation has made a series of long-term grants for the development of medical education in India. Its contributions toward establishment of the All-India Institute of Hygiene and Public Health, in Calcutta, for example, total nearly \$675,000. In more recent years, besides assisting the All-India Institute of Medical Sciences, the Foundation has aided the growth of such institutions as King George's Medical College in Lucknow, Seth Gordhandas Sunderdas Medical College in Bombay, and Christian Medical College in Vellore. In 1961 the Foundation made grants to two research laboratories that work in the field of the life sciences.

*The All-India Institute of Medical Sciences.*

The National Chemical Laboratory in Poona, which specializes in organic chemistry, is the oldest in a chain of national laboratories founded in India since World War II under the Council of Scientific and Industrial Research. In recent years the instrumentation required for work in structural organic chemistry has increased enormously. With the Foundation's grant of \$80,000, which will be used principally for the purchase of equipment requiring foreign exchange, the laboratory will be able to expand its studies on the chemistry of natural products of indigenous plants during the next two years.

Since their establishment about 35 years ago, the Nutrition Research Laboratories have been the principal Indian center for studies in this field. Located for many years at Coonoor in southern India, the laboratories were recently moved to Hyderabad, where association with Osmania University, local teaching hospitals, and public health field centers affords increased opportunities for training in nutrition and for laboratory, clinical, and field research. A two-year grant of \$35,000 will help to provide scientific equipment and supplies unavailable in India; the grant was made to the Indian Council of Medical Research, with headquarters in New Delhi, which administers the nutrition laboratories.

The idea of establishing in New Delhi, capital of India and one of the great crossroads of international communication, an institution which would provide facilities for cul-



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tural exchange among leaders of thought in India and from abroad developed out of a talk between Dr. S. Radhakrishnan, vice-president of India, and Mr. John D. Rockefeller, 3rd, in 1958.

Less than four years later, in January, 1962, the idea became a reality with the official dedication of the India International Centre, a place where, in the words of its first president, Dr. C. D. Deshmukh, "various currents of intellectual, political, social, and economic thought would meet freely in the minds and hearts of men, and the sharpness of intellectual encounter would be softened by the graciousness of good fellowship."

Like the successful International House of Japan in Tokyo, the center will sponsor lectures, discussions, and symposia on significant problems, support important educational and scholarly programs, and conduct a publications program. The emphasis will not be on a study of any single culture nor on the promotion of any particular ideology. Rather, discussions will be directed toward the exposition of cultural patterns existing in different parts of the world.

The 38 universities of India will play a leading role in the activities of the center by providing an appropriate base for the cultural exchange being planned. Most of the universities are institutional members of the center.

Of contemporary design in precast concrete and native quartzite, the center's buildings include 52 guest rooms, a library, an auditorium and an exhibition hall. Its glass exterior walls afford a view of the adjacent Lodi gardens, where stand the tombs of emperors who ruled India in the fifteenth and sixteenth centuries.

An appropriation in 1959 of approximately \$834,000 for the planning, construction, and some of the operating costs of the center was the largest grant ever made by the Foundation to an Indian institution. In 1961 this was supplemented by a two-year grant of \$157,500 for capital costs.

Another project to which the Foundation contributed in 1961 is designed to give India a firmer base for the develop-

ment of her educational and cultural institutions through the expansion and improvement of the postgraduate library training curriculum at the University of Delhi.

While libraries have increased rapidly in number in India in recent years, the development of a professional group of trained librarians has lagged, mainly because of a shortage of high-quality training facilities. The new libraries and the increased activities in older ones cannot be adequately staffed if most of the training has to be provided by foreign institutions, as has been largely the case in the past.

The University of Delhi introduced postgraduate library training in 1947. In the academic year beginning in 1961, some 58 students began the one-year course and 11 continued into a second year to complete the requirements for the master's degree. The university is strengthening the program to prepare librarians to supervise and staff general, research, and special libraries without further training abroad.

The Foundation's five-year grant of about \$190,000 will allow six members of the Delhi faculty to take a year's intensive training in the United States, and will enable the university to engage five librarians from the United States for periods of three months to a year to aid the establishment of the courses necessary under the new plan.

To give the new curriculum an India-wide impact, the university is offering 15 scholarships for the one-year diploma course and 5 research scholarships for work toward the doctoral degree. The university is in a strategic position to set standards for library training and service throughout India.

## Grants Made in India

*MNS: Medical and Natural Sciences; AS: Agricultural Sciences;  
SS: Social Sciences; H: Humanities; G: General; F: Fellow; S: Scholar*

Wasim Ahmad Siddiqui, Department of Zoology, Aligarh Muslim University, and currently a graduate student in the Department of Zoology, University of California, Berkeley: to visit laboratories concerned with research in protozoology in the United States and Europe while en route from the United States to India; \$1,300; (MNS)

Dr. Debi P. Burma, senior research fellow, Bose Research Institute, Calcutta, and presently research associate, Department of Biochemistry, College of Medicine, New York University: to observe current research on nucleic acids and viruses at medical centers in the United States; \$1,200; (MNS)

Dr. N. R. Dutt, medical officer, Calcutta Medical College: expenses in connection with his return to India after study in the United States; \$1,220; (MNS)

Central Potato Research Institute, Ministry of Food and Agriculture, Simla: laboratory and field research equipment for the main stations and experimental centers of the institute; \$65,000 for a three-year period; (AS)

Christian Medical College, Ludhiana: equipment for a cardiopulmonary research program in the Department of Surgery; \$10,000; (MNS)

Council of Scientific and Industrial Research, New Delhi: research in organic chemistry at the National Chemical Laboratory, Poona, under the direction of Dr. K. Venkataraman; \$80,000 for a two-year period; (MNS)

India International Centre, New Delhi:

To help meet construction expenses of the new center; \$157,500 through June, 1963; (G)

Dr. C. D. Deshmukh, president; to review international exchange programs, principally in the United States; \$5,150; (G)

Indian Agricultural Research Institute, New Delhi: equipment for the library; \$45,000 through October, 1964; (AS)

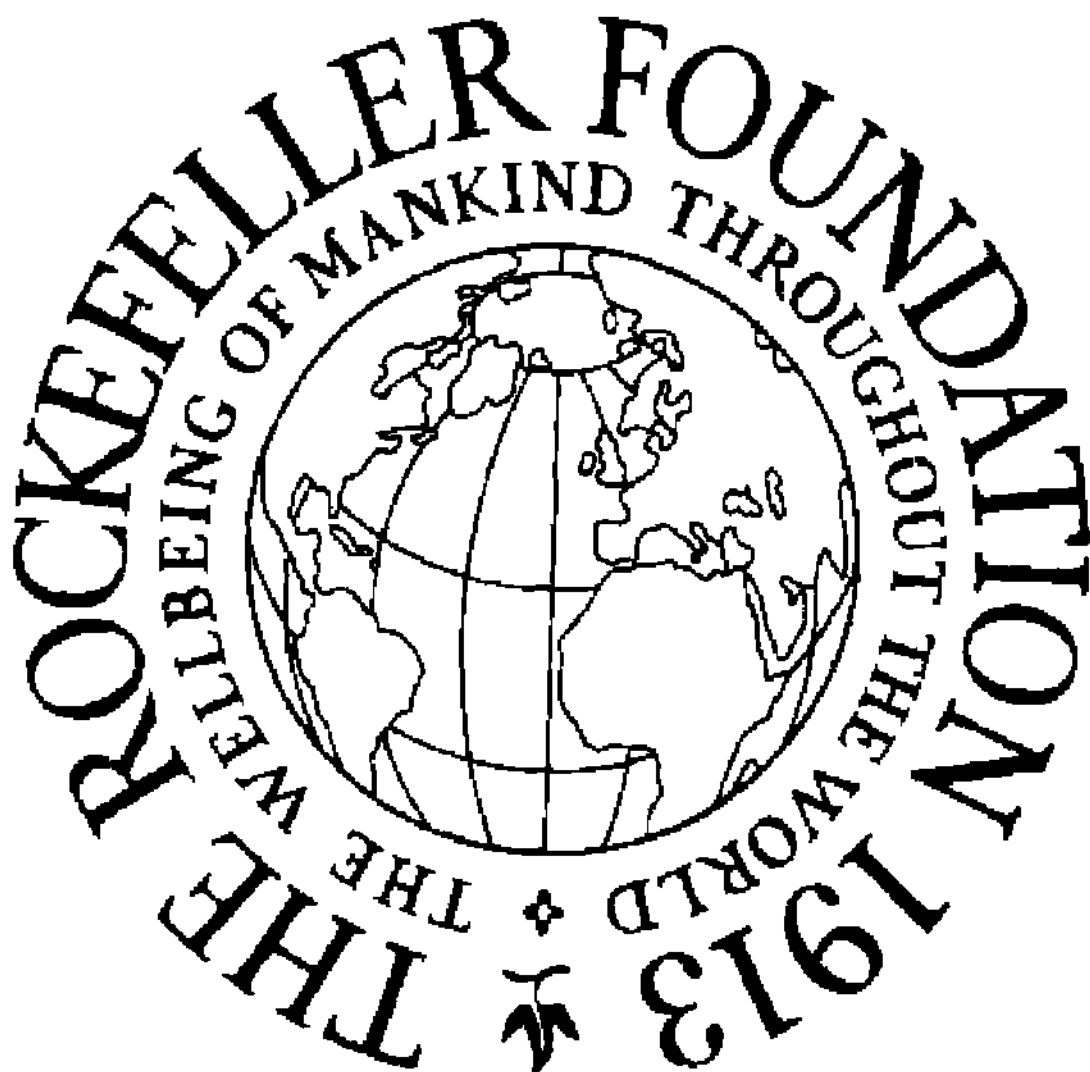
Indian Council of Medical Research, New Delhi: development of protein research at the Nutrition Research Laboratories, Hyderabad; \$35,000 for a two-year period; (MNS)

Indian Statistical Institute, Calcutta: to help meet the foreign exchange

needs of its research and training programs; \$10,000 for a period of not less than two nor more than three years; (ss)

Dr. Amala Chaudhuri, professor of social pediatrics, Institute of Child Health, Calcutta: to study methods of tissue culture of human chromosomes at the University Clinic, Basel, Switzerland; \$1,500; (MNS)

Institute of Economic Growth, Delhi: a study of farm supply dynamics in India-Pakistan, by Dr. Raj Krishna, former lecturer at the Delhi School of Economics; \$6,500; (ss)



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*The rural health center of the All-India Institute of Medical Sciences, Kurali.*

Dr. Basanta Kumar Aikat, director, Department of Pathology and Bacteriology, Institute of Post Graduate Medical Education and Research, Calcutta: to observe current research in pathology and laboratory techniques at medical centers in the United States; \$2,125; (MNS)

Miss Rachel Joseph, matron, Jamsetjee Jeejeebhoy Group of Hospitals, Bombay: to observe recent developments in hospital nursing administration and education at nursing centers in Great Britain, the United States, Puerto Rico, and the Far East; \$5,650; (MNS)

V. L. Devkar, assistant director, Salar Jung National Museum and Library, Hyderabad: to observe museum management and organization, principally in the United States; \$5,600; (H)

Sri Avinashilingam Home Science College, Coimbatore: textbooks and other library materials in the field of home science; \$5,000; (AS)

University of Delhi:

Development of an advanced library training program, to be conducted in cooperation with the American Library Association, Chicago, Illinois; 58,250 rupees and \$177,475 (about \$190,000) for a five-year period; (H)

Dr. B. M. Johri, Department of Botany; to visit laboratories in the United States; \$4,300; (AS)

Professor N. K. Sidhanta, vice-chancellor; supplement to an earlier grant in aid for additional expenses of visits to universities in the United States and Great Britain; \$2,825; (H)

University of Lucknow: equipment for a cardiovascular laboratory in the Department of Medicine, King George's Medical College; \$9,000; (MNS)

Uttar Pradesh Agricultural University, Rudrapur:

Development of an Agricultural Experiment Station on lands of the university; \$240,000 for a five-year period; (AS)

Kenneth Anthony Patrick Stevenson, vice-chancellor; to study administrative patterns and procedures for research, education, and extension at various universities and land-grant colleges in the Middle East, Europe, the United States, and the Far East; \$7,600. (AS)

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## AGRICULTURAL OPERATING PROGRAM

Indian Agricultural Program; \$260,000.

