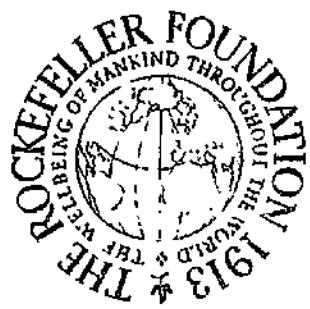


THE ROCKEFELLER FOUNDATION

ANNUAL REPORT FOR 1963



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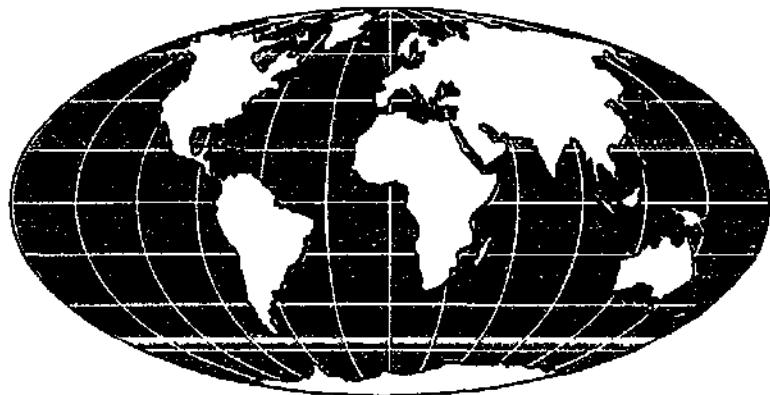
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THE PRESIDENT'S REVIEW · 1963



PROMISE AND PROGRESS

THE PRESIDENT'S REVIEW for 1962 commented on the completion of a half-century of service by The Rockefeller Foundation. During the year 1963 the officers and Trustees undertook a special study of the history of the Foundation program, its present status and its future implications. Although no review of the past is contemplated here, this examination of the first fifty years revealed clear-cut patterns of procedure and accomplishments fully in keeping with the Foundation's stated goal: the well-being of mankind throughout the world.

During its earliest years The Rockefeller Foundation, believing ill health to be the major barrier to human well-being, concentrated its work in the field of public health. Considering the prevalence of endemic disease at that time, this was a logical decision. What has been accomplished since has demonstrated that organized long-term efforts can raise health levels throughout the world.

Because basic deficiencies other than ill health affect human welfare, new elements were added to the Foundation's evolving program, first in the field of the social sciences, then the humanities, and later in the sciences related to agriculture. As these successive programs

were adopted, they were organized as divisions of the Foundation, each to work within the limits of its field.

In recent years the officers and Trustees have come to the conclusion that today's needs make it desirable, and past experience makes it possible, to emphasize integration among the several program interests of the Foundation. There is now, for example, an increasing association between nutrition and health — the sciences directed to the physical well-being of mankind — and greater emphasis on the application of the principles of economics to both.

A concerted approach is increasingly apparent in each of the problem areas with which the Foundation concerns itself. These continue to be the medical and natural sciences, the humanities and social sciences, and the agricultural sciences. The officers function as professionals and scholars within the total program, expressing individually the fields in which they are trained and in which their experience lies. They work closely with officers in other disciplines in preliminary discussions, planning, and ultimately in carrying out program — procedures calculated to provide maximum accomplishment through the association of effort and competence.

During the past year the Foundation has sought to unite wherever possible and practical some of its programs of long standing. In keeping with former practice it is in the process of disengaging itself from others which have gained the vitality and recognition to become self-supporting. Evidence that Foundation-assisted projects have reached a point at which they can proceed without external support is the best proof of sound judgment in the selection of programs and projects.

Following a careful review of past activities, The Rockefeller Foundation's Board of Trustees met in special session on September 20, 1963, and issued a statement on future program and policy entitled "Plans for the Future." This succinct, sharply focused document describes in five sections the principal areas in which The Rockefeller Foundation expects to develop its program during the foreseeable years ahead. It is not a radical departure from the patterns of the past, but rather the sublimated product of program evolution, set in the contemporary context and projected into the future. The five interrelated areas of concentration are: Toward the conquest of hunger; The population problem; Strengthening emerging centers of learning;

Toward equal opportunity for all; Aiding our cultural development. It is to a description of these areas and to the Foundation's objectives in each that this Review is directed.

I. TOWARD THE CONQUEST OF HUNGER

It has become increasingly clear that, even in 1963, all too many of the world's citizens are denied that most basic element of life, their daily bread. It seems paradoxical that in a world of such tremendous technological accomplishments, one in which space travel has become an actuality, millions upon millions of people are denied a diet adequate to support energy requirements for normal existence.

The fact that there are still millions of human beings in a precarious state of health and well-being is an international tragedy. And it is inevitable that during the years ahead disadvantaged people everywhere will insist on a larger share of the basic necessities of life and on greater opportunities. The principal responsibility for meeting these demands falls squarely upon the leaders of the nations involved. It is they who have assumed the power and accepted the burdens, and they must make the judgments about what can and will be done to release their people from the fetters of ignorance and lack of opportunity.

Assistance which arises from the understanding and good will of the more fortunate nations and from consortia of nations banded together for good purposes can do much to be helpful in regions shadowed by ill health, hunger, and ignorance. There is not, of course, enough money or manpower to permit the solution of all problems by external agencies. Those who want to help can do so most effectively by generating, in a variety of ways, new efforts and activities which may take root and grow through the national resources of the countries concerned.

Private philanthropy can play only a modest role in the conquest of hunger around the world. Its resources are infinitesimal in comparison to the total need and they must be used with wisdom if they are to be helpful. The Rockefeller Foundation has chosen to assist in this effort through cooperative efforts in the interrelated fields of education and the medical, agricultural, and social sciences. Recognizing that good nutrition is the basis of health and energy, the Founda-

tion attempts to develop knowledge and practices, useful in themselves, which others can apply and extend so that the gap between food production and national requirements may gradually be closed.

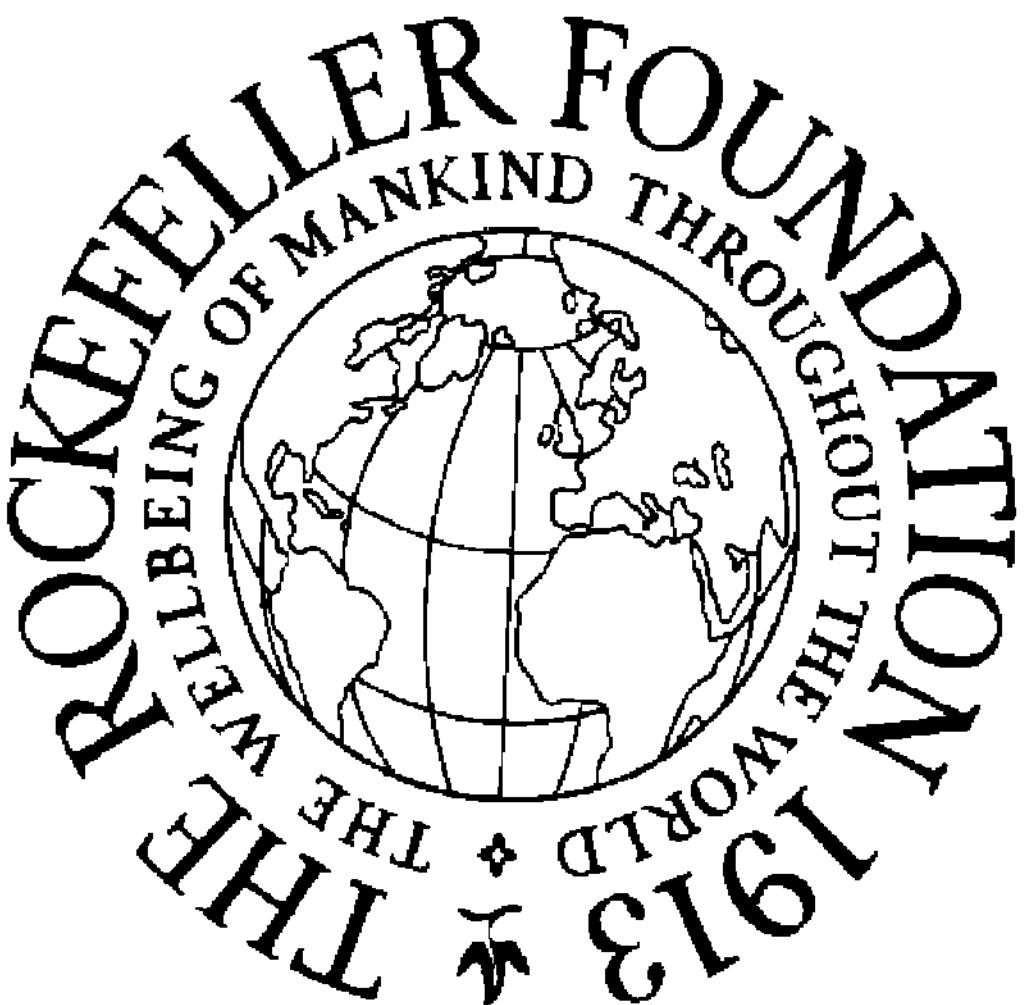
Because increasing numbers of qualified scientists are necessary to serve these societies, the Foundation is devoting itself to strengthening education in the social, medical, agricultural, and basic sciences simultaneously. And hand in hand with these efforts it participates in rural health programs so that advanced agricultural technologies will accompany better health protection to enable people to lead fuller lives. Necessarily, such practical measures must be backed up by research in nutrition, animal health, food processing, and sanitary engineering, to generate a continuing flow of new knowledge which can be readily applied for public benefit. Always the Foundation's cooperative efforts must be adapted to the local culture and environment and must be based on mutual understanding and the desire to work together toward humanitarian goals.

Over the years much has been learned about how to improve the food supplies and diets of rural and urban people, and much has been accomplished. A major problem which still remains is that of assuring

A housewife (below) makes sorghum *chappatis*, a staple in much of India; the improvement of sorghum is a major aim of the Foundation's cooperative Indian agricultural program. Harvesting seed (opposite) of hybrid corn in El Salvador, a project of the Foundation's international food crop improvement program.



Photograph Excised Here



Photograph Excised Here

that new information, methods, and materials are extended throughout a given country so that they may be put to use promptly and effectively.

The techniques of extension for producer and consumer education are most highly developed in the western world. Information moves rapidly through a variety of channels with the result that there is quick response in the improvement of production and in public demand for new goods and services. In many countries of the world effective extension has not been achieved because of a combination of circumstances: geographic limitations, inadequate transportation systems,

insufficient numbers of trained personnel, lack of incentive, low educational levels, and less than full understanding of the advantages which extension may bring.

The Rockefeller Foundation within its own program in the agricultural and health sciences has attempted to encourage the development of extension methods and organizations, but it is clear that vastly greater efforts are needed to ensure over-all progress. It is not difficult to extend new ideas and new methods to educated groups which have sufficient economic resources to take advantage of them. It is far less easy to extend and adapt progressive developments in areas where individual producers do not possess these advantages and do not readily understand or accept innovations. The social, agricultural, and health sciences must come into close union if there is to be ultimate success in solving this problem.

The Foundation hopes to further reinforce, integrate, and internationalize its current pattern of operation in Latin America, Africa, and Asia in the expectation that as new knowledge and materials become available, they can quickly be extended to serve the greatest possible usefulness wherever they can be applied.

Thus from a number of approaches to the solution of the problem of hunger, the Foundation has selected the reinforcement of education, research, and extension activities, together with the training of young scientists through fellowships and scholarships. The Foundation operates in part through its own scientific staff assigned to various areas of the world, and through assistance to scientists, institutions, and organizations which serve the basic needs of their nations.

The Foundation's work in the agricultural sciences began as a single center in Mexico directed toward the improvement in the quantity and quality of the country's basic foods. It expanded to include similar centers, manned by resident staff, in Colombia, Chile, and India. A recent addition to the program is the development of international institutes strategically located and designed to carry on basic and applied research on food problems of major import over a wide region. Two such centers have already been established and others are in prospect.

The International Rice Research Institute is a cooperative venture of the government of the Philippines and the Ford and Rockefeller

Foundations. The International Center for Corn and Wheat Improvement at the National School of Agriculture at Chapingo, Mexico, is operated cooperatively by the government of Mexico and The Rockefeller Foundation. Both these institutions are broadly regional in character, are designed to work on problems of international significance, and are organized so as to be able to disseminate advances in scientific agriculture as rapidly as possible wherever they may be most useful.

II. THE POPULATION PROBLEM

An increasing number of thoughtful persons agree that no greater challenge faces mankind than the stabilization of population. The rate at which new individuals are coming into the world each day is stark evidence that sheer numbers may one day so overburden resources that social progress will grind to a halt.

It is sometimes claimed that current efforts to improve the health, food supplies, and well-being of the world's citizens run counter to the primary need to stabilize population. Morally, however, each individual has the same right as any other to hope for a better life. Though millions must hope without any realistic expectation of fulfillment, the conclusion cannot be escaped that every possible effort must be made to provide adequate diets and health for all people.

But it is equally clear that a steadily continuing increase in the world's population adds an immense burden to the alleviation of distress, to the production of sufficient food supplies, and to the provision of essential services. Heretofore population has been kept in control by such great catastrophes as war, epidemics, famine, and floods. Modern societies, however, with their humanitarian and ethical values, must make every effort to prevent such cruel disasters. It is therefore necessary for the world to put its collective wisdom to work on ways in which population increases and technological advances can be brought into a reasonable balance so that, little by little, men can begin to hope for a better ratio between numbers and the available goods and services essential to human well-being.

In the last analysis the decision on population stabilization must be made by society. It cannot be imposed by force of law but must come from understanding, individual conviction, and public action. Action

must involve educational and research institutions, religious organizations, governmental and civic groups — in short, all levels of social endeavor. Only then will the problem be capable of solution; only then will it be possible to make available to each individual the information and materials necessary to permit rational family planning within his own cultural and social environment.

Before any substantial results can be hoped for, it will be necessary to bring about a greater measure of agreement among groups presently holding different points of view. All must one day understand that no ethically oriented society can survive the erosion of overwhelming numbers of disadvantaged people. Uncontrolled increases in population without consideration of the carrying capacity of the world's natural and man-made resources will render life less and less meaningful.

During the years ahead, the Foundation will support varied efforts in the field broadly described as population in the hope that these will make some contribution to understanding of the total problem and that they, along with others, will lead to wise and acceptable solutions which will eventually achieve a stabilization of population. Only then will it be possible for the peoples of the free world to enjoy the benefits of constitutional government and the fruits of modern technology.

The Rockefeller Foundation fully recognizes that progress toward population stabilization is not a simple process or one having but a single facet. The factors involved are many and complex, and must be approached from various points of view. This Foundation will assist, first, research relating to human fertility in such fields as the physiology of reproduction, endocrinology, human genetics, the biochemical effects of diet, and others. Second, it will support research in demography and on cultural attitudes. Third, it will support pilot operations and studies in areas where population density poses especially difficult problems and where there is a desire for help. Hopefully, successful pilot operations could be extended and expanded with reasonable rapidity in order to serve wherever there is need for them.

The study of population and its possible stabilization is not a new venture for The Rockefeller Foundation. Over a period of some forty years grants amounting to more than \$7.1 million have been made to organizations in this country and abroad working in this area. More than \$2 million of this total was for the support of research on the biol-



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The Population Council, New York, has sponsored demographic studies for over a decade. The interviewer (above) is assisting in a council-administered family planning survey in Baunia, East Pakistan. Social workers (center) conduct a family planning education session for women of Baunia.

The Kurali health center near New Delhi is associated with a primary center at Ballabhgarh, in a pilot project in which the Foundation is cooperating. Community health centers may prove to be a major reliance for family planning education.

ogy of reproduction, and more than \$5 million for demographic studies and for the training of specialists in population research. In 1963 the Foundation contributed substantially to the establishment of a Center for Population Studies at Harvard University, and the year before supported a pilot study of family planning in Santiago, Chile, conducted cooperatively by Harvard University and the University of Chile. The Foundation's interest in rural health centers also includes family planning as a topic of investigation.

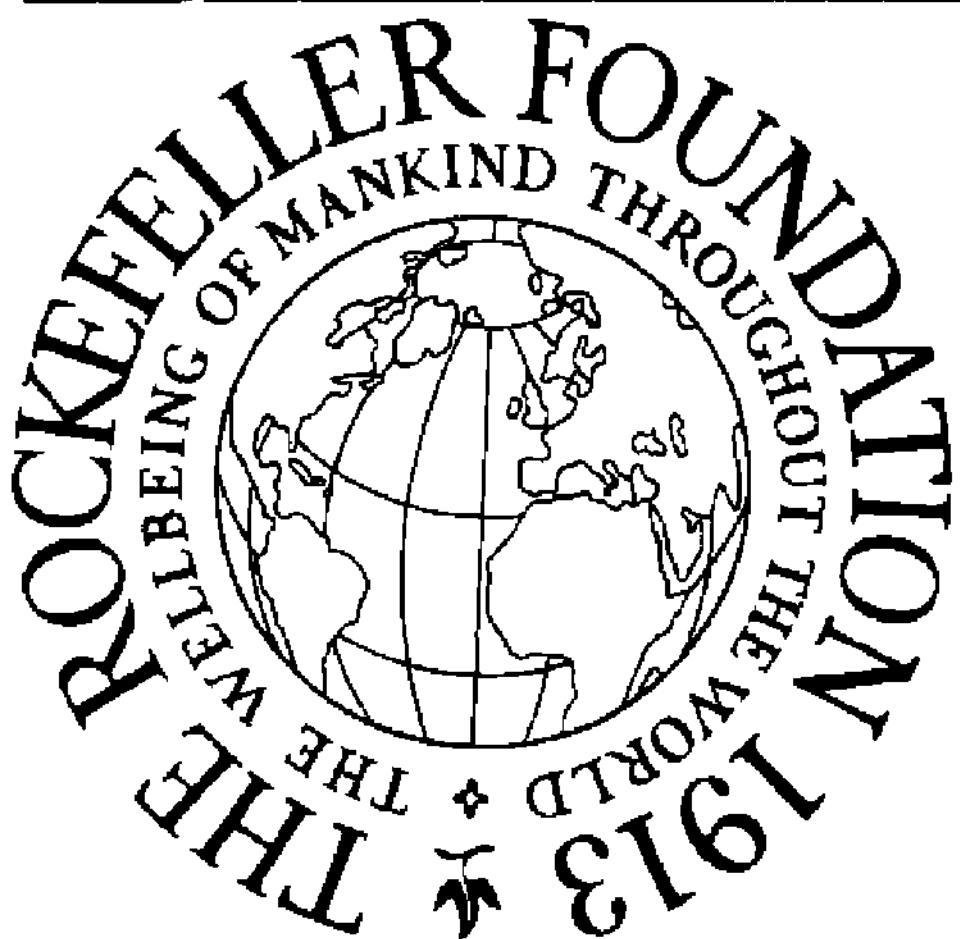
III. STRENGTHENING EMERGING CENTERS OF LEARNING

For fifty years The Rockefeller Foundation has worked toward the day when adequate educational opportunities will be available to people everywhere. The Foundation's practice has been to take advantage of every opportunity to identify men and women of potential excellence and with leadership qualities and to assist them in their chosen careers. Fellowships, scholarships, and a variety of other training awards have been the principal thrust of this program, with support to research programs, institutions, and operating projects completing the Foundation assistance pattern.

Today, as new nations appear with a rapidity never before seen in the world's history, millions of people expect to participate in the march of progress. Unfortunately, many new and underdeveloped nations have not been able thus far to bring their educational systems to a satisfactory level.

One way in which educational opportunities are offered to outstanding individuals from less developed nations is through vast numbers of scholarships, fellowships, and study grants for training abroad. This has been a major force in the progress of many nations, and each owes a great debt to those agencies which have enabled members of their communities to take advantage of educational opportunities in other countries.

It is obviously impossible and undesirable for any one nation to satisfy the educational needs of another. Foreign universities cannot and should not have the responsibility for mass education which is always that of the sovereign nation. Believing this, The Rockefeller Foundation has sought to reinforce the educational pattern of develop-



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University of Ibadan, Nigeria: Tower Court with administration buildings (left) and a lecture hall.

ing nations largely through assistance to indigenous institutions of higher education.

Currently and during the foreseeable future, the Foundation expects to work with a number of foreign institutions, each of which shows a potential for great service to the nation and to the region in which it is situated. Such strong institutions of higher learning stand for progress. They are the wellsprings of knowledge and the source of increasing numbers of well-trained young men and women who may take on important public and private responsibilities. They can act as stabilizing influences in government and politics and they contribute to the tone of society and to the development of their cultures.

As new nations come into being, and as older ones show increasing desire to improve their educational resources, the Foundation can be

of assistance in at least a few instances where there would appear to be both need and opportunity. This process is already well under way and some very satisfying cooperative relationships have been established in Latin America, in Asia, and in Africa.

The Foundation collaborates with these emerging institutions of higher learning by contributing highly qualified personnel for such periods of time as may be necessary to organize and develop university departments and to train people who eventually can assume full responsibility for their operation. Foundation staff members are working in intimate association with their colleagues in these institutions toward mutually established goals in the national interest. In addition, fellowships are granted to improve the training and experience of young faculty members, and assistance in the form of equipment and other items essential to developing programs can be made available.

To illustrate the work of the Foundation in strengthening centers of learning overseas, four typical examples might be cited.