## VIRUS RESEARCH PROGRAM

For virus research in India; \$90,165.

## Study Awards, India

- AARON, CAROLINE AMY VASANTHARANI b. 1931. B.Sc.(N), Univ. of Madras, 1952. Nursing Education (F). Appointed from Christian Med. Coll. and Hospital, Vellore. Place of study: U.S.A., 1961-. (MNS)
- AHUJA, MAN MOHAN SINGH b. 1929. M.R.C.P., Royal Coll. of Physicians, London, England, 1956. Endocrinology and Metabolism (F). Appointed from All-India Inst. of Med. Sciences, New Delhi. Place of study: U.S.A., 1961-. (MNS)
- AIYAR, SADASHIV PRABHAKAR b. 1927. Ph.D., Univ. of Bombay 1955. Public Administration (F). Appointed from Univ. of Bombay. Place of study: U.S.A., 1961-. (SS)
- BASAK, MEGH NATH b. 1913. M.S., Univ. of Dacca, Pakistan, 1936. Soil Science (F). Appointed from Dept. of Agric., Govt. of West Bengal, Calcutta. Place of study: U.S.A., 1961-. (AS)
- BHARDWAJ, BHUP DEV b. 1931. M.Sc., Indian Agric. Research Inst., New Delhi, 1960. Plant Science—Genetics and Breeding (F). Appointed from Vegetable Improvement Scheme, Govt. of Himachal Pradesh, Simla. Place of study: U.S.A., 1961-. (AS)
- BHATT, PRAVIN NANABHAI b. 1923. M.M.S., Tulane Univ. of Louisiana 1954. Microbiology (F). Appointed from Virus Research Centre, Poona. Place of study: U.S.A., 1961-. (MNS)
- CHOPRA, KULDIP RAJ b. 1933. M.Sc., Univ. of Allahabad 1956. Plant Science—Genetics and Breeding (S). Appointed from Min. of Food and Agric., New Delhi. Place of study: U.S.A., 1961-. (AS)
- GAUR, RAM AUTAR b. 1928. M.Sc., Agra Univ. 1952. Economics and Rural Life (S). Appointed from Coll. of Agric., Gwalior. Place of study: U.S.A., 1961-. (AS)
- GUPTA, DALIP SINGH b. 1924. B.S., Univ. of Delhi 1950. Entomology (S). Appointed from Min. of Food and Agric., New Delhi. Place of study: U.S.A., 1961-. (AS)
- GUPTA, SISIR K. b. 1929. B.A., Univ. of Calcutta 1946. International Relations (S). Appointed from Indian Council of World Affairs, Delhi. Place of study: U.S.A., 1961-. (SS)
- KAUL, RAVINDRA NATH b. 1935. B.S., Allahabad Agric. Inst. 1954. Engineering (S). Appointed from Banaras Hindu Univ., Varanasi. Place of study: U.S.A., 1961-. (AS)

- MOHAPATRA, LAKSHMI NARAYAN b. 1925. M.D., Patna Univ. 1956. Microbiology (F). Appointed from All-India Inst. of Med. Sciences, New Delhi. Place of study: U.S.A., 1961-. (MNS)
- MUKHERJEE, DEBABRATA b. 1929. B.Agr., Univ. of Dacca, Pakistan, 1949. Plant Breeding and Genetics (s). Appointed from Dept. of Agric., Govt. of West Bengal, Calcutta. Place of study: U.S.A., 1961-. (AS)
- NARAIN, DHIRENDRA b. 1931. Ph.D., Univ. of Bombay 1957. Sociology (s). Appointed from Univ. of Bombay. Place of study: U.S.A., 1961-. (SS)
- PATIL, SIDDANGOU DA VENKANGOU DA b. 1922. M.Agr.Sc., Univ. of Queensland, Brisbane, Australia, 1954. Plant Science—Agronomy (s). Appointed from Karnatak Univ., Dharwar. Place of study: U.S.A., 1961-. (AS)
- RAO, VADLAMUDI YUGANDHARA b. 1930. M.A., Univ. of Nagpur 1954. Agricultural Economics (s). Appointed from Indian Council of Agric. Research, New Delhi. Place of study: U.S.A., 1961-. (SS)
- SAINI, SARUP SINGH b. 1924. M.Sc., Government Agric. Coll., Ludhiana, Punjab, 1948. Plant Science—Genetics and Breeding (s). Appointed from Dept. of Agric., Govt. of Himachal Pradesh, Simla. Place of study: U.S.A., 1961-. (AS)
- SANKARAN, BALU b. 1926. M.B., B.S., Univ. of Madras 1948. Orthopedics (F). Appointed from All-India Inst. of Med. Sciences, New Delhi. Place of study: U.S.A., 1961-. (MNS)
- SIHARE, LAXMI PRASAD b. 1933. M.A., Univ. of Baroda 1960. Visual Arts (s). Appointed while a student at New York Univ. Place of study: U.S.A., 1961-. (H)
- SINGH, GAJADHAR b. 1924. Ph.D., Agra Univ. 1956. Soil Science (F). Appointed from S.K.N. Government Coll. of Agric., Jobner. Place of study: U.S.A., 1961-. (AS)
- SINGH, SARINDER MAN b. 1928. F.R.C.S., Royal Coll. of Surgeons, London, England, 1954. Urological Surgery (F). Appointed from All-India Inst. of Med. Sciences, New Delhi. Places of study: U.S.A., England, 1961-. (MNS)
- SOLANKI, SADHU S. S. b. 1931. M.Sc., Agra Univ. 1953. Plant Science—Agronomy (s). Appointed from Coll. of Agric., Gwalior. Place of study: U.S.A., 1961-. (AS)
- SRIVASTAVA, BRAJENDRA PRASAD b. 1931. Ph.D., Univ. of Allahabad 1956.

Entomology (F). Appointed from S.K.N. Government Coll. of Agric., Jobner. Place of study: U.S.A., 1961-. (AS)

SWAMINATHAN, MADRAS CHOKALINGAM b. 1927. M.B., B.S., Stanley Med. Coll., Madras, 1951. Epidemiology and Nutrition (F). Appointed from Nutrition Research Laboratories, Hyderabad. Place of study: U.S.A., 1961-. (MNS)

UPADHYAYA, SRIDHAR b. 1924. M.B., B.S., Osmania Med. Coll., Hyderabad, 1947. Virology (F). Appointed from Virus Diagnostic Laboratory, Shimoga District. Place of study: U.S.A., 1961-. (MNS)

WIG, NARENDRA NATH b. 1930. M.D., Univ. of Lucknow 1957. Psychiatry (F). Appointed from Univ. of Lucknow. Place of study: England, 1961-. (MNS)



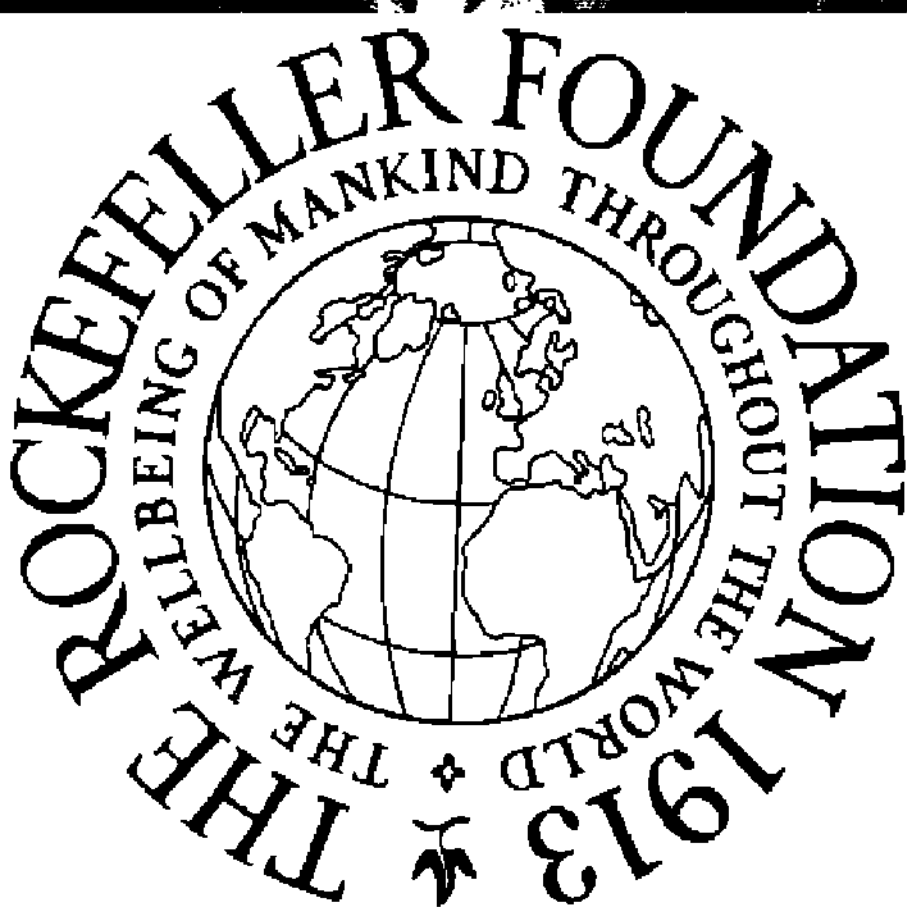
## FAR EAST

Beginning with its early work in medicine and public health, and later extending into the fields of the natural and the social sciences, the humanities, and agriculture, the Foundation has a long history of interest in the Far East. Today the Foundation's largest single effort in that region is the International Rice Research Institute at Los Baños, the Republic of the Philippines.

The staple of the Asian diet, rice is the principal daily food for more of the world's peoples than any other food crop. The International Rice Research Institute, established in 1959 in cooperation with the Ford Foundation and the government of the Philippines, is intended to be the world's most complete center for training and research on rice, its production, distribution, and utilization. With the Ford Foundation providing approximately \$7 million for construction and development costs, The Rockefeller Foundation is furnishing funds for operating expenses, expected to run \$500,000 annually, and providing staff for the direction of the center. The institute is the Foundation's first international operating program to be undertaken in cooperation with another foundation.

As with the Latin American operating programs, training and research will be carried on as mutually complementary activities. Most of the staff have been drawn from the rice-producing countries of South and Southeast Asia.

The institute's laboratories are centered in a single-story, air-conditioned building with separate areas for studies in plant breeding, genetics and taxonomy, chemistry and biochemistry, agronomy, soil chemistry and soil physics,



## Photograph Excised Here

*The administration building of the International Rice Research Institute, Los Baños.*

plant physiology, plant pathology and entomology, and agricultural economics and statistics. To gather in one place all of the world's literature on rice and to disseminate the findings of the institute as widely as possible, an administration building houses a library and documentation center, a publications office, a photography section, and a 200-seat auditorium where international conferences on rice will be held.

The center includes facilities for experimenting with growing rice under a wide range of controls. In the rice paddies an irrigation-drainage system allows engineers to flood or drain the fields at will; in the laboratories plant growth chambers enable scientists to vary the length of daylight and the temperature of air and ground. A service building, in addition to sheltering machinery, provides room

for the variety of operations—from equipment repair to threshing—that must be performed indoors on the many rainy days to be expected in the tropics.

The institute is intended to be a complete living community for the scientists who staff it, their families, the graduate students who come there to take advanced training, and the scientists who come to conduct research projects. The center's residential areas contain houses for 25 staff members and dormitory accommodations for 60 graduate students, and provide recreational facilities including a swimming pool and tennis courts; nearby is a remodeled, newly equipped elementary school that children of staff will attend.

By the end of 1961, a number of its staff were in residence and the International Rice Research Institute looked forward to launching its activities after formal dedication early in 1962. The Rockefeller Foundation appropriated \$405,000 for operating expenses of the institute in 1961.

Most of the Foundation's activities in medicine and the natural sciences in the Far East are focused on the development of the basic sciences, but the character of such efforts varies considerably from area to area. In Australia and Japan, for example, the Foundation's grants are based upon much the same criteria as are applicable in Western Europe



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and the United States. As in Europe, science in these countries is attracting increasing support from other sources, both local and overseas, so that the Foundation's program may be expected to become increasingly selective.

The Foundation's major appropriations in Australia in 1961 went to the University of Melbourne, one of the country's oldest and most distinguished institutions of higher learning, where outstanding research and training in zoology and biochemistry have been in progress for some time. Projects in insect genetics and in endocrine biochemistry at the university are among those assisted with a three-year grant of £A22,250 (about \$50,285) to the Department of Zoology and one of \$24,000 to the Russell Grimwade School of Biochemistry, available on a matching basis.

Among institutions of similar calibre aided in Japan, the National Institute of Genetics in Misima is one of the most broadly representative institutions of its kind in the world, and for many years has received support from the Japanese government. A 1961 Foundation grant of \$55,000 is helping to add an excellent group of human geneticists to the present staff, which has received earlier aid for its work on plants and lower animals; the new grant is for three years.

A second, the Institute for Protein Research in Osaka, actually functions as an integral part of Osaka University, and provides facilities for biochemists from several other departments who wish to work with the elaborate and expensive equipment necessary for modern investigations of protein structure. Although the institute has attracted strong financial backing in Japan, it nevertheless encounters considerable difficulty in obtaining equipment and supplies requiring foreign exchange. The Foundation's new grant of \$30,000, available over a three-year period, will be used for purchases that must be made abroad.

In addition to creating the environment in which advanced scientific research flourishes, Japan's new postwar

*Experimental plots at Los Baños.*

prosperity has encouraged its people to add to the traditional rice-centered diet an increasing amount of meat, eggs, and dairy products. The Foundation is attempting to spur this trend in several different ways.

A current grant, made in 1960, is assisting the training of the home economists who are vitally needed to educate the people on the value of a balanced diet. It has provided equipment and books for a new graduate school in home economics, the second in all of Japan, at Japan Women's University in Tokyo.

Since 1957 the Foundation has provided research grants and fellowships for study in the United States to members of the Faculty of Agriculture at Tohoku University, Sendai, who are studying ways in which Japan might better use her upland soils for the production of fruits, vegetables, and feed grains for dairy animals and livestock. A 1961 grant of \$61,000 will assist this work over the next three years.

Work on the improvement of rice in Japan, however, is going on apace. Among the many fundamental research projects in agricultural biochemistry supported through a three-year grant of \$56,000 to Nagoya National University are a number of studies involving this crop. Included are experiments that may lead to the development of an improved insecticide against the rice stem borer, comparative investigations of proteins from different varieties of rice grown under differing cultural or fertilization practices, and work on growth-promoting as well as inhibitory substances affecting the rice plant.

Instrumental to the advance of university and specialized training as a whole is the improvement of library facilities in Japan. Two grants made this year are typical of continuing Foundation efforts to strengthen Japanese libraries. One, of \$47,000, will bring to Keio University in successive years librarians specialized in each of several life science fields to work with resident library faculty and medical library staff in setting up a special program of training for librarians in the biological sciences. Keio University's

Japan Library School is an outstanding one for basic library training. A second appropriation, of \$36,000, will assist the University of Tokyo in the task of compiling a union catalogue of its holdings.

Groundwork was laid by the Foundation for both programs over the past ten years or more through a series of smaller grants to enable the library staffs of both institutions to undertake training in the United States, or at least to visit library centers there. Others were made for a survey of the library systems, or for the services of American consultants.

In the Philippines and on Taiwan, graduate training programs in library science are being assisted through two Foundation grants to the American Library Association. A



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*A herd of Japanese cattle being grazed on a natural pasture, used as control in a project on the improvement of forages for upland soils, at Kawatabi Farm, Tohoku University.*



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*At Nagoya National University, the chemistry of submerged paddy soils is being investigated.*

four-year appropriation of \$56,795 will aid the work at the University of the Philippines, and a grant of \$38,850 will be used to assist that of the National Taiwan University. The funds will also help to provide visiting professors of library science for both universities.

The Foundation is currently supporting two other programs at the University of the Philippines under grants made in 1960. One is the training of the home economists who are in great demand in extension work, as teachers in the high schools and colleges, as food technologists in industry, and as research workers. With new equipment provided under

the grant, the university's department of home economics will also participate in joint research projects with the International Rice Research Institute.

A second is the research and training program of the university's Institute of Public Administration. The institute bears chief responsibility for the training of an efficient cadre of civil servants who are increasingly needed as the Philippines continues to expand its public services.

A project for the improvement of methods of teaching English as a second language in the Philippines has been receiving Foundation assistance since 1957, when \$684,400 was appropriated to the University of California at Los Angeles for the planning of such an effort. The cornerstone of this program became the Philippine Center for Language Study, Manila, which was founded as a private, binational body working closely with the Department of Education in the development of new linguistic materials and the instruction of teachers in the use of these materials in the schools. Now that four years have passed, the center is more than half way toward its goal of revised language instruction in all six elementary grades of the public schools, and the Foundation has appropriated an additional \$430,500 over the next four years to see the program to completion.

The U.C.L.A. project has attracted strong outside support from its inception, particularly from the United States government, and has proved a model for this type of technical assistance in other areas. In it the role of Americans has been limited to the provision of particular skills, and it has stressed from the outset the development of Philippine leadership.

The Rockefeller Foundation is also strongly interested in drama, music, and literature in Asia, for these fields exert wide appeal and reveal exceptional talent. By helping Asians travel, observe, and study in foreign countries, the Foundation hopes to further cultural exchange between West and East. Grants of this kind, for instance, have brought to the



United States a leading critic and spokesman of the arts in Indonesia, who observed performances and met critics; a leader of exciting new developments in Sinhalese drama in Ceylon, who viewed work and methods of production at drama centers; and a Korean music professor, who collaborated with an American composer on a book in English on Korean music.

Foundation officers hope that such individual efforts will some day bear fruit in broader programs, just as earlier assistance to Korean drama, to take one example, prepared the way for a 1961 grant of \$17,000 to the American-Korean Foundation, Inc., New York, to enable the Korean Research Institute for Dramatic Arts, Inc., Seoul, to complete its new theatre and begin a regular program of productions.

Since 1953 several grants have been made to the Academia Sinica, Taipei, Taiwan, the national research organization of Nationalist China, in support of its research on ancient Chinese art and archaeology, classical philology and linguistics, anthropology, and history. A 1961 appropriation of \$30,000 will continue this aid for two more years. The institute staff includes most of the leading scholars on Taiwan who are working on Chinese history prior to the modern period.

Under appropriations made in 1959 and 1960, the Foundation is also currently aiding the work of institutions, located in the United States, Japan, and Europe, where centers have been established for the study of Tibet. In the years since 1951, and reaching a peak with the seizure of control by the Chinese Communist government in 1959, a

*Construction of the Theatre  
School Building, Korean Research  
Institute for Dramatic Arts.*



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mass flight has brought over 35,000 Tibetans to India, Nepal, and Sikkim. Among them are many political and religious leaders and others who can make invaluable contributions to Western understanding of their remote and little known country.

In some cases representatives of the centers have traveled to South Asia to interview Tibetans there, and in others Tibetans have been invited to take part in the work of the centers. A conference during the summer of 1962 under Foundation auspices will bring members of the centers together to review progress and plan future studies.