The University of Valle has received Foundation support for more than a decade and already is internationally important in several areas of the field of medicine. Even more significant for its influence on Latin American university evolution is the fact that other colleges within the university are keeping pace and there is growing interest in supporting them among several international agencies. In 1963 the Foundation's assistance was given at levels as varied as studies of the business and financial aspects of the university's administration, the provision of basic teaching materials, support of visiting appointments and of travel and study abroad by faculty members, grants toward salaries and operating expenses, and for the construction of a new building to house the humanities and linguistics departments.

The University of East Africa consists of constituent colleges in Kenya, Uganda, and Tanganyika. It is a creative experiment in educational federation among three states in varying stages of development. Among the larger items of support in 1963 were grants to set up a program for research and training in economic development, and for an intensification of the work of the Faculty of Agriculture. Substantial assistance has also been provided in support of medical education and the development of a faculty of veterinary science within the university. The three countries in which constituent colleges are



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At the University of Ibadan,
the head of the department
of chemical pathology (above)
makes a nutritional evalua-
tion with an amino acid ana-
lyzer, and an animal scientist
(left) helps a member of his
dairy microbiology class exam-
ine milk samples for bacteria.

located have been increasing their support of higher education, and other international agencies have become interested in assisting with one or more phases of the total educational program.

The University of Ibadan, Nigeria, presents a special opportunity for a variety of sound and reasonably rapid educational developments on a broad front. For example, the Department of Psychiatry, Neuro-surgery, and Neurology, created in 1963 within the Faculty of Medicine, is the first in Africa to train students in these fields. The creation of this department was substantially aided by the Foundation. A virology research unit also is being set up at Ibadan, with the help of Foundation grants and staff assistance, to study the large number of presently undiagnosed "tropical fevers" that seem to be common in West Africa; this unit will be the first of its kind at an African university. The Foundation made a number of other grants to Ibadan in 1963, for over-all development, and for strengthening teaching and research in the Faculties of Agriculture and Veterinary Science. Several Foundation staff members participate directly in the program through assignment to the faculty of the University of Ibadan. The Foundation has also made available resident specialists in medicine, agriculture, and virology.

The University of the Philippines is a firmly established institution which occupies a strategic position for playing a leading role in educational development in Southeast Asia. Substantial Foundation grants were made during the year to support faculty research in the Departments of English and Comparative Literature, History, Political Science, and Sociology, and for the development of training and research programs in economics and agriculture. The International Rice Research Institute, operated by the Foundation, and the university's College of Agriculture are further developing and strengthening their mutually beneficial relationship.

During 1963, Foundation officers continued to visit and to recommend experimental grants to several other universities which some day may be brought into the development program. Although funds for this program are necessarily limited, there is growing evidence that Foundation assistance has permitted accomplishments which have attracted other agencies prepared to invest in projects of demonstrated merit and great potential.

IV. TOWARD EQUAL OPPORTUNITY FOR ALL

The Rockefeller Foundation and several of its sister boards, principally the General Education Board, have long been concerned with the inequality of opportunities and advantages which exists for various citizen groups in this country. Although this undesirable situation applies to more than a single group, the Negro has been most affected.

Americans like to think of this nation as a democracy with equal opportunities for all; we point with pride to the success which has been achieved by many individuals from minority groups. The position of the Negro, however, is not and has never been the same as that of others. Tradition and individual attitudes have prevented parallel development with the result that social progress in this nation has been intolerably slow for those who believe in total human justice.

The Rockefeller Foundation, the General Education Board, and the Laura Spelman Rockefeller Memorial together have invested over the years more than \$66 million in the cause of Negro education. Under a recent resolution by its Board of Trustees the Foundation is now making this area one of its major program sectors.

The tremendous problems involved in providing equality are by no means centered in education for the Negro. It is essential that many forces work in concert to bring about as rapidly as possible those changes which will enable the Negro and other disadvantaged citizens to develop their full potential: have full civil rights, equal educational opportunities, and the chance to utilize their abilities.

Because so much of its long experience lies in education, the Foundation, as only one small unit in this endeavor, has chosen to help stimulate greater educational opportunities for the disadvantaged citizens of this country. A major concern will be with efforts to aid the Negro community, with considerable — but by no means total — emphasis on higher education.

The Foundation will continue to seek to be of assistance to selected institutions of higher education whose student bodies are predominantly Negro. At the same time, it would expect to encourage and support efforts to broaden the pattern of Negro education in other institutions throughout the nation. Negro students have difficulty in qualifying for university education in numbers which are proportional

to the Negro population, not from inherent lack of ability but from lack of opportunity for adequate preparation. In a great many instances in which Negro students do qualify for college entrance they are beset by economic difficulties which discourage the desire to pursue advanced training, particularly because eventual employment opportunities may be restricted because of race. The Foundation stands ready to work with others toward improvement in these problem areas.

A strong start was made this year, with several major appropriations exemplifying the Foundation's objectives. A substantial contribution to the United Negro College Fund will help strengthen faculty and plant of 32 predominantly Negro member colleges; an additional sum is available to the officers for allocation to member colleges over the next three years.

To explore ways in which outstanding colleges can work with secondary schools to find and prepare disadvantaged students for higher education, the Foundation made grants to Princeton University, Oberlin College, and Dartmouth College to conduct on-campus summer sessions over a three-year period to provide intensive instruction for groups of promising students, both Negro and white, from secondary schools within their region.

Duke, Emory, Tulane, and Vanderbilt are among the outstanding private universities in the South that have established a new policy within the last year or two to admit students to all parts of the university without restrictions as to race or color. These universities are distressed, however, by the fact that even among Negro students who can qualify for admission very few can qualify for scholarship aid on equal terms with other needy students. To assist qualified undergraduates at Duke, Emory, Tulane, and Vanderbilt universities for whom these institutions cannot provide aid, the Foundation has appropriated funds to be available over a six-year period.

Finally, to encourage a larger number of Negroes and other students in southern colleges to seek graduate training, the Foundation made a grant to the Woodrow Wilson National Fellowship Foundation to enable Fellows to teach for a year at some forty southern colleges, most of them predominantly Negro, with an especial emphasis on identifying and preparing promising students to qualify for graduate training at major institutions.



United Negro College Fund member institutions are providing educational opportunities for more than 25,000 students. A Hampton Institute student welcomes foreign visitors to campus (right); a group in the Fisk University physics department (below) examines a student-built van de Graaff generator.

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These grants are illustrative of the complexities surrounding higher education for the Negro, which itself is only one of many parallel efforts needed to achieve for the Negro a more fitting place in United States society. Toward that still distant day when disadvantaged young people are represented in colleges and graduate schools in proportion to their numbers, it is necessary today to help provide them with a better secondary education, to identify promising students, to mount intensive programs to qualify them for college admission, to provide financial and tutoring assistance to many who are admitted to college, and to give additional aid to the hopefully increasing number who can be expected to qualify for graduate training.

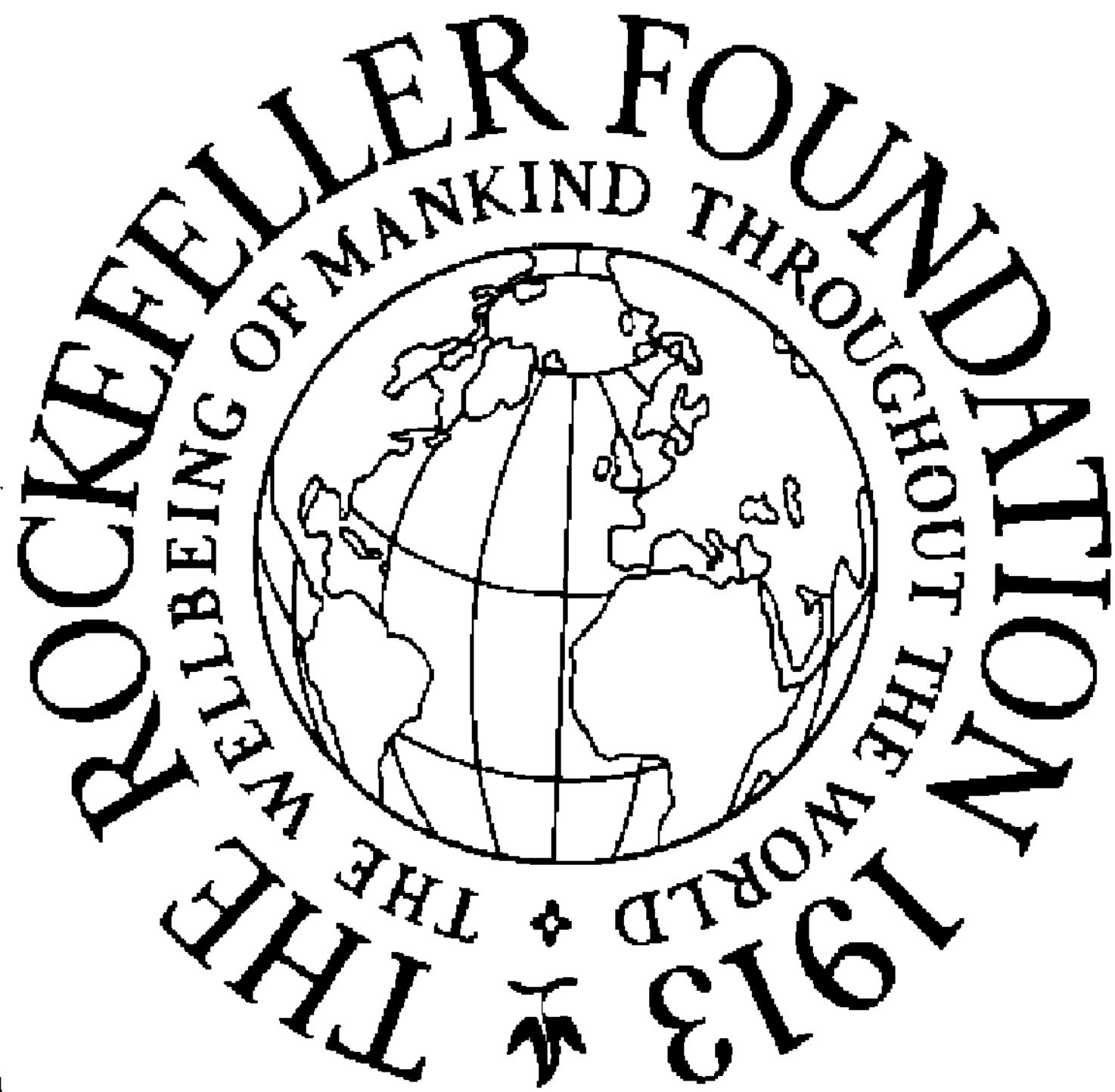
The Foundation will seek to develop leadership through education wherever possible in the hope that the day will come before too long when all Americans have equal opportunity and none is remarkable because of differences in race, creed, or color.