## Grants Made in the Far East

*MNS: Medical and Natural Sciences; AS: Agricultural Sciences; SS: Social Sciences; H: Humanities; G: General; F: Fellow; S: Scholar*

### AUSTRALIA

Australian National University, Canberra:

Research equipment and supplies for use in the Department of Physiology, under the direction of Sir John C. Eccles, professor of physiology; \$5,000; (MNS)

Completion of a study of elite groups in Australia, by Solomon Encel, senior lecturer in political science, School of General Studies; £A1,200 (about \$2,720); (SS)

Miss Patricia Violet Slater, scholar, Centaur War Nurses Memorial Trust, Victoria, and currently a graduate student at the School of Nursing, University of Washington, Seattle: to visit schools of nursing and professional nursing organizations in Canada and the United States while in North America; \$1,650; (MNS)

Commonwealth Scientific and Industrial Research Organization:

#### *Adelaide:*

Dr. W. W. Emerson, senior research officer, Division of Soils; to accept a one-year appointment as soil physicist, Soil and Water Conservation Research Division, Agricultural Research Service, United States Department of Agriculture, St. Paul, Minnesota; \$2,800; (AS)

*Canberra:*

David John David, senior research officer, Division of Plant Industry; to study current techniques in X-ray fluorescence, arc, spark, and flame emission, and in atomic absorption spectroscopy at agricultural research laboratories in the United States; \$1,925; (AS)

*St. Lucia:*

Dr. J. Griffiths Davies, chief, Division of Tropical Pastures; to attend the Tenth Pacific Science Congress in Hawaii; \$1,000; (AS)

Miss Nancy Winifred Long, dean, Northern District School of Nursing, Bendigo; to observe nursing education and services at schools of nursing in the United States and Canada; \$888; (MNS)

Dr. Robert Angus Barbour, senior lecturer in anatomy, Department of Anatomy and Histology, University of Adelaide; to observe teaching and research in anatomy, with emphasis on electron microscopy, at medical institutions in the United States while en route from England to Australia; \$860; (MNS)

## University of Melbourne:

To assist in the development of research and training in the Department of Zoology; £A22,250 (about \$50,285) for a three-year period; (MNS)

Equipment for the Russell Grimwade School of Biochemistry; \$24,000 payable as the university secures matching funds from other sources; (MNS)

Dr. Peter L. T. Ilbery, senior lecturer, Faculty of Medicine, University of New South Wales, Kensington; to study in the Department of Radiology, Middlesex Hospital, London, England; £A1,405.10.0 (about \$3,150); (MNS)

Dr. Gustav Joseph Victor Nossal, research fellow, Walter and Eliza Hall Institute of Medical Research, Melbourne, and currently assistant professor of genetics, School of Medicine, Stanford University, Palo Alto, California; to visit centers of research in immunology and genetics in the United States, Europe, and Israel while en route from the United States to Australia; \$4,590; (MNS)

## CEYLON

Dr. Henry E. Fernando, head, Division of Entomology, Department of Agriculture, Peradeniya; to visit centers of entomological research in the United Kingdom, the United States, and Japan; \$5,675; (AS)

P. Welikala, Cultural Affairs Department, Government of Ceylon, Colombo: to study dramatic arts in the United States; \$2,350; (H)

Gunasena Galappatty, Official Language Department, Government of Ceylon, Colombo: to visit drama centers in the United States and Japan while en route from the United States to Ceylon; \$900; (H)

University of Ceylon, Colombo:

Dr. Shelton Aloysius Cabraal, lecturer in neurosurgery, Faculty of Medicine; to study recent developments in medical education, and to observe neurosurgical techniques at medical centers in the United States and Canada; \$2,750; (MNS)

Dr. Moderage Joseph Waas, professor of anatomy, Faculty of Medicine; to study recent developments in medical education at medical centers in the United States and Canada; \$2,750; (MNS)

Dr. Richard Stanley Selvaratnah Watson, lecturer in physiology, Faculty of Medicine; to observe new techniques in neurophysiology at medical centers in Japan and India; \$2,550; (MNS)

## INDONESIA

Teuku Ibrahim Alfian, instructor in history, Gadjah Mada University, Jogjakarta: to collect research materials at the British Museum, London, England, while en route from the United States to Indonesia; \$525; (H)

S. D. Humardani, Indonesian critic and choreographer: to observe performances of the dance, and to meet critics in the United States; \$1,495; (H)

University of Indonesia:

*Bogor:*

Dr. Jannes Humuntal Hutasoit, senior lecturer and head, Department of Animal Nutrition, Faculty of Veterinary Science and Animal Husbandry; to visit animal husbandry and nutrition centers in Western Europe, the United States, and Japan; \$6,400; (AS)

Dr. Gerardus Sutardi Mangundojo, head, Department of Entomology, Faculty of Agriculture; to study recent developments in entomology and nematology research at institutions in Japan, the United States, Canada, Western Europe, and South Asia; \$6,135; (AS)

*Djakarta:*

Dr. Koen Han Gan, professor and head, Department of Microbiology, Faculty of Medicine; to observe virus research and laboratory techniques at medical centers in India and the Far East; \$2,380; (MNS)

**JAPAN**

Cancer Institute, Tokyo: equipment and supplies for research in cytochemistry and cytogenetics, under the direction of Dr. Hiroto Naora, assistant; \$10,000; (MNS)

Chiba University: research equipment and supplies for use in the Department of Biochemistry, School of Medicine, under the direction of Dr. Yoshiaki Miura, professor of biochemistry; \$10,000; (MNS)

Hokkaido University, Sapporo:

Development of teaching in pathology, under the direction of Dr. Katsuo Takeda, professor of pathology and dean, School of Medicine; \$9,800; (MNS)

Dr. Eimatsu Takakuwa, professor and director, Department of Hygiene, School of Medicine; to observe recent developments in medical education and in the teaching of public health at medical centers in the United States while en route from Europe to Japan; \$800; (MNS)

International House of Japan, Inc., Tokyo: preparation of a guide to reference books, by the staff of the International House Library; 2,501,400 yen (about \$7,500) for a two-year period; (H)

Juntendo University, Tokyo:

Equipment and supplies for research in the Department of Physiology, under the direction of Dr. Akira Takeuchi, assistant professor of physiology; \$10,000; (MNS)

Genetical and anthropological research on selected Japanese families, under the direction of Professor Kozi Tsubaki; \$10,000; (MNS)

Kagoshima University: equipment and supplies for research in the Department of Physiology, Faculty of Medicine, under the direction of Dr. Yutaka Oomura, professor of physiology; \$10,000; (MNS)

Keio University, Tokyo:

Research and training in the Department of Biochemistry, School of Medicine; \$75,000 for a five-year period; (MNS)

Development of a training program for librarians in technical fields at the Japan Library School; \$47,000 for a three-year period; (MNS-AS)

Equipment and supplies for research in neurochemistry in the Department of Physiology, School of Medicine, under the direction of Dr. Genkichi Takagaki, instructor in physiology; \$9,000; (MNS)

Dr. Takumi Tsuchiya, head, Division of Cytogenetics of Cereals, Kihara Institute for Biological Research, Yokohama: to observe recent develop-

ments in cytogenetics, plant breeding, and radiation genetics at research centers in the United States and Canada; \$3,750; (AS)

Kiyosato Educational Experiment Project, Inc., Tokyo: expenses of the second national veterinary conference at Kiyosato; \$1,500; (AS)

Kumamoto University: equipment and supplies for research in the Department of Physiology, Medical School, under the direction of Dr. Masayasu Sato, professor of physiology; \$10,000; (MNS)

Kyoto Prefectural University of Medicine:

Equipment for research in electron microscopy; \$10,000; (MNS)

Equipment and supplies for research in the Department of Neurology and Psychiatry, under the direction of Dr. Seiichi Mizuno; \$10,000; (MNS)

Research on enzyme chemistry, under the direction of Professor Yoshitsugu Nose, Department of Biochemistry; \$7,000; (MNS)

Dr. Fumio Nakamura, professor of otolaryngology; to visit centers of otolaryngology and physiology while in the United States; \$700; (MNS)



Photograph Excised Here

*The ceremony commemorating the decennial  
of the Japan Library School, Keio University.*

## Kyoto University:

Research in natural products in the Department of Organic Chemistry, Faculty of Pharmacy, under the direction of Dr. Tatsuhiko Nakano; \$10,000; (MNS)

Equipment and supplies for research in the Department of Anesthesiology, Faculty of Medicine, under the direction of Professor Akira Inamoto; \$6,000; (MNS)

Equipment for research on tissue culture in the Department of Anatomy, under the direction of Dr. Michio Okamoto, professor of anatomy, and Dr. Kazuo Ogawa, instructor in anatomy; \$5,000; (MNS)

Equipment and supplies for research in the Faculty of Medicine, under the direction of Dr. Haruto Uchino, lecturer; \$5,000; (MNS)

Research on the characteristics of the modernization of Japan; 1,629,000 yen (about \$4,880); (H)

Dr. Yoshimasa Nishikawa, Faculty of Agriculture; to observe methods of artificial insemination and animal reproduction at research centers in the United States and Canada; \$3,700; (AS)

To purchase microfilms of United Nations documents of the period 1946 to 1956 for the university's United Nations Depository Library; \$3,015; (SS)

Dr. Kosuke Yamashita, professor of biology, Yoshida College; to visit research centers in Europe and Asia, and to attend a meeting of the Food and Agriculture Organization of the United Nations in Rome, Italy; \$2,200; (AS)

## Kyushu University, Fukuoka:

Equipment and supplies for research in biochemistry in the Research Institute of Angiocardiology, School of Medicine, under the direction of Dr. Motoomi Nakamura, chief, Laboratory of Nutritional Biochemistry; \$6,500; (MNS)

Dr. Tsutomu Shioya, professor of forest economics and policy; to observe pasture and forest management and land policy at institutions in Western Europe; \$4,800; (AS)

Equipment for the Department of Biochemistry, Faculty of Agriculture; \$2,838; (AS)

Hideya Kobayashi, chief, Construction Section, Ministry of Education, Tokyo; to survey school and university libraries, and to consult with library architects in the United States; \$3,250; (H)

**Nagoya National University:**

Equipment for biochemical research in agriculture in the Department of Agricultural Chemistry; \$56,000 for a three-year period; (AS)

Research on growth in children, under the direction of Dr. Toshi Inoue, professor of hygiene, School of Medicine; \$7,500 for a three-year period; (MNS)

Professor Hidejiro Kotani, professor of international relations, National Defense College, Tokyo: to conduct research in the United States and Europe on the organization, impact, and consequences of the United Nations Emergency Force; \$2,000; (ss)

National Institute of Genetics, Misima: development of research in human genetics; \$55,000 for a three-year period; (MNS)

**Okayama University:**

Equipment and supplies for research on amino acid metabolism in the Department of Biochemistry, under the direction of Professor Shunzi Mizuhara; \$6,000; (MNS)

Dr. Shigeo Takahara, professor of otorhinolaryngology and director, University Hospital, Medical School; to observe current research in human genetics and methods of instruction in otolaryngology at medical centers in Europe and the United States; \$2,000; (MNS)

**Osaka University:**

Equipment for the Institute for Protein Research; \$30,000 for a three-year period; (MNS)

Equipment and supplies for research in the Department of Genetics, under the direction of Professor Hideo Kikkawa; \$10,000; (MNS)

Equipment and supplies for research in the Department of Physiology, Dental School, under the direction of Dr. Yojiro Kawamura, professor of physiology; \$9,500; (MNS)

Econometric analysis of leading industries in the Japanese economy, by the Institute of Social and Economic Research; \$8,200 for a two-year period; (ss)

Dr. Hisao Uetake, professor of microbiology, Sapporo Medical College, Sapporo City: to observe medical education and current research in microbiology at medical centers in the United States, Canada, Europe, the Middle East, and the Far East; \$1,700; (MNS)

Miss Aya Esther Maeda Koriyama, vice-director, St. Luke's Junior College of Nursing, Tokyo: to observe nursing education programs in the



United States and Canada, and to participate in a special course for nurses at Teachers College, Columbia University, New York; \$4,146; (MNS)