V. AIDING OUR CULTURAL DEVELOPMENT

Since 1929, when the social sciences and the humanities became a part of the Rockefeller Foundation program, noteworthy accomplishments have been recorded. Currently it appears to the officers and the Trustees that even greater opportunities exist for the Foundation to help stimulate opportunities for individual citizens to develop their own taste and their own expression for deeper enjoyment of the life around them.

Until relatively recently, it was necessary for most citizens to work for long hours each day throughout the year to gain a living. Little time remained for activities other than those necessary for supporting families. Cultural opportunities were largely created and enjoyed by those few who had sufficient accumulation of wealth to provide themselves with leisure time.

With the advance of American technology the pattern of life has changed dramatically. Essentially all segments of society now find themselves with substantially increased amounts of leisure. At the same time much of the drudgery of manual labor which once required so much energy from the individual has been largely eliminated by the use of modern tools.



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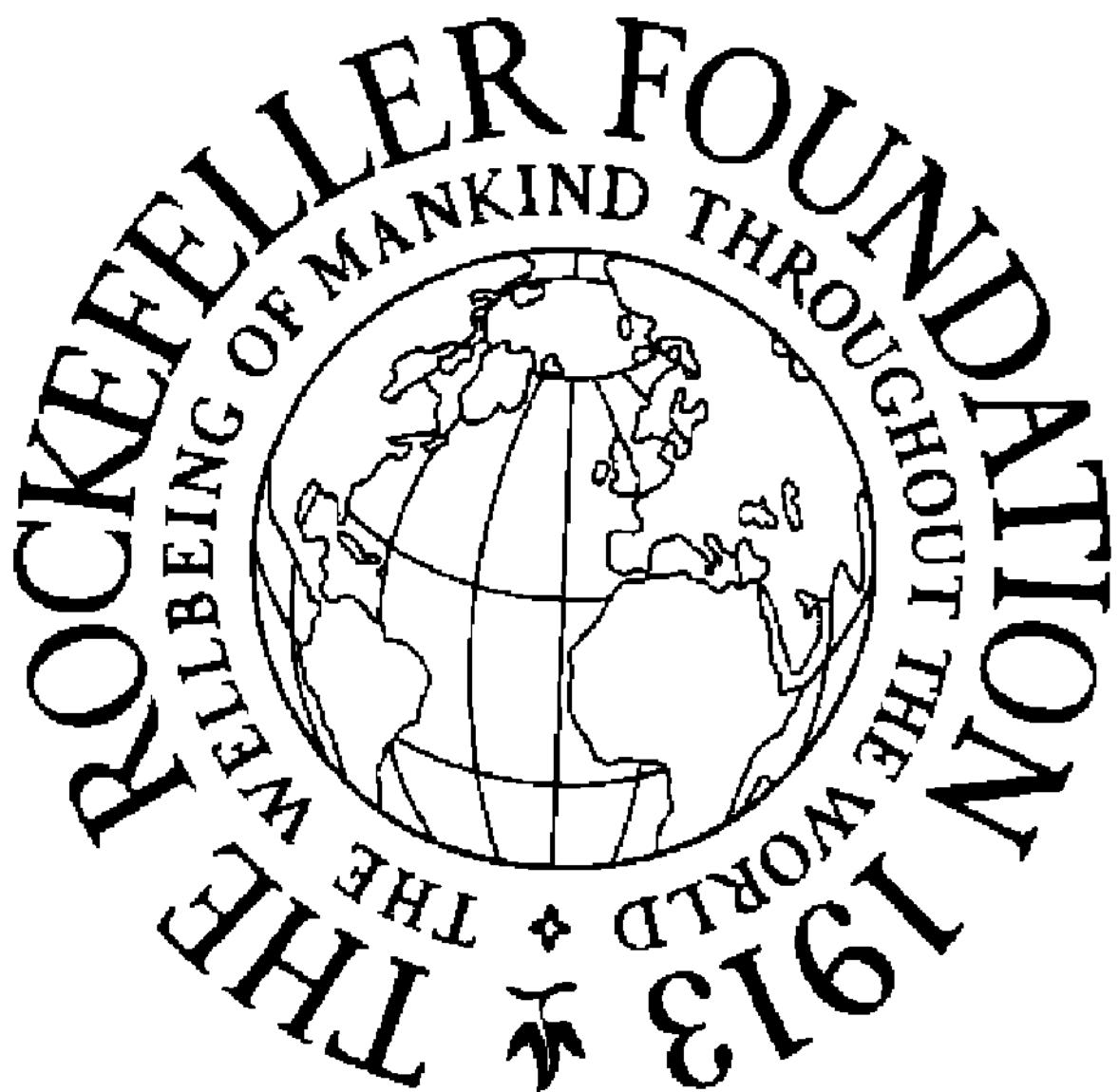
The six United Negro College Fund members of the Atlanta University Center, on adjacent campuses, share central library facilities.

Today the American citizen seeks expression for the additional time which he can call his own, time during which he can devote himself to pursuits of interest to him. Although these may be various they depend to some degree on what is available.

The Foundation believes that very much greater numbers would take a rewarding interest in literature, music, and the creative and performing arts if opportunities for their enjoyment were more readily accessible. Such interests are not only desirable, but necessary if people are to make the most of the leisure opportunities afforded by modern society.

The Foundation for its part is considering involvement not in commercial forms of entertainment, but rather in helping cultural activities take root more deeply in the communities of the nation. Its intention is to attract larger numbers of people to these interests either as a career or as leisure avocation. For the Foundation the means toward these objectives is support for departments of humanities and performing arts in American colleges and universities. These are in their way disadvantaged areas of the university community since they find support hard to come by. Throughout the nation people of dedication and competence are developing, against odds, the musical and dramatic arts for the benefit of those who participate in and those who enjoy them.

Two grants made during the year 1963 illustrate the Foundation's efforts to help raise the standards of excellence in the theatre. The awards reflect the Foundation's belief that both professional groups and universities can stimulate growth and change in the drama. A grant was made to the Actors Studio in New York to develop new plays in the hope of eventually introducing more experimental works of merit into the general theatrical repertoire. Under this plan a script is selected for final polishing by the Playwrights Unit of the studio, which then engages a director and cast to work with the author in a period of intensive rehearsal and revision. The aim is to bring each script to a point where it is fully ready for production, by securing the uninterrupted collaboration of the playwright and the performing team over a period of several weeks. The need of such a plan exists because commercial theatrical management is seldom able or willing to put this pre-production investment into an unproven, experimental play.



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During a rehearsal of an experimental production at the Actors Studio, performers pause to discuss a point with the director.

The fruitful cooperation of universities and outstanding professional theatre groups is being encouraged, in the hope that these joint efforts may have creative significance for the drama as a whole in the United States. A grant to the University of Minnesota will assist the university, which has established close working relationships with the new Tyrone Guthrie Theatre, in establishing a program for playwrights and other professionals under which they are offered the same freedom,

intellectual stimulus, opportunities to work out problems, and other conditions for effective work in a professional environment, which universities have so fully provided for scientists and other scholars.

In the field of music, the Foundation supports a new program within the University of Southern California which during the years to come may have a far-reaching influence on the climate in which music is performed. Perceptive music criticism can contribute to a wider acceptance for established modern composers and assure a welcome for new music forms. The demand by newspapers and other general media for music critics is strong, yet there are not more than one hundred full-time critics in the United States.

The School of Music at the University of Southern California, after successful experimentation, has developed a plan under which five to eight carefully chosen young men will be enrolled for one year in a program that not only emphasizes intensive and broad preparation in musicology and critical writing, but also calls for up to one year's apprenticeship with a major music critic in an urban area to gain practical experience. The proposal has received strong support from leading musicians and critics who see in it a chance to help overcome the present dearth of music critics and to raise the standards of criticism.

The Foundation has watched with attention the development of community cultural centers throughout the United States as effective instruments for stimulating the performing arts. It cannot participate in local ventures, but its hope that such centers will have important roles in aiding America's cultural development was expressed by substantial grants to two institutions with national and international implications: the Lincoln Center for the Performing Arts in New York City and the building program of the National Cultural Center, now known as the John F. Kennedy Center for the Performing Arts, in Washington, D.C. :

The Foundation proposes to find other opportunities to support thoughtful efforts to utilize the cultural dimensions of the American college and university to enrich the life of the community in which they exist. Many colleges and universities have perhaps given too little attention to their potential for the development and enrichment of community life. A great deal remains to be done in this wide area and

the Foundation intends to be helpful where promising opportunities exist.

The Foundation does not exclude from its program the continued support of creative activities in universities in emerging nations with rich cultural backgrounds which would be of interest to other nations throughout the world.

Yajnik Memorial Fountain, at the Royal College, Nairobi, Kenya,
one of the three constituent colleges of the University of East Africa.



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PEOPLE FOR PROGRESS

TRAINED MANPOWER is the key to accomplishment. In the more industrialized nations the need for educated and trained manpower grows apace; in less developed areas the lack of trained men and women is the bottleneck which blocks satisfactory progress toward national goals.

Over the years The Rockefeller Foundation has woven education and training into all aspects of its effort to advance human welfare. This fundamental principle holds for every sector of Foundation program; in practice it is applied through a wide variety of techniques. It is to certain of these techniques and the problems to which they are being applied that the discussions in the following sections of this review are directed.

Viewed from one perspective, the simplest and most direct way to increase the supply of trained manpower is to award scholarships and fellowships to promising individuals for advanced study calculated to contribute most to their professional maturation. The Rockefeller Foundation's program has already given study opportunities to a relatively large number of people at home and abroad, a heartening proportion of whom are contributing professional competence in fields of critical need for their nations.

The Foundation's experience has shown that even an apparently simple fellowship plan is in reality an exceedingly complex process. The complexity begins to appear as soon as training is related to goals. For example, if the goal is to help an advancing nation grow more food or improve the level of public health, then a very large number of individuals will have to be trained in a wide variety of skills and professions. To assume that competence on this scale can be achieved merely through the awarding of fellowships for study abroad is unrealistic. What is needed is a more sophisticated training program in which strategic use of the fellowship process is only one of the vital elements. Joined with it must be the establishment or reinforcement of local institutions of education and research and the strengthening of national

agencies with responsibility for putting new methods and materials into actual use.

In seeking to reach its newly defined objectives, the Foundation is putting greater emphasis on strengthening institutions in the less developed regions where they are so sorely needed. While the award of individual fellowships is continued as an essential tool in the building process, a variety of other procedures which have proved effective in previous experience are also being used. Grants of funds to an institution often represent the simplest and most effective way to help. Sometimes cooperative direct-action projects with participation by Foundation staff members fit best where the need is for demonstrations of what can be done. Very frequently progress can be encouraged by supplying highly trained and broadly experienced professional staff on a temporary basis for specific tasks. It is the Foundation's hope that it can fashion flexible programs to achieve broad goals under a variety of particular conditions. Current activities in this direction are illustrated in the following pages.

TRAINED MANPOWER FOR HEALTH SERVICES

Among the social services required for a modern civilization, medicine in the broad sense of curative and preventive services ranks high in priority in any population. But the development of the fully trained professional, whether physician, nurse, midwife, sanitary engineer, or skilled laboratory expert, takes a great deal of time and a great deal of money. Their tools of the trade — hospitals, health centers, laboratories, sanitary installations, drugs, and diagnostic equipment — are expensive and essential if medical and public health services are to be provided at a level commensurate with modern twentieth century practices. Few, if any, of the developing nations can afford the full complement of professional medical personnel who man the medical services of the developed nations. With limited resources of professional health workers and limited funds to support their services, the developing nations must turn to alternative solutions that will provide a maximum of health services for a minimal expenditure of fully trained personnel and funds.

The magnitude of the problem can best be described by reviewing

the doctor-to-population ratio in the 92 nations for which adequate data are available. In the well-developed nations a ratio of at least one physician to 1,200 people is thought to be essential for coverage of the curative and community health services. And yet only 30, or less than one-third of the nations have been able to achieve this level of medical manpower. The World Health Organization has set a goal of one physician to 10,000 people for Africa — to be achieved within the next decade. Only a handful of African or Asian states have a chance of producing physicians in numbers large enough to establish this ratio in so brief a time.

Unhappily, reliable data on the number of fully qualified nurses, midwives, sanitarians, sanitary engineers, and laboratory technicians

Near the Kasangati health center, Uganda, a visiting medical fellow from Makerere University College takes an electrocardiogram on a schoolboy.



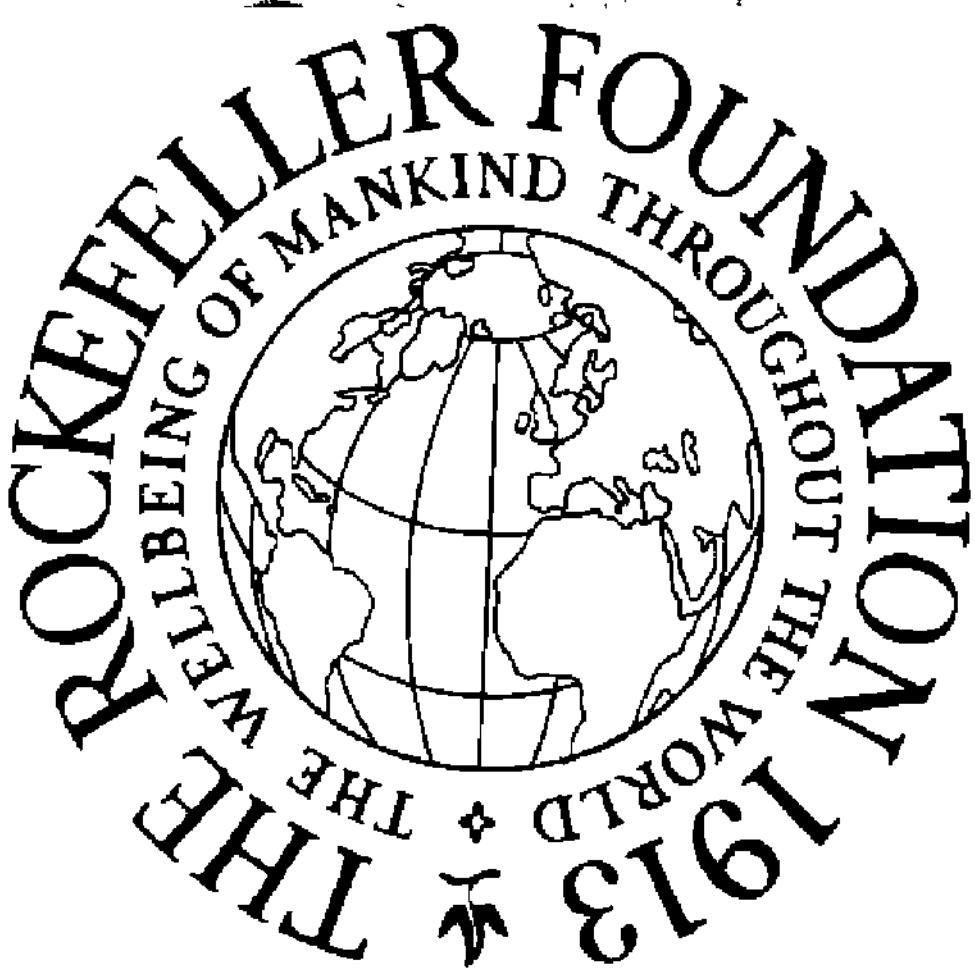
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are not readily available. These professionals are as essential to an effective health service as their colleagues the doctors and must be provided in numbers substantially greater if the health team is to function with any degree of proficiency. Even in the advanced countries these essential elements of the health services are in short supply, and in every underdeveloped country the shortage is desperate.

It is clear that the developed Western nations cannot supply their neighbors with sufficient professional personnel to meet the day to day needs for these medical services. The advanced countries can and are assisting by supplying teachers for medical schools and other professional faculties and by offering opportunities for training in their own university centers. The United Nations specialized agencies and other technical assistance programs furnish technical help for the organization of specialized programs. But the bulk of the burden must be borne largely by a slim cadre of indigenous professional medical personnel. They cannot begin to meet their responsibilities without a well-organized system of medical auxiliaries to supplement and extend their efforts to the entire citizenry.

The auxiliary, in whatever field of medical service, must have sufficient education to grasp the technical essentials of his task and to work if necessary as an independent responsible person with only occasional contact with his fully trained colleagues. In countries with developing social and economic services, other opportunities for individuals with this background are legion and often have the added attraction of service in major urban centers. Competition is keen for the educated person who for one reason or another cannot go on to full professional work in a university. Consequently, service as an auxiliary medical technician must offer a reasonably good salary, an opportunity to advance in the medical services or to additional education, and sufficient creature comforts in rural settings to make life attractive for him and his family. A great deal of study and research is needed to overcome these obstacles and to provide a streamlined efficient medical service.

On the other side of the coin is the fact that the fully trained physician and nurse are educated in a system and reared in a tradition that takes little account of these basic issues. They are, by and large, geared to the theory that certain procedures are sacrosanct and can be performed only by the elite. It is unlikely that this pattern will change



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In the outpatient clinic of the Kasangati health center, Uganda's first female medical graduate examines a child.

appreciably until competent research, based on universities or advanced centers of public health practice, demonstrates clearly that many of the duties of the professional can be delegated to subprofessional personnel with safety and increased efficiency of the health team.

The Rockefeller Foundation over the past fifty years has had an unusual opportunity for contact with these problems. From 1913 through 1950 the staff of the International Health Division carried on programs to establish public health services by training officers of many nations in the art of applying public health techniques and in research in methodology. Extensive studies were made in several countries of the use of ancillary personnel in rural villages based on public health services of the government. Progress was made in establishing patterns

of local health services that were effective up to a point, but the projects lacked certain features to assure continued growth and success.

Since these programs were based solely on government public health agencies, there was no opportunity for contact with centers of medical education where the initial indoctrination in community medicine and opportunities for research could be provided. The conclusion that better programs could be achieved only if they were associated with sound centers of medical education was inescapable.

The Foundation turned to the problem of institutional development in the field of the medical sciences in the 1950's. A program of concentration on a few selected centers in Latin America, Africa, and Asia has evolved during recent years that stresses sound scientific education combined with emphasis on the physician's responsibility for community health as well as individual medical care. As these centers mature, field training and research centers become a reality in which the clinical

A Rockefeller Foundation staff member from the University of Valle visits a home in Candelaria, Colombia.



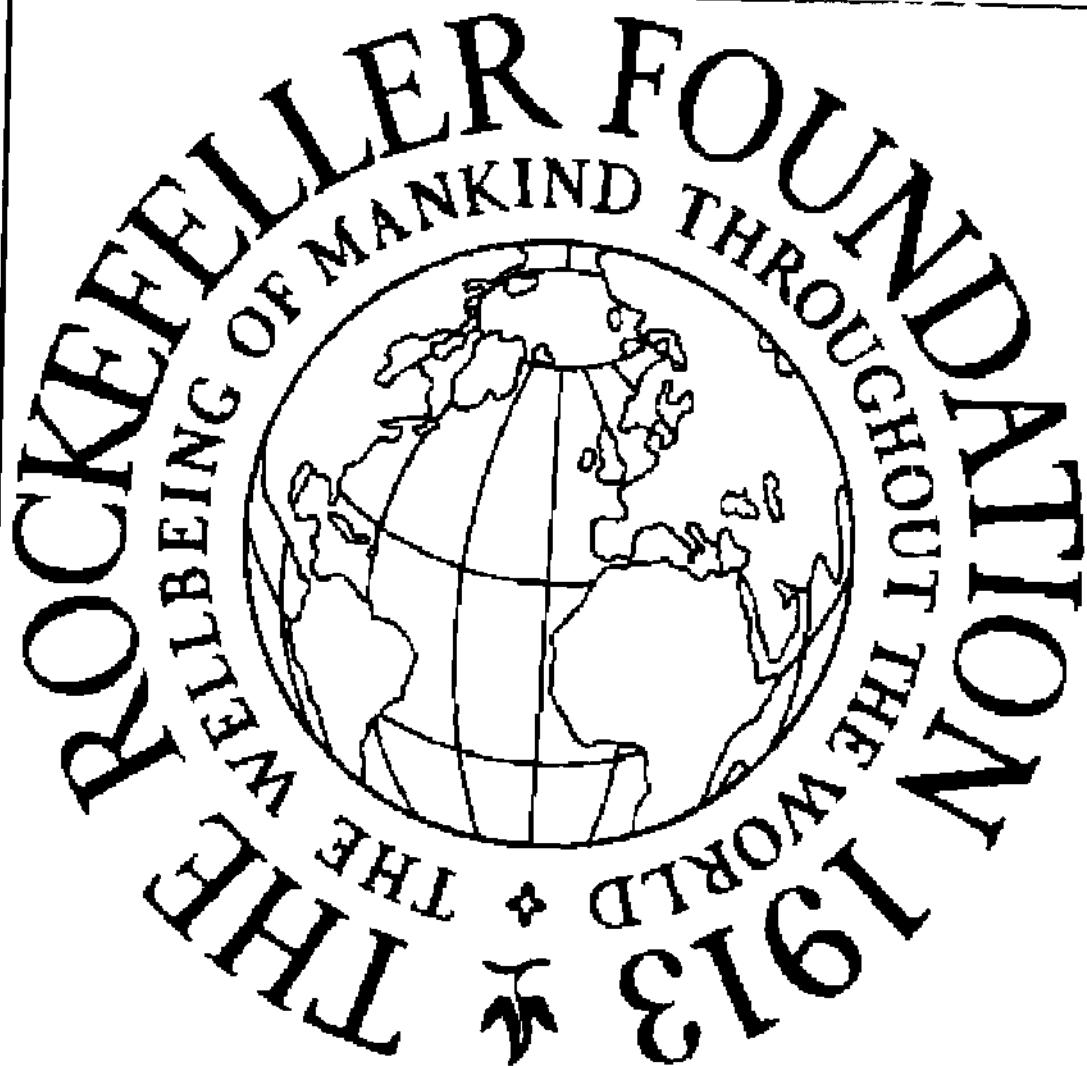
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sections of the medical center work cooperatively with their colleagues associated with community health services through the department of preventive medicine. The goal is to define curative and public health problems and to demonstrate that these services can be operated at a high level of professional activity with a minimum expenditure of professional personnel and money.