To invite scholars to attend a conference on Tibet at the Villa Serbelloni, Bellagio, Italy, in July, 1962, and for one of the participants, Hajime Kitamura, Toyo Bunko, Tokyo, to visit centers of Tibetan research en route to and from the conference; \$7,200; (H)

**Tohoku University, Sendai:**

Research on the effective use of upland soils in Japan by the Faculty of Agriculture; \$61,000 for a three-year period; (AS)

Equipment and supplies for research in virology, under the direction of Dr. Nakao Ishida, professor of bacteriology, and Dr. Yorio Hinuma, assistant professor, Department of Bacteriology, School of Medicine; \$10,000; (MNS)

Research in neurophysiology, under the direction of Dr. Toshihiko Oikawa, assistant professor of physiology, School of Medicine; \$10,000; (MNS)

Dr. Kanoe Sato, associate professor of crop science, Faculty of Agriculture; to visit animal nutrition and forage crop improvement centers in the United States and Colombia; \$3,000; (AS)

Dr. Tsuneyuki Tsuda, associate professor of crop science, Faculty of Agriculture; to visit animal nutrition and forage crop improvement centers in the United States and Colombia; \$3,000; (AS)

Professor Takuma Yasui, Department of Economics; to make further visits to university departments of economics in the United States in connection with research in economic theory; \$1,000; (SS)

Professor Fumio Masutani, Tokyo University of Foreign Studies: to study Christian cultural traditions, and to visit Western institutions and scholars in the United States, Canada, and Europe; \$5,525; (H)

Toyo Bunko, Tokyo: research on Tibet, by Tibetan refugees; \$8,000 through November, 1964; (H)

**University of Tokyo:**

Development of the university library; \$36,000; (H-AS)

Professor Mitsuo Yokoyama, professor of landscape architecture, Faculty of Agriculture; to visit landscape architecture centers and botanical gardens in the United States and Europe; \$4,200; (AS)

Shigeo Minowa, managing director, Tokyo University Press; to study university press operations and to consult with directors of university presses in the United States; \$4,050; (H)

Professor Yoichi Maeda, College of General Education; to visit educational institutions in the United States while en route from Paris to Japan; \$720; (H)

Waseda University, Tokyo: research in the United States on the organization and functions of political parties, by Professor Shigeru Katsumura; \$5,000; (SS)

Yokohama City University: equipment and supplies for research in virology, under the direction of Professor Kamesaburo Yoshino, chairman, Department of Bacteriology, School of Medicine; \$10,000; (MNS)

## KOREA

Dong Kook University, Seoul: books in comparative literature; \$2,500; (H)

Dr. Lee Hye-ku, professor of music, Seoul National University: to collaborate with Lou Harrison, music composer, in the United States, on an English language book on Korean music; \$3,350; (H)

## NATIONAL REPUBLIC OF CHINA

Academia Sinica, Taipei: research in the Institute of History and Philology; \$30,000 for a two-year period; (H)

## NEW ZEALAND

C. M. Driver, leader, Potato Section, Crop Research Division, Department of Scientific and Industrial Research, Christchurch: to visit centers of potato research in the United States, Canada, Mexico, and Europe; \$1,300; (AS)

Dr. Leo Solomon Antonoff Lewis, physician and senior lecturer in medicine, Faculty of Medicine, University of Otago, Dunedin: to observe recent advances in gastroenterology at medical centers in the United States while en route from England to New Zealand; \$620; (MNS)

## PHILIPPINES

The Reverend Miguel A. Bernad, S.J., professor of literature, Ateneo of Manila: to become familiar with new trends and points of view in literature and other arts at the State University of Iowa, Iowa City, and at universities and publishing houses in England and Spain; \$2,110; (H)

Bureau of Plant Industry, Department of Agriculture and National Resources, Manila: technical books for the Guinobatan Experiment Station; \$1,500; (AS)

Dr. Paulino J. Garcia, chairman, National Science Development Board,

Manila: to visit educational and research institutions in the United States; \$3,170; (G)

Dr. Emiliano Ramirez, president, Philippine Normal College, Manila: to visit centers of English language study in the United States, Europe, and South Asia; \$5,450; (H)

Ramon Magsaysay Award Foundation, Manila: to help develop the Foundation's library on Asia; \$10,000 for a two-year period; (H)

University of the Philippines:

*Manila:*

Continuation of studies, by Gregorio D. Samson, Institute of Hygiene, in the Department of Biochemistry, School of Hygiene and Public Health, Johns Hopkins University, Baltimore, Maryland; \$3,600; (MNS)

Miss Veronica Fernandez Chan, instructor in virology, Department of Medical Microbiology, Institute of Hygiene; to observe research and laboratory techniques at the Virus Research Centre, Poona, India; \$1,500; (MNS)

*Quezon City:*

Books for the library of the College of Home Economics; \$9,000 for a two-year period; (AS)

## THAILAND

Samai Charoenrath, head, Division of Research and Experiment Stations, Department of Agriculture, Bangkok: to study recent developments in agricultural research at experiment stations in Latin America and the United States; \$5,950; (AS)

Anchern Chompoophot, head, Department of Horticulture, Kasetsart University, Bangkok: to study recent developments in horticultural research and education at institutions in Southeast Asia; \$4,000; (AS)

University of Medical Sciences, Bangkok:

Equipment for a new virology laboratory at the School of Public Health; \$20,000 for a two-year period; (MNS)

Research in biochemistry, under the direction of Dr. Stang Mongolsuk, dean, Faculty of Medical Sciences; \$8,000 for a two-year period. (MNS)

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## AGRICULTURAL OPERATING PROGRAM

International Rice Research Institute, Los Baños, the Philippines: general development; \$405,000.

## Study Awards, Far East

### AUSTRALIA

DUNCAN, ROSS b. 1922. M.A., Univ. of Adelaide 1952. Demography (F). Appointed from the Univ. of New England, Armidale. Place of study: England, 1961-. (SS)

### INDONESIA

KAYAM, UMAR b. 1932. B.A., Gadjah Mada Univ., Jogjakarta, 1955. Intercultural Understanding (F). Appointed from Univ. Press of Indonesia, Djakarta. Place of study: U.S.A., 1961-. (H)

NOTOSUSANTO, NUGROHO b. 1931. Master's Degree, Univ. of Indonesia, Djakarta, 1960. History (F). Appointed from Univ. of Indonesia. Place of study: England, 1961-. (H)

SASTROWARDOJO, SUBAGIO b. 1925. Ph.D., Gadjah Mada Univ., Jogjakarta, 1958. Literature (F). Appointed from Gadjah Mada Univ. Place of study: U.S.A., 1961-. (H)

UTOMO, KAMPTO b. 1926. Ag.Eng., Univ. of Indonesia, Djakarta, 1955. Rural Sociology (F). Appointed from Univ. of Indonesia. Place of study: U.S.A., 1961-. (SS)

### JAPAN

ABIKO, CHIE b. 1927. B.S., Kyoritsu Home Econ. Coll., Tokyo, 1948. Home Economics (S). Appointed from Min. of Agric. and Forestry, Tokyo. Place of study: U.S.A., 1961-. (AS)

ANDO, YO b. 1930. B.A., Fukushima Univ. 1953. Economics (F). Appointed from Econ. Planning Agency, Tokyo. Place of study: U.S.A., 1961-. (SS)

ASADA, MICHIKO b. 1926. Japan Red Cross Coll. of Nursing, Tokyo, 1949. Nursing Education (F). Appointed from Univ. of Tokyo. Place of study: U.S.A., 1961-. (MNS)

ASANUMA, HIROSHI b. 1926. M.D., Keio Univ., Tokyo, 1952. Neurophysiology (F). Appointed from Osaka City Univ. Place of study: U.S.A., 1961-. (MNS)

HAMAKAWA, JUNKO b. 1934. Hinoki Modern Dance School, Tokyo, 1956. Dance (F). Appointed from Hamakawa Ballet School, Okinawa. Place of study: U.S.A., 1961-. (H)

- HARA, SADASUMI b. 1929. B.A., Univ. of Tokyo 1953. Economics (F). Appointed from Econ. Planning Agency, Tokyo. Place of study: U.S.A., 1961-. (ss)
- HIWATASHI, KOICHI b. 1921. Sc.D., Tohoku Univ., Sendai, 1956. Genetics (F). Appointed from Tohoku Univ. Place of study: U.S.A., 1961-. (MNS)
- IMORI, TATUO b. 1920. D.V.M., Univ. of Tokyo 1943. Animal Science—Veterinary Science (F). Appointed from Osaka Prefectural Univ. Place of study: U.S.A., 1961-. (AS)
- ISHIDA, TAKESHI b. 1923. Law Degree, Univ. of Tokyo 1949. Political Science (F). Appointed from Univ. of Tokyo. Place of study: U.S.A., 1961-. (ss)
- IYAMA, SHIN-YA b. 1927. D.Agr., Univ. of Tokyo 1959. Plant Science—Genetics and Breeding (F). Appointed from Natl. Inst. of Genetics, Misima. Place of study: U.S.A., 1961-. (AS)
- KANEKO, HIROSHI b. 1930. Law Degree, Univ. of Tokyo 1953. Law of Taxation (F). Appointed from Univ. of Tokyo. Place of study: U.S.A., 1961-. (ss)
- KAWASAKI, TAKASHI b. 1931. M.D., Kyoto Prefectural Univ. of Med. 1960. Biochemistry (F). Appointed from Kyoto Prefectural Univ. of Med. Place of study: U.S.A., 1961-. (MNS)
- KOYANO, HAYAO b. 1929. D.M.S., Niigata Univ. 1955. Neurophysiology (F). Appointed from Niigata Univ. Place of study: U.S.A., 1961-. (MNS)
- MARUYAMA, NAOSHIGE b. 1925. D.M.S., Niigata Univ. 1957. Neurophysiology (F). Appointed from Niigata Univ. Place of study: U.S.A., 1961-. (MNS)
- MIYAKAWA, TADAO b. 1931. M.A., Hitotsubashi Univ., Tokyo, 1955. Economics and Statistics (F). Appointed from Hitotsubashi Univ. Place of study: U.S.A., 1961-. (ss)
- MUSHAKOJI, KINHIDE b. 1929. B.S., Gakushuin Univ., Tokyo, 1953. Comparative Nationalism (F). Appointed from Gakushuin Univ. Place of study: U.S.A., 1961-. (ss)
- NAGATA, YUTAKA b. 1929. D.M.S., Keio Univ., Tokyo, 1960. Neurochemistry (F). Appointed from Toho Univ., Tokyo. Place of study: U.S.A., 1961-. (MNS)
- NAGAZUMI, AKIRA b. 1929. M.A., Univ. of Tokyo 1956. History (F). Appointed from Toyo Bunko, Tokyo. Place of study: U.S.A., 1961-. (H)