Foundation officers are aware of the fact that no single pattern will be applicable to the conditions of each continent, or for that matter to adjoining countries on a single continent. Nonetheless there appear to be basic principles that will be applicable to research and pilot training schemes in this important area of technical development.

Any attempt to train professional or subprofessional personnel to cope with health problems is dependent upon a careful assessment of the flow of disease and of demographic factors in the area that will condition the order of priority in which the health team will attack these problems. Such data are frequently lacking in the developing countries. A first step, therefore, in establishing a center for research in medical services anywhere must be an intensive and continuing epidemiological study of the community.

All the information gathered from these basic studies can be channeled back to the students in professional schools. But one cannot transmit in the classroom and on the hospital ward the knowledge of how to manage the problems encountered in the day to day work of the community health team. If we accept the tenet that modern student physicians gain competence through working with patients, then we must also accept the premise that a professional in the field of community health will best learn the practice of community medicine by serving a clerkship in a training center designed to give him responsibility and to teach him to use the talents of his subprofessional teammates. This must be done in the formative period of professional training if one is to break the tiresome tradition that all medicine, all nursing, all medical services follow the curative pattern of the hospital wards where the major training is obtained. Since most physicians in developing countries must deal in one form or another with community health services, it follows that they must be trained to lead the team. The Foundation has approached the problem from several angles, depending on the local culture and its apparent opportunities and needs.



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At the Casita for the Rehabilitation of Malnourished Children, Candelaria, for which the Candelaria health center provides medical services, a nurse auxiliary bathes a young patient.

In Latin America the supply of physicians is by and large reasonably adequate and the output from current and new schools is sufficient to establish a cadre of doctors for medical care and health services. On the other hand nursing personnel, sanitary workers, and technicians are in very short supply and are likely to remain so for some time to come. One possible solution for providing rural medical services is to place responsibility for segments of rural care on the medical schools.

In the village of Candelaria, in Colombia, the University of Valle assigns first- and second-year residents to a community health center with satellite dispensaries in outlying smaller population groups. Auxil-

iary nurses are trained and used to complement the residents' services. A long-range research plan calls for an orderly study of community health and sanitary needs. A program for training auxiliary community nurses is under way and recruits students from rural areas who have basic primary and some secondary school education. It is hoped that other individuals from the same background and with limited education can be trained in a school for laboratory technicians at the center to perform with competence and confidence the routine outpatient laboratory tests.

In the Candelaria pilot center comparative studies are being made to determine how much care and preventive services one resident can provide using one or more auxiliaries, when he is backed by a top-flight medical center within reasonable distance to care for illness beyond the scope of the rural center.

A long-range goal is to develop better methods for on-the-job training of auxiliaries and to demonstrate that residents can provide basic health services for substantial segments of a rural population with modest ancillary staff commensurate with the financial realities of a Latin American country. Hopefully, any sound center of medical education with large numbers of residents could undertake responsibility for the rural care of populations up to 500,000 or 600,000 without diluting its graduate training program; indeed, such a step would strengthen the program. Any scheme of this type presupposes the existence in the base medical school of a sound program of training in preventive medicine for the undergraduate students before they venture into the rural communities as residents.

The Foundation's approach in Africa is somewhat different from that in Latin America. The number of indigenous physicians and auxiliary personnel is very small indeed, and even with expatriate help the health services must be manned with a skeleton staff for many years to come. Most of the African countries have based their health services on district hospitals staffed by a few qualified physicians who have the dual role of caring for a heavy load of ward patients and outpatients and supervising curative and community health services provided through satellite dispensaries in outlying rural areas.

At one level or another, schools have been developed to train assist-

ant personnel to serve as medical assistants, nursing assistants, and so on, who work both in the hospital and in the rural dispensary or health center. The doctors who supervise their efforts come to the task without basic preparation for administering these services, and many years are required to supplement their trained preoccupation with hospital care by a concern for community and preventive problems.

Recently established indigenous medical schools of the highest academic standards have continued to emphasize the traditional patient-oriented training with little or no instruction in public health or training in the management of large health services. The task in Africa, therefore, is one of maintaining the very high level of clinical training while inserting into a crowded curriculum sound field training in the methods of running a dispersed health service largely staffed with subprofessional personnel.

The Foundation has attempted to assist in this difficult task by providing staff and economic assistance to centers based on the medical faculties of the University of Ibadan, Nigeria, and the University of East Africa. Established government centers near the schools have been expanded to provide housing for students and teaching staff. The basic government facility must also be expanded to provide adequate though limited laboratory quarters for student training and research.

In these programs the basic clinical departments will work in a joint program with the faculties of preventive medicine in teaching the students while they undertake responsibilities for running the various sectors of the rural program and participate in basic epidemiological studies. In this fashion students of clinical medicine will receive orientation and guided experience in the complex problems of a team approach to community care and environmental sanitation.

While serving this basic purpose, the centers can assume the additional role of determining standards for training subprofessional personnel which in most countries of Africa need substantial improvement. By experimenting with various levels of ancillary personnel it should be possible to establish guidelines for government training centers and to provide opportunities for students in these centers to work hand in hand with their future colleagues of the full professional level.

In India the opportunity for such programs is in some ways unique.

The Indian government determined some years ago to establish the All India Institute of Medical Sciences in New Delhi as a central institution for preparing academic personnel for the burgeoning network of medical schools. Here was an ideal opportunity to orient future teachers of medicine in the principles of community medicine while giving sound preparation to the select undergraduate student body, many of whom will follow the footsteps of their teachers into academic work.

As in Colombia, the program in India is based on an established government scheme for medical and preventive care. The core staffing is maintained by interns and registrars who assist the academic staff in teaching while learning to operate a central cottage hospital and health center as a base for care of thousands through satellite centers manned by students and subprofessional personnel. The Foundation, in cooperation with local government and the All India Institute of Medical Sciences, has supported this key scheme with both funds and staff. After several years of trials the project should now become the guiding center for the development of training and research in community medicine throughout India.

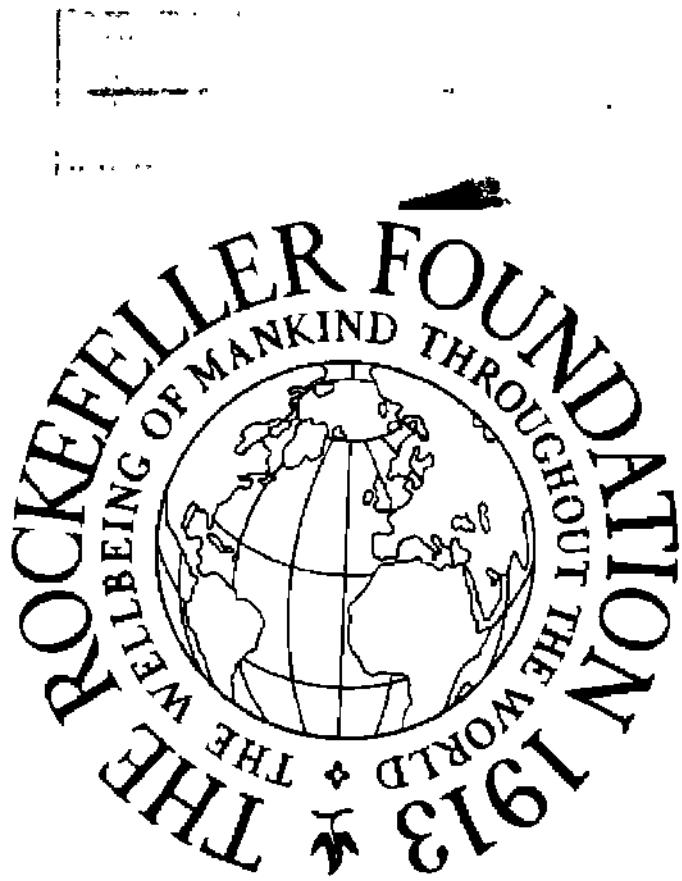
The Foundation hopes that these programs will serve as models for future development of research and training in community medicine and endemic disease in many schools in these areas. The full evolution of the projects will take several years, and in the meantime many countries are going to demand help in establishing new schools to train professional and subprofessional personnel for their expanding health services. Until these countries reach their full economic potential and are producing their own teachers for these schools, the developed nations will have to meet, as well as they can, the needs for teachers and for funds to establish new centers. Teachers of science, medicine, nursing, and environmental engineering are in short supply in the Western nations and will become increasingly so as the West expands its own professional schools to meet the increasing demand for health services. Western countries are already providing major financial support to the developing countries and additional funds must be used sparingly to assure the orderly development of the world without impairing the economic base of the advanced nations.

All countries, large and small, developed and developing, use auxiliary subprofessional personnel to augment their health services. In Europe and the United States, and also in Latin America, auxiliaries have been used by and large to supplement nursing and technical personnel. In the newer nations it has been necessary to use subprofessional personnel for every branch of the health services including curative medicine.

Schemes for training and utilizing such technicians have taken various forms. In some countries they are geared to short-term courses to train individuals with a restricted background of education to carry out set procedures in hospital or in outlying dispensaries. In others the training programs have been more sophisticated, providing several years of instruction designed to produce individuals who can assume substantial responsibility for every aspect of the health services.

In any case, each program is based on the assumption that auxiliary staff will function under the supervision of professional staff. In the

University Hospital, Ibadan: registering at the children's clinic. Faculty and students of the university medical school also cooperate in the work of the government health center at nearby Igbo-ora.



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actual operation of health services manned by a handful of doctors, nurses, and sanitarians, supervision is necessarily scant in most of these countries. Since this pattern of care will have to continue for many years, there will be an increasing need to set uniform standards for training and using such individuals in systems that are realistic and economical. Definitive information on the functions and effectiveness of subprofessional personnel is scarce and must be augmented and correlated with plans for training full professionals.

Proper utilization of subprofessional personnel will not occur until their professional colleagues are convinced by reliable data that they can operate safely at a high level of responsibility. Fortunately, there are examples that can serve as a basis for comparative studies. The Rockefeller Foundation believes that it should undertake to study these problems and to provide guidelines for the advanced nations in their efforts to assist the development of health services in all the countries that need them.

EDUCATION AND THE CONQUEST OF HUNGER

Paradoxically, to feed hungry people remains the principal challenge to society today as it has been for centuries, and this despite the progress in science and technology made over the past hundred years. This challenge is not being met effectively now, nor is a successful answer just around a nearby corner. In the race between increasing numbers of people and the production of food, nutrition is falling behind numbers.

Ultimate success in satisfying human need can come only with the re-establishment of a balance between population on the one hand and resources and their utilization on the other. The prospect hardly seems bright: there are nearly 3.5 billion people in the world today, and the number increases by a million every week. The struggle for the conquest of hunger grows sterner with each new mouth to be fed.

The primitive agricultural systems on which most of the world depends cannot increase yields to match demands, and present yields, vulnerable to the traditional hazards of drought, pests, and diseases, are not reliable. No single or simple procedure can guard against these uncertainties nor increase total harvests; improved agricultural tech-

nologies must be applied in informed and intelligent combinations. In the combination must be seed of higher yielding, disease-resistant varieties, better planting and cultivation practices, optimum use of fertilizer, timely application of safe and effective pesticides, rational water management, more efficient tools and implements, better methods of harvesting, storage, and shipping — all of which must be of tested and demonstrated effectiveness in the particular environments where they are to be used.

The role of education in modernizing the world's agriculture is obvious. Only educated people can operate the sophisticated systems that characterize agriculture in the more advanced countries. Farmers must understand what they are doing and be open-minded in listening to suggestions for changes. They must be assisted by an organized corps of professional specialists ranging in abilities from mechanics and technicians to scientists capable of devising better materials and practices. To function effectively the specialists must have behind them organized structures of governmental and private agencies and institutions dedicated to increasing and disseminating knowledge and to educating the oncoming generation. In the United States it took nearly a hundred years to accumulate the knowledge, train the people, and build the organizations upon which agricultural prosperity rests. Mexico and a few other countries have moved an astonishing distance toward this goal during the past twenty years. The momentum of events puts even greater pressure on time in many other countries where failure to improve nutrition and health promptly would be disastrous.

In its agricultural sciences program The Rockefeller Foundation has sought to contribute to general education and to agricultural education in particular in a number of different ways. Its earliest effort was to give individuals of promise, who had completed their undergraduate training, practical experience in scientific agriculture under the direction of Foundation staff members. Begun in Mexico in 1943, this method has become the cornerstone of the other cooperative projects established in Colombia and Chile in Latin America, and in India. To supplement this training experience, formal scholarships and fellowships are awarded to selected young men and women for advanced study, usually in foreign universities and usually for work leading to



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Their Excellencies Adolfo López Mateos, President of the Republic of Mexico, and Julián Rodríguez Adame, Minister of Agriculture, look on as Dr. J. George Harrar, President of The Rockefeller Foundation, adds his signature to the agreement establishing the International Center for Corn and Wheat Improvement. The signing ceremony took place in October, 1963, in Mexico City.

The center, which will be operated jointly by the government of Mexico and the Foundation, will concentrate on international projects for the training of agricultural scientists and for the improvement of two basic food crops.

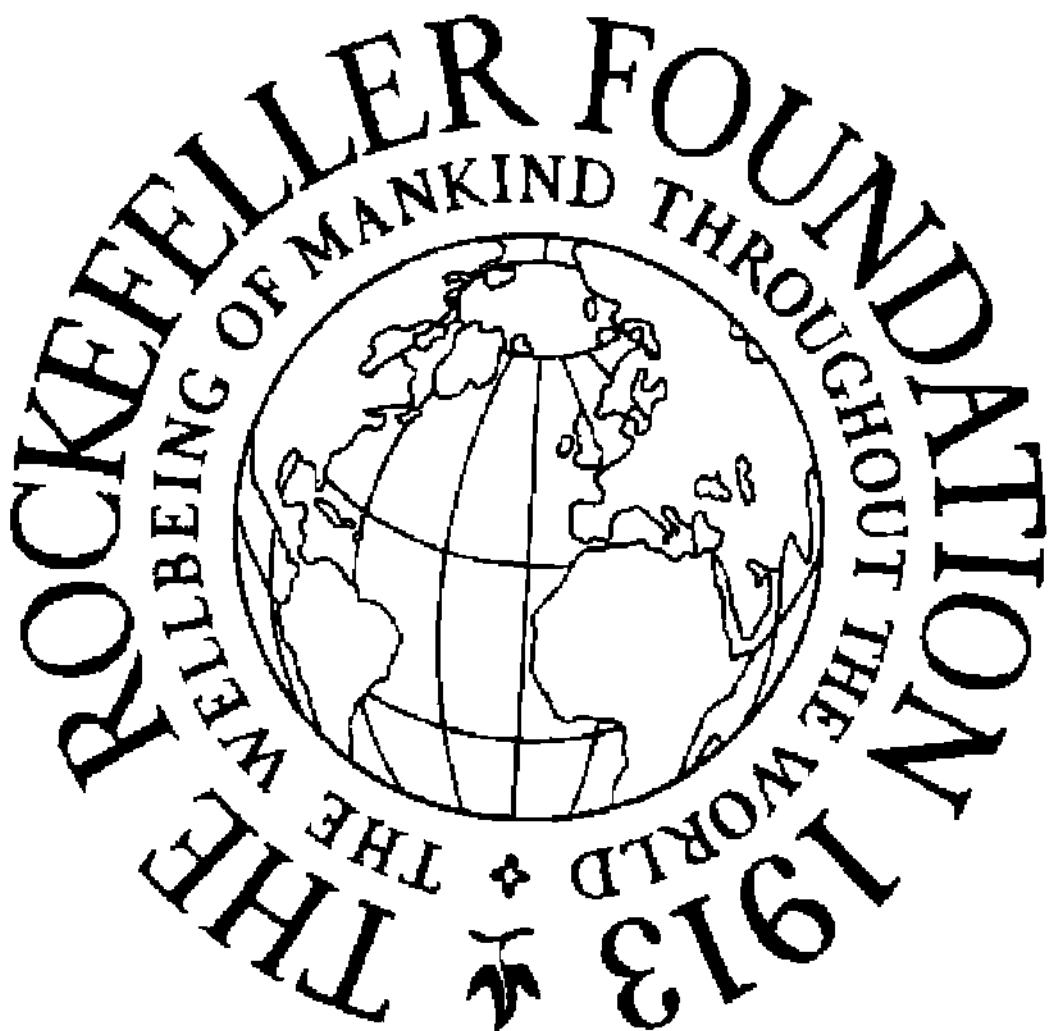
graduate degrees. Some 1,300 such study awards have been made, and in practically every instance the recipients have returned to their own countries to work professionally in agriculture and allied fields.

In 1963 funds for the support of the Foundation's scholarships and fellowships in agriculture were increased by 50 per cent to a level of \$1.5 million. During the year a total of 318 students from 27 countries were supported by the Foundation for advanced study at 46 institutions in the United States and other countries.

The other types of aid are directed to the institutions that serve agriculture in its practical aspects, such as official ministries and departments of agriculture responsible for research and its dissemination, and in its educational aspects, such as colleges of agriculture and other research and training organizations. In all the countries where The Rockefeller Foundation has cooperative agricultural units, an ultimate objective is the strengthening of institutions and research centers as permanent bases for continuing progress in the advancement of agricultural science and education. As they develop, these institutions serve not only the continuing needs for research, education, and extension in the host country but also furnish patterns of organization that may be utilized in other advancing countries with similar physical, economic, and social characteristics.

The Foundation has recently cooperated in establishing two institutes for agricultural research and training, which because they have certain features not usually associated with this term may prove to be of value in setting patterns for similar ventures elsewhere. One is devoted to the improvement of corn and wheat on an international basis and is located in Mexico; the other concentrates on rice and is in the Philippines. Each is situated on or adjacent to the campus of a college of agriculture that offers high-quality graduate work, and through this association can combine research training with course work leading to advanced degrees; both attract students from other countries where the crops concerned are important; and both conduct international crop improvement research projects.

The International Center for Corn and Wheat Improvement is to be located at Chapingo, the seat of the National School of Agriculture and of its Graduate School. An outgrowth of the cooperative agricultural program that has been conducted in Mexico for over two decades,



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The International Rice Research Institute, Los Baños, the Philippines: experimental plots seen from the central plaza.

the new center will accelerate progress in the improvement of these two basic crops in other countries also as Mexico joins in this new international cooperative effort. The Foundation has appropriated \$1 million for the costs of operation of the institute over the next four years.

The International Rice Research Institute, which began operation in early 1962, is now fully staffed and has under way a comprehensive and integrated program of basic and applied research on all aspects of rice production. The institute, located 40 miles south of Manila on a site adjacent to the College of Agriculture of the University of the Philippines, has now completed its buildings and possesses one of the best equipped and most modern facilities to be found in Asia. The

senior scientists on the institute's staff are members of the university's Affiliated Graduate Faculty and serve on advisory committees for institute trainees, many of whom are registered in the graduate school of the College of Agriculture. Funds for the construction of the institute's buildings and for some of its international activities were supplied by The Ford Foundation; costs of operation are borne by The Rockefeller Foundation.

The group of graduate-level trainees at the institute increased in 1963 from 27 to 45, and it is expected that in another year the figure will reach 60, the number provided for in the original plans. Presently the trainees come from Rice Bowl countries; it is anticipated that a few may be accepted from Latin America and Africa in future years.

The Foundation has also assisted in the establishment of two graduate schools of agriculture, one in Mexico and the other in India.

In Mexico the Graduate School of the National School of Agriculture at Chapingo was established with Foundation support in 1959. Sixteen master of science degrees in the major agricultural specialties were awarded in 1963. Some 60 students are presently registered. The Post Graduate School of the Indian Agricultural Research Institute in New Delhi, established in 1958 with Foundation cooperation, has an enrollment of more than 400 students, including 12 from other Asian countries. About 45 per cent of them are candidates for the Ph.D. degree; the rest for the master of science degree. By the end of 1963 a total of 77 Ph.D. and 305 M.Sc. degrees had been awarded.

As part of its university development program, the Foundation is furnishing support to undergraduate and graduate faculties of agriculture in the Philippines, Thailand, Nigeria, and East Africa. These ventures, only recently initiated, will come into measurable productivity in the next few years.

Research and Training in Latin America

These recent developments in the Foundation's agricultural program have evolved out of an experience of twenty years in which, as already noted, research directed to the improvement of food crops has been intimately associated with the training of young people. This pattern is based on the assumption that experimentation is most meaning-

ful when the participants can see clearly the importance to their own countries of the results they are obtaining. Their interest is likely to be more consistent when they can also have assurance that agricultural research and its corollary fields offer rewarding career opportunities on a long-term basis.