- NAKAHAMA, HIROSHI b. 1923. D.M.S., Keio Univ., Tokyo, 1954. Neurophysiology (F). Appointed from Keio Univ. Place of study: U.S.A., 1961-. (MNS)
- NAMIOKA, SHIGEO b. 1929. Ph.D., Hokkaido Univ., Sapporo, 1959. Animal Science—Veterinary Science (F). Appointed from Natl. Inst. of Animal Health, Tokyo. Place of study: U.S.A., 1961-. (AS)
- NISHIMURA, SUSUMU b. 1931. D.Sc., Univ. of Tokyo 1960. Biochemistry (F). Appointed from Japanese Foundation for Cancer Research, Tokyo. Place of study: U.S.A., 1961-. (MNS)
- NISHIZAWA, SATOSHI b. 1925. M.S., Hokkaido Univ., Sapporo, 1959. Marine Resources (F). Appointed from Hokkaido Univ. Place of study: U.S.A., 1961-. (AS)
- NITTA, KAZUO b. 1926. M.D., Univ. of Tokyo 1949. Biology—Cytology (F). Appointed from Natl. Inst. of Health, Tokyo. Place of study: U.S.A., 1961-. (MNS)
- SASAKI, TOSHIO b. 1924. Ph.D., Univ. of Wisconsin 1959. Library Science (S). Appointed from Univ. of Tokyo. Place of study: U.S.A., 1961-. (AS)
- SASANO, NOBUAKI b. 1924. M.D., Tohoku Univ., Sendai, 1948. Pathology (F). Appointed from Tohoku Univ. Place of study: U.S.A., 1961-. (MNS)
- SUGANO, HISANOBU b. 1923. M.D., Kyushu Univ., Fukuoka, 1958. Pharmacology (F). Appointed from Kyushu Univ. Place of study: U.S.A., 1961-. (MNS)
- SUZUKI, MITSUO b. 1928. M.S., Tohoku Univ., Sendai, 1952. Economics (F). Appointed from Tohoku Univ. Place of study: U.S.A., 1961-. (SS)
- TAKATA, KENZO b. 1925. D.Sc., Nagoya Natl. Univ. 1959. Chemical Embryology (F). Appointed from Nagoya Natl. Univ. Place of study: U.S.A., 1961-. (MNS)
- TAKEUCHI, MIKITOSHI b. 1926. B.A., Univ. of Tokyo 1950. Modern Economic History (F). Appointed from Tokyo Metropolitan Univ. Place of study: U.S.A., 1961-. (SS)
- TASHIRO, YUTAKA b. 1926. D.M.S., Kyoto Univ. 1956. Biology—Cytology (F). Appointed from Kyoto Univ. Place of study: U.S.A., 1961-. (MNS)
- TATEMOTO, MASAHIRO b. 1924. M.A., Kyoto Univ. 1950. Economics (F). Appointed from Osaka Univ. Place of study: U.S.A., 1961-. (SS)

TODA, YOSHIO b. 1918. Ph.D., Kokugakuin Univ., Tokyo, 1960. Philosophy (F). Appointed from Kokugakuin Univ. Place of study: U.S.A., 1961-. (H)

UNNO, TSUNEO b. 1931. B.A., Hitotsubashi Univ., Tokyo, 1957. Economics (F). Appointed from Econ. Planning Agency, Tokyo. Place of study: U.S.A., 1961-. (SS)

YAMAMOTO, TOSHIYUKI b. 1925. M.D., Tohoku Univ., Sendai, 1950. Anatomy (F). Appointed from Hirosaki Univ. Place of study: U.S.A., 1961-. (MNS)

YANAGAWA, RYO b. 1924. Ph.D., Hokkaido Univ., Sapporo, 1959. Veterinary Science (S). Appointed from Natl. Inst. of Animal Health, Tokyo. Place of study: U.S.A., 1961-. (AS)

#### KOREA

KIM, JUNG-WHAN b. 1911. Nippon Fine Arts Coll., Tokyo, Japan, 1937. Drama (F). Appointed from Dong Kook Univ., Seoul. Place of study: U.S.A., 1961-. (H)

LEE, JAI CHUL b. 1926. M.A., Yonsei Univ., Seoul, 1959. Library Science (S). Appointed from Yonsei Univ. Place of study: U.S.A., 1961-. (H)

#### NEW ZEALAND

SALMON, EVELYN BEATRICE b. 1921. R.N., New Plymouth Public Hospital 1952. Public Health Nursing and Nursing Education (F). Appointed while at McGill Univ., Montreal, Canada, on a British Commonwealth and Empire Nurses' Memorial Fund Fellowship. Place of study: Canada, 1961-. (MNS)

#### PHILIPPINES

CADIZ, TEODORE G. b. 1920. M.S., Louisiana State Univ. 1956. Plant Science—Horticulture (F). Appointed twice from Univ. of the Philippines, Laguna. Place of study: U.S.A., 1958–1959; 1961-. (AS)

DE PADUA, DANTE B. b. 1931. M.S., Louisiana State Univ. 1958. Engineering—Agricultural Engineering (F). Appointed from Univ. of the Philippines, Laguna. Place of study: U.S.A., 1961-. (AS)

ENDRIGA, BARBARA-ANN GAMBOA b. 1934. B.S., Philippine Women's Univ., Manila, 1953. Plant Science—Agronomy (S). Appointed from Bureau of Soils, Manila. Place of study: U.S.A., 1961-. (AS)

- EUSEBIO, JOSE A. b.** 1933. M.S., Iowa State Univ. of Science and Technology 1959. Animal Science—Animal Husbandry (F). Appointed from Univ. of the Philippines, Laguna. Place of study: U.S.A., 1961-. (AS)
- HUFANA, ALEJANDRINO G. b.** 1926. A.B., Univ. of the Philippines, Diliman, 1952. Literature—Creative Writing (F). Appointed from Univ. of the Philippines. Place of study: U.S.A., 1961-. (H)
- JAMIAS, JUAN FAROLAN b.** 1928. M.S., Univ. of Wisconsin 1958. Economics and Rural Life (F). Appointed from Univ. of the Philippines, Laguna. Place of study: U.S.A., 1961-. (AS)
- MACEDA, JOSE b.** 1917. A.B., Queens Coll., New York, 1952. Music (F). Appointed from Univ. of the Philippines, Quezon City. Place of study: U.S.A., 1961-. (H)
- MADAMBA, CESAR PALTING b.** 1932. M.S., Iowa State Univ. of Science and Technology 1958. Plant Science—Nematology (F). Appointed from Univ. of the Philippines, Laguna. Place of study: U.S.A., 1961-. (AS)
- MANGAHAS, RUBY K. b.** 1916. M.A., Univ. of Michigan 1955. Musicology (F). Appointed from Univ. of the Philippines, Quezon City. Place of study: England, 1961-. (H)
- MUNDO, ANGELITO O. DEL b.** 1935. B.S., Univ. of the Philippines, Quezon City, 1955. Plant Science—Physiology (S). Appointed from Central Luzon Agric. Coll., Nueva Ecija. Place of study: U.S.A., 1961-. (AS)
- POBLADOR, NICETO SISON b.** 1936. A.B., Univ. of the Philippines, Diliman, 1958. Economics (S). Appointed from Univ. of the Philippines. Place of study: U.S.A., 1961-. (SS)
- QUIASON, SERAFIN D. b.** 1930. A.M., Univ. of Pennsylvania 1954. History (F). Appointed while on leave from Univ. of the Philippines, Quezon City. Place of study: U.S.A., 1961-. (H)
- RAMIREZ, DOLORES ALTOVEROS b.** 1931. M.S., Univ. of Minnesota 1958. Plant Science—Genetics and Breeding (S); Plant Science—Genetics and Breeding (F). Appointed twice from Univ. of the Philippines, Laguna. Place of study: U.S.A., 1957-1958; 1961-. (AS)
- TILO, SANTIAGO NANAT b.** 1930. M.S., Univ. of Wisconsin 1958. Plant Science (S); Plant Science (F). Appointed twice from Univ. of the Philippines, Laguna. Place of study: U.S.A., 1956-1958; 1961-. (AS)
- VARIAS, RODOLFO b.** 1929. M.D., Univ. of the Philippines, Manila, 1953. Mental Hygiene (F). Appointed from Univ. of the Philippines. Place of study: U.S.A., 1961-. (MNS)



YABES, JULITA I. b. 1931. B.S.N., Univ. of the Philippines, Manila, 1953. Nursing Education and Research (F). Appointed from Univ. of the Philippines. Place of study: U.S.A., 1961-. (MNS)

ZAMORA, PRESCILLANO M. b. 1933. M.S., Cornell Univ. 1958. Plant Science—Botany (F). Appointed from Univ. of the Philippines, Laguna. Place of study: U.S.A., 1961-. (AS)

### THAILAND

DILOK YENBUTRA b. 1930. M.D., Univ. of Med. Sciences, Bangkok, 1954. Virology (F). Appointed from Univ. of Med. Sciences. Place of study: U.S.A., 1961-. (MNS)

PONGKAO, SAWAI b. 1933. B.S., Univ. of the Philippines, Laguna, 1959. Plant Science—Agronomy (S). Appointed from Kasetsart Univ., Bangkok. Place of study: U.S.A., 1961-. (AS)

SITACHITT, PRASERTSRA DEE-ANANTA b. 1925. M.S., Utah State Univ. 1958. Home Economics (S); Home Economics—Nutrition (S). Appointed twice from Kasetsart Univ., Bangkok. Place of study: U.S.A., 1956–1958; 1961-. (AS)

### VIET NAM

QUYEN, NGO VAN b. 1936. B.S.A., Univ. of the Philippines, Los Baños, 1958. Animal Science—Economic Entomology (S). Appointed from Min. of Agric., Saigon. Place of study: U.S.A., 1961-. (AS)

# REPORT OF THE TREASURER

In the following pages is submitted a report of the financial transactions of The Rockefeller Foundation for the year ended December 31, 1961.

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# LYBRAND, ROSS BROS. & MONTGOMERY

CERTIFIED PUBLIC ACCOUNTANTS

2 BROADWAY, NEW YORK 4, N. Y.

## AUDITORS' REPORT

To the Board of Trustees,  
The Rockefeller Foundation:

We have examined the balance sheet of The Rockefeller Foundation as of December 31, 1961 and the related statements of principal fund, unpaid appropriations and land, buildings and equipment fund for the year then ended. Our examination was made in accordance with generally accepted auditing standards, and accordingly included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances.

In our opinion, the accompanying balance sheet and statements of principal fund, unpaid appropriations and land, buildings and equipment fund present fairly the financial position of The Rockefeller Foundation at December 31, 1961, and the results of its operations for the year then ended, in conformity with generally accepted accounting principles applied on a basis consistent with that of the preceding year.

Lybrand, Ross Bros. & Montgomery

*March 16, 1962.*

## BALANCE SHEET — DECEMBER 31, 1961

*ASSETS*

MARKETABLE SECURITIES, principally at cost or market quotations at date of gift (market quotations December 31, 1961, \$614,603,599.49)	\$181,737,928.73
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## CURRENT ASSETS:

Cash on deposit		1,667,609.28
Advances and deferred charges	\$692,784.69	
Accounts receivable	<u>835,188.47</u>	1,527,973.16

## LAND, BUILDINGS AND EQUIPMENT:

Land and buildings at nominal value	2.00	
Equipment at approximate net depreciated cost	<u>256,475.30</u>	<u>256,477.30</u>
		<u><u>\$185,189,988.47</u></u>

*FUNDS AND OBLIGATIONS*

PRINCIPAL FUND	\$120,664,622.68
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UNPAID APPROPRIATIONS	63,640,514.17
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## CURRENT LIABILITIES:

Accounts payable	628,374.32
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LAND, BUILDINGS AND EQUIPMENT FUND	<u>256,477.30</u>
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	<u><u>\$185,189,988.47</u></u>
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## PRINCIPAL FUND

Balance, December 31, 1960		\$129,323,164.00
Add:		
Quoted market value in excess of ledger amount of securities given in payment of appropriations:		
The Museum of Modern Art	\$1,294,466.56	
American Council of Learned Societies	889,080.09	
The Population Council, Inc.	467,474.45	\$2,651,021.10
Amount by which securities sold, redeemed or exchanged exceeded the ledger value		11,064.77
Gifts received	15,767.34	2,677,853.21
		<u>132,001,017.21</u>
Deduct:		
Amount transferred to Income Available for Commitment		11,336,394.53
Balance, December 31, 1961		<u><u>\$120,664,622.68</u></u>

## APPROPRIATIONS AND PAYMENTS

Unpaid Appropriations, December 31, 1960		\$ 66,649,657.08
Appropriations during the year	\$36,513,417.70	
Unused balances of appropriations allowed to lapse	1,446,917.09	35,066,500.61
		<u>101,716,157.69</u>
Payments on 1961 and prior years' appropriations		38,075,643.52
Unpaid Appropriations, December 31, 1961		<u><u>\$ 63,640,514.17</u></u>

## INCOME AVAILABLE FOR COMMITMENT

Balance, December 31, 1960		
Add:		
Income and refunds:		
Income from securities	\$23,709,683.56	
Refunds on Prior Year Closed Appropriations	20,422.52	
Unused balances of appropriations allowed to lapse	1,446,917.09	
Amount transferred from Principal Fund as of December 31, 1961	11,336,394.53	\$36,513,417.70
Deduct:		
Appropriations during 1961		<u>36,513,417.70</u>
Balance, December 31, 1961		<u><u>\$ —</u></u>

## LAND, BUILDINGS AND EQUIPMENT FUND

	BALANCE DEC. 31, 1960	CHANGES DURING 1961		BALANCE DEC. 31, 1961
		ADDITIONS	DEPRECIATION AND DISPOSALS*	
<b>New York Office:</b>				
Library	\$ 7,024.00	\$ 4,859.46	\$ 4,571.46	\$ 7,312.00
Equipment	271,825.21	41,129.59	57,775.66 6,015.84*	249,163.30
<b>Girardot, Colombia:</b>				
Land and Buildings, at nominal value	1.00	—	—	1.00
<b>Bellagio, Italy:</b>				
Land and Buildings, at nominal value	1.00	—	—	1.00
	<u>\$278,851.21</u>	<u>\$45,989.05</u>	<u>\$68,362.96</u>	<u>\$256,477.30</u>

FINANCE COMMITTEE'S STATEMENT OF TRANSACTIONS RELATING  
TO INVESTED FUNDS

## PURCHASED:

\$7,500,000	United States of America Treasury Bills due February 8, 1962 @ 99.408	\$ 7,455,600.00
480,000	United States of America 3¼% Treasury Notes due May 15, 1963 @ 100	480,000.00
<sup>20</sup> / <sub>40</sub>	share American Electric Power Co., Inc. Common (Par \$10) @ 31.21	31.21
2,700	shares Christiana Securities Co. Common (Par \$1.25) @ 214.604	579,430.80
5,500	" Corning Glass Works Common (Par \$5) @ 191.794852	1,054,871.69
15,500	" Dow Chemical Co. Common (Par \$5) @ 74.3703767	1,152,740.84
5,500	" National Lead Co. Common (Par \$5) @ 93.332858	513,330.72
13	" Scott Paper Co. Common (No Par) @ 126.625384	1,646.13
8,700	" Union Carbide Corp. Common (No Par) @ 126.9489137	1,104,455.55
13,000	" Westinghouse Electric Corp. Common (Par \$6.25) @ 39.1211876	508,575.44
		<u>\$12,850,682.38</u>

## OTHERWISE ACQUIRED:

\$2,570,000	United States of America 3¼% Treasury Notes due November 15, 1962 received in exchange for \$650,000 United States of America 3¼% Treasury Certificates of Indebtedness due Aug. 1, 1961, and \$1,920,000 United States of America 2¾% Treasury Bonds due September 15, 1961 @ 100	\$ 2,570,000.00
5,000,000	United States of America 3¾% Treasury Bonds due November 15, 1966 received in exchange for a like amount of 2¾% Treasury Bonds due August 15, 1963 @ 99.4595904	4,972,979.52

FINANCE COMMITTEE'S STATEMENT OF TRANSACTIONS RELATING  
TO INVESTED FUNDS — *continued*OTHERWISE ACQUIRED — *cont'd*

1,000,000	United States of America 3 $\frac{1}{8}$ % Treasury Bonds due May 15, 1968 received in exchange for a like amount of 2 $\frac{1}{2}$ % Savings Bonds "G" due October 1, 1962 @ 99.50	\$ 995,000.00
1,567 $\frac{29}{100}$	shares American Electric Power Co., Inc. Common (Par \$10) received as a stock dividend on 62,700 shares of Common (Par \$10) owned of record 12/9/60	—
74,250	Rights American Telephone & Telegraph Co. received on account of ownership of 74,250 shares of Capital (Par \$33 $\frac{1}{3}$ ) owned of record 2/23/61 @ 1.219500067 per right	90,547.88
15,800	shares Christiana Securities Co. Common (Par \$1.25) received in a stock split on 200 shares of Common (Par \$100) owned of record 3/10/61	—
8,375	" First National Bank of Chicago Common (Par \$20) received as a stock dividend on 41,875 shares of Common (Par \$20) owned of record 12/30/60	—
4,350	" International Business Machines Corp. Common (Par \$5) received in a stock split on 8,700 shares of Common (Par \$5) owned of record 5/5/61	—
4,455 $\frac{18}{100}$	" International Paper Co. Common (Par \$2.50) received as a stock dividend on 222,768 shares of Common (Par \$2.50) owned of record 11/24/61	—
656 $\frac{88}{100}$	" Monsanto Chemical Co. Common (Par \$2) received as a stock dividend on 32,844 shares of Common (Par \$2) owned of record 11/15/61	—
4,000	" The Ohio Oil Co. Common (No Par) received as a stock dividend on 200,000 shares of Common (No Par) owned of record 3/10/61	—
33,600	" Peoples Gas Light & Coke Co. Common (No Par) received in a stock split on 33,600 shares of Common owned of record 10/24/61	—
12,987	" Scott Paper Co. Common (No Par) received in conversion of \$1,000,000 Scott Paper Co. 3% Conv. Deb. due March 1, 1971 @ 79.112487, plus cash in the amount of \$1.62 in lieu of the fractional share	1,027,433.88
26,000	" Scott Paper Co. Common (No Par) received in a stock split on 13,000 shares of Common (No Par) owned of record 11/10/61	—
16,666	" Standard Oil Co. (New Jersey) Capital (Par \$7) received as a stock dividend on 1,000,000 shares Standard Oil Co. (Indiana) Capital (Par \$25) owned of record 12/1/61. Taken into the books @ 47.4389415 and the value credited to income. (Cash in the amount of \$32.40 was received in lieu of the fractional shares and was also credited to income.)	790,617.40
		<u>\$10,446,578.68</u>
		<u>\$23,297,261.06</u>



FINANCE COMMITTEE'S STATEMENT OF TRANSACTIONS RELATING  
TO INVESTED FUNDS — *continued*

SOLD		PROCEEDS	LEDGER VALUE
\$9,000,000	United States of America 2½% Treasury Bonds due November 15, 1961 @ 100.140625	\$ 9,012,656.25	\$ 9,000,016.59
74,250	Rights American Telephone and Telegraph Co. @ 1.219500067	90,547.88	90,547.88
<sup>89</sup> / <sub>100</sub>	share Monsanto Chemical Co. Common (Par \$2) @ 45.20	45.20	20.09
16,666	shares Standard Oil Co. (New Jersey) Capital (Par \$7) @ 47.4389415	790,617.40	790,617.40
		<u>\$ 9,893,866.73</u>	<u>\$ 9,881,201.96</u>
REDEEMED AT MATURITY			
\$9,000,000	United States of America Treasury Bills due February 16, 1961 @ 99.336	\$ 8,940,240.00*	\$ 8,940,240.00
4,000,000	United States of America 4¾% Treasury Certificates of Indebtedness due May 15, 1961 @ 100	4,000,000.00	3,998,000.00
		<u>\$12,940,240.00</u>	<u>\$12,938,240.00</u>
OTHERWISE DISPOSED OF			
\$1,000,000	Scott Paper Co. 3% Conv. Deb. due March 1, 1971 surrendered in conversion for 12,987 shares Scott Paper Co. Common (No Par) @ 102.743550	\$ 1,027,435.50	\$ 1,027,435.50
650,000	United States of America 3½% Treasury Certificates of Indebtedness due August 1, 1961, and		
1,920,000	United States of America 2¾% Treasury Bonds due September 15, 1961 exchanged for \$2,570,000 United States of America 3¼% Treasury Notes due November 15, 1962 @ 100	2,570,000.00	2,570,000.00
5,000,000	United States of America 2½% Treasury Bonds due August 15, 1963 exchanged for a like amount of 3¾% Treasury Bonds due November 15, 1966 @ 99.4595904	4,972,979.52	4,972,979.52
1,000,000	United States of America 2¼% Savings Bonds "G" due October 1, 1962 exchanged for a like amount of 3¾% Treasury Bonds due May 15, 1968 @ 99.64	996,400.00	1,000,000.00
		<u>\$ 9,566,815.02</u>	<u>\$ 9,570,415.02</u>
LEDGER VALUE REDUCED			
74,250	shares American Telephone & Telegraph Co. Capital (Par \$33½) by value of 74,250 Rights @ 1.219500067	\$ 90,547.88	\$ 90,547.88
Amortization of bond premiums		7,936.55	7,936.55
		<u>\$ 98,484.43</u>	<u>\$ 98,484.43</u>
		<u>\$32,499,406.18</u>	<u>\$32,488,341.41</u>

\* Proceeds of U.S.A. Treasury Bills redeemed were augmented by the sum of \$59,760.00 which was appropriately credited to income.

**FINANCE COMMITTEE'S STATEMENT OF TRANSACTIONS RELATING  
TO INVESTED FUNDS — *concluded***

PAYMENTS ON APPROPRIATIONS	MARKET VALUE	LEDGER VALUE
To The Museum of Modern Art, transfer of 36,000 shares Standard Oil Co. (New Jersey) Capital (Par \$7) @ 41	\$ 1,476,000.00	\$ 180,223.04
To the American Council of Learned Societies, transfer of 20,000 shares Standard Oil Co. (New Jersey) Capital (Par \$7) @ 49.50	990,000.00	100,123.91
To The Population Council, Inc., transfer of 12,000 shares Standard Oil Co. (New Jersey) Capital (Par \$7) @ 44	528,000.00	60,074.35
	<u>\$ 2,994,000.00</u>	<u>\$ 340,421.30</u>
		<u>\$32,828,762.71</u>

**RECONCILIATION**

Ledger Value of Securities December 31, 1960		\$191,269,430.38
Purchased	\$12,850,682.38	
Otherwise Acquired	<u>10,446,578.68</u>	<u>23,297,261.06</u>
		214,566,691.44
Sold	9,881,201.96	
Redeemed at Maturity	12,938,240.00	
Otherwise Disposed of	9,570,415.02	
Ledger Value Reduced	98,484.43	
Payments on Appropriations	<u>340,421.30</u>	<u>32,828,762.71</u>
Ledger Value of Securities December 31, 1961		<u>\$181,737,928.73</u>

**SCHEDULE OF SECURITIES**

BONDS	PAR	LEDGER VALUE		MARKET QUOTATIONS	
		PRICE	TOTAL	PRICE	TOTAL
American Telephone & Telegraph Co. 3 <sup>7</sup> / <sub>8</sub> % 34 yr. Deb. July 1, 1990	\$ 2,000,000	102.349	\$ 2,046,977.00	90.50	\$ 1,810,000.00
Dallas Power & Light Co. 4 <sup>1</sup> / <sub>4</sub> % 1st Mtge. December 1, 1986	500,000	100.707	503,536.30	96.00	480,000.00
General Motors Accept- ance Corp. 5% 20 yr. Deb. August 15, 1977	1,000,000	97.50	975,000.00	104.125	1,041,250.00
Illinois Bell Telephone Co. 4 <sup>1</sup> / <sub>4</sub> % 1st Mtge. Series "E" March 1, 1988	1,000,000	101.197	1,011,968.82	96.00	960,000.00
International Bank for Reconstruction and Development 3 <sup>1</sup> / <sub>2</sub> % October 15, 1971	1,000,000	98.00	980,000.00	93.75	937,500.00

SCHEDULE OF SECURITIES — *continued*

BONDS — <i>cont'd</i>	LEDGER VALUE		MARKET QUOTATIONS		
	PAR	PRICE	TOTAL	PRICE	TOTAL
Michigan Bell Telephone Co. 4 $\frac{3}{8}$ % 35 yr. Deb. December 1, 1991	\$ 1,000,000	101.944	\$ 1,019,438.54	97.75	\$ 977,500.00
The Mountain States Telephone & Telegraph Co. 4 $\frac{3}{8}$ % 31 yr. Deb. February 1, 1988	1,000,000	101.092	1,010,920.29	97.875	978,750.00
Pacific Gas & Electric Co. 4 $\frac{1}{2}$ % 1st & Ref. Mtge. "AA" December 1, 1986	1,000,000	101.251	1,012,509.86	101.00	1,010,000.00
Public Service Electric & Gas Company 4 $\frac{3}{8}$ % 1st & Ref. Mtge. November 1, 1986	1,000,000	101.049	1,010,494.68	98.125	981,250.00
United States of America Treasury Bills, February 8, 1962	7,500,000	99.408	7,455,600.00	99.408	7,455,600.00
United States of America Treasury Bonds:					
2 $\frac{1}{2}$ %-Aug. 15, 1963	6,000,000	99.460	5,967,575.42	98.6875	5,921,250.00
3 $\frac{3}{8}$ %-Nov. 15, 1966	5,000,000	99.460	4,972,979.52	97.8125	4,890,625.00
2 $\frac{1}{2}$ %-June 15, 1962-67	11,200,000	98.739	11,058,762.94	92.6875	10,381,000.00
3 $\frac{7}{8}$ %-May 15, 1968	1,000,000	99.50	995,000.00	99.8125	998,125.00
2 $\frac{3}{4}$ %-Dec. 15, 1964-69	12,000,000	96.305	11,556,562.50	88.875	10,665,000.00
2 $\frac{1}{2}$ %-June 15, 1967-72	9,000,000	98.941	8,904,650.50	86.1875	7,756,875.00
United States of America Treasury Notes:					
3 $\frac{1}{4}$ %-Nov. 15, 1962	2,570,000	100.00	2,570,000.00	100.625	2,586,062.50
1 $\frac{1}{4}$ %-April 1, 1963	4,000,000	92.25	3,690,000.00	98.0625	3,922,500.00
3 $\frac{1}{4}$ %-May 15, 1963	480,000	100.00	480,000.00	99.90625	479,550.00
4 $\frac{7}{8}$ %-Nov. 15, 1963	1,000,000	99.95	999,500.00	102.75	1,027,500.00
4 $\frac{7}{8}$ %-Nov. 15, 1964	5,000,000	99.75	4,987,500.00	103.25	5,162,500.00
			<u>\$73,208,976.37</u>		<u>\$70,422,837.50</u>
<b>STOCKS</b>	<b>SHARES</b>	<b>PRICE</b>	<b>TOTAL</b>	<b>PRICE</b>	<b>TOTAL</b>
American Electric Power Co., Inc. (Par \$10)	64,268	\$16.720	\$ 1,074,602.01	\$ 69.50	\$ 4,466,626.00
American Smelting & Refining Co. (No Par)	11,000	46.605	512,655.20	62.50	687,500.00
American Telephone & Telegraph Co. Cap. (Par \$33 $\frac{1}{8}$ )	74,250	42.810	3,178,621.42	136.125	10,107,281.25

SCHEDULE OF SECURITIES — *continued*

STOCKS — <i>cont'd</i>	SHARES	LEDGER VALUE		MARKET QUOTATIONS	
		PRICE	TOTAL	PRICE	TOTAL
Christiana Securities Co. (Par \$1.25)	18,700	\$90.536	\$ 1,693,030.80	\$213.00	\$ 3,983,100.00
Consolidated Natural Gas Co. Cap. (Par. \$10)	300,000	16.001	4,800,180.01	60.25	18,075,000.00
Continental Insurance Co. Cap. (Par \$5)	27,500	33.262	914,713.17	69.875	1,921,562.50
Continental Oil Co. Cap. (Par \$5)	300,000	6.718	2,015,418.15	55.50	16,650,000.00
Corning Glass Works (Par \$5)	18,000	83.322	1,499,789.48	191.00	3,438,000.00
Crown Zellerbach Corporation (Par \$5)	22,500	26.274	591,167.64	59.375	1,335,937.50
Dow Chemical Co. (Par \$5)	37,940	43.573	1,653,154.51	73.125	2,774,362.50
First National Bank of Chicago (Par \$20)	50,250	23.282	1,169,895.85	105.00	5,276,250.00
Freeport Sulphur Co. (Par \$10)	90,000	24.799	2,231,877.90	27.75	2,497,500.00
General Electric Co. (Par \$5)	60,000	19.674	1,180,424.14	75.25	4,515,000.00
Goodrich, B. F. Co. (Par \$10)	50,000	36.798	1,839,893.41	71.875	3,593,750.00
Hartford Fire Insurance Co. Cap. (Par \$5)	100,000	21.785	2,178,527.78	79.50	7,950,000.00
Inland Steel Co. (No Par)	30,000	24.984	749,507.83	47.875	1,436,250.00
Insurance Company of No. America Cap. (Par \$5)	50,000	48.238	2,411,908.38	104.50	5,225,000.00
International Business Machines Corp. (Par \$5)	13,050	51.459	671,546.06	579.00	7,555,950.00
International Nickel Co. of Canada Ltd. (No Par)	110,000	20.818	2,289,969.82	85.375	9,391,250.00
International Paper Co. (Par \$2.50)	227,223 <sup>18</sup> / <sub>100</sub>	10.388	2,360,358.18	37.125	8,435,667.24
Kennecott Copper Corporation (No Par)	30,000	58.539	1,756,180.37	83.50	2,505,000.00
Monsanto Chemical Co. (Par \$2)	33,500	22.830	764,814.93	52.625	1,762,937.50
National Lead Co. (Par \$5)	20,800	60.583	1,260,135.85	97.00	2,017,600.00

SCHEDULE OF SECURITIES — *concluded*

STOCKS— <i>concl'd</i>	SHARES	LEDGER VALUE		MARKET QUOTATIONS	
		PRICE	TOTAL	PRICE	TOTAL
The Ohio Oil Co. (No Par)	204,000	\$16.953	\$ 3,458,394.00	\$ 40.50	\$ 8,262,000.00
Peoples Gas Light & Coke Co. (No Par)	67,200	15.735	1,057,373.46	52.00	3,494,400.00
Phelps Dodge Corporation Cap. (Par \$12.50)	45,000	26.358	1,186,127.84	61.00	2,745,000.00
Scott Paper Co. (No Par)	39,000	26.387	1,029,080.01	42.625	1,662,375.00
Socony Mobil Oil Co., Inc. Cap. (Par \$15)	300,000	25.927	7,778,152.30	51.375	15,412,500.00
The Southern Co. (Par \$5)	26,000	39.099	1,016,586.05	54.875	1,426,750.00
Standard Oil Co. of California Cap. (Par \$6.25)	200,000	9.468	1,893,562.39	54.75	10,950,000.00
Standard Oil Co. (Indiana) Cap. (Par \$25)	1,000,000	14.185	14,184,717.71	55.00	55,000,000.00
Standard Oil Co. (New Jersey) Cap. (Par \$7)	5,932,000	5.006	29,696,752.17	50.75	301,049,000.00
Travelers Insurance Co. Cap. (Par \$5)	25,000	34.255	856,385.00	163.00	4,075,000.00
Union Carbide Corporation (No Par)	28,700	98.267	2,820,263.48	121.375	3,483,462.50
Union Tank Car Co. Cap. (No Par)	100,000	5.932	593,186.57	35.25	3,525,000.00
United States Steel Corporation (Par \$16 $\frac{3}{4}$ )	20,000	41.115	822,293.22	78.50	1,570,000.00
Westinghouse Electric Corporation (Par \$6.25)	53,000	32.700	1,733,116.96	38.75	2,053,750.00
Weyerhaeuser Co. Cap. (Par \$7.50)	120,000	13.372	1,604,588.31	32.25	3,870,000.00
			<u>\$108,528,952.36</u>		<u>\$544,180,761.99</u>

## SUMMARY

	LEDGER VALUE	MARKET QUOTATIONS
Bonds	\$ 73,208,976.37	\$ 70,422,837.50
Stocks	<u>108,528,952.36</u>	<u>544,180,761.99</u>
	<u>\$181,737,928.73</u>	<u>\$614,603,599.49</u>

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