Several types of results have flowed from the linking of research to training in the Foundation's cooperative programs. For one, the corps of competent, well-trained professional agricultural scientists in the host countries has steadily increased in size. In the earlier years of the program, Foundation staff members personally led the research projects. In later years, as local nationals acquired skill and experience, the direct administration of the projects could be turned over to them.

Latin American and Indian genetic materials are being used in Thailand in a maize improvement project of the Ministry of Agriculture and Kasetsart University, to which the Foundation contributes technical consultancy and some financing.



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Foundation staff could then assume advisory roles or be freed for assignment to other areas. The take-over process is most advanced in Mexico, and is steadily gaining in Colombia, Chile, and India.

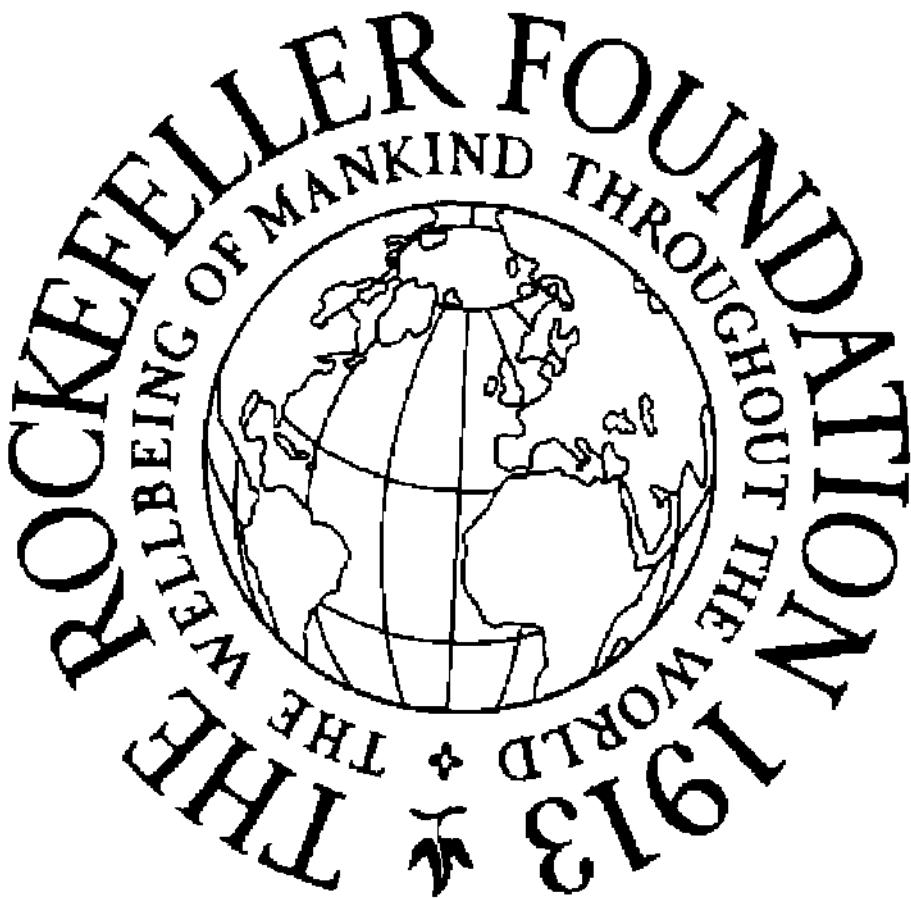
For another, accumulated research results, translated into terms which farmers could understand, have had measurable impact on the yields of the basic food crops in the countries concerned. Larger harvests are a powerful argument for increased popular and governmental support of research agencies.

In Mexico, for example, research in wheat improvement continues to be a significant factor in the economy; in 1963 the national wheat harvest reached 1,930,700 metric tons, enough to permit a substantial carry-over of 300,000 tons. Numerous hybrid corn varieties, each tailored to the requirements of particular climates and regions, have also made Mexico largely self-sufficient in the production of the grain that still feeds a majority of her people. In Colombia, total yields of corn, wheat, and beans are increasing steadily and livestock production of all types is becoming more reliable. In 1963 Chile's 1.2 million ton wheat harvest met domestic needs for the first time in recent years. Improved wheat varieties from the cooperative programs in Mexico, Colombia, and Chile are proving productive in Africa and in several Middle East countries. Research on potato improvement in Mexico and Colombia is stabilizing previously erratic production of this important food source, and has been extended to other countries through an international program with direction and coordinating leadership from Mexico.

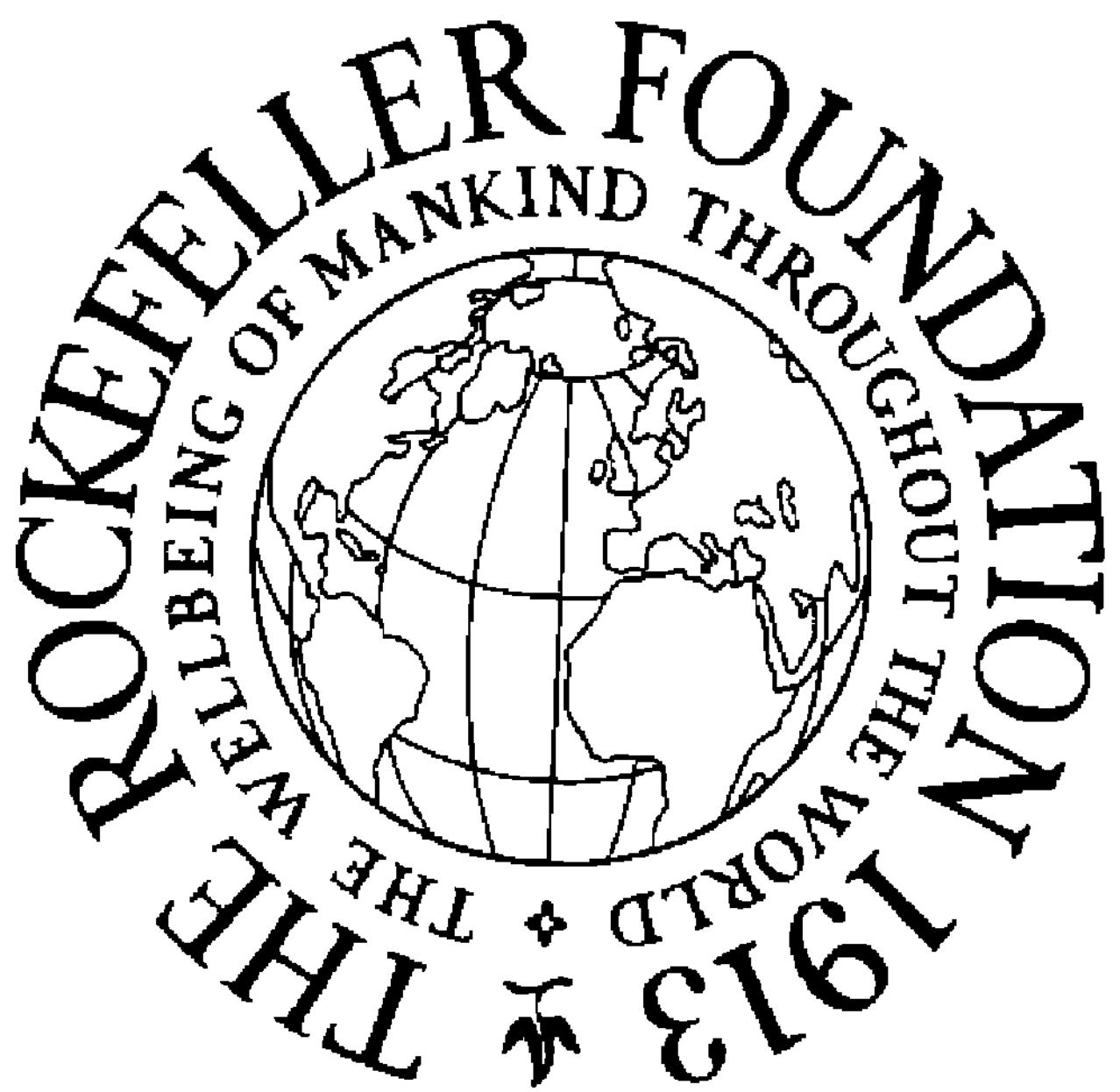
The increased resource of trained manpower in all the important agricultural specialties has also made possible an evolutionary progress in the structure and functioning of the agencies concerned with agricultural advancement. Previous reports have chronicled the growth and success of the cooperative research and training unit that began in Mexico in 1943, and the increase in manpower which made possible the creation of the National Institute of Agricultural Research of the Ministry of Agriculture. In the institute are merged all the plant research activities of the ministry; its unified administrative structure is completely under Mexican leadership. In 1963 a new advance was made in the decision to proceed with the construction of additional buildings so that the research institute, the federal extension service, and the

International Center for Corn and Wheat Improvement could be located together on the campus of the National School of Agriculture at Chapingo. Both the graduate and the undergraduate divisions of the school will also benefit from the construction through the inclusion of a new library, a commons hall, dormitories, and faculty and staff housing. The plans for the construction have been approved by the Mexican government and ground will be broken early in 1964.

In Colombia, where cooperative research and training began in 1950, various agricultural activities have been consolidated into a new entity, the Agricultural Institute of Colombia, administered and staffed by professionally trained Colombians. An important feature of the new organization will be the building and administration of an agricultural center at Tibaitatá, the national experiment station near Bogotá. Here it will be possible to give combined attention in a single location to graduate education, extension training, and research on food plants



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At the national experiment station near Bogotá, seed of new wheats is packaged (above) for testing at other stations throughout Colombia.

Dwarfed corn plants (left) developed in Mexico are being studied in a novel approach to securing larger and more reliable harvests.

and livestock. The institute was authorized by Colombian law in 1963 and a director and other principal officers have been selected. The research unit in the Ministry of Agriculture with which the Foundation cooperates has been transferred to the institute. Funds for financing the Tibaitatá center have been furnished by the Colombian Development Corporation.

In Chile the Minister of Agriculture recently requested that the Foundation assist in the formation of a special review team to study the organization and functions of an agricultural institute to provide leadership in agricultural research and extension on a national basis. The team completed its investigation in early 1963 and its report is serving as a basic guide for the development of a center or institute which is expected to materialize in 1964. The Foundation's cooperative unit in Chile, which started work in 1955, has concentrated on the improvement of wheat — with results already mentioned — and on studies of pasture grasses and legumes as a basis for improvement in livestock production. A good deal of attention has also been given to building up the physical facilities essential for agricultural research, and excellent experiment stations now serve the central and southern regions which are the country's major agricultural reliance. The training aspects of the research projects are conducted largely in cooperation with Chile's four agricultural colleges. At the experiment stations, and often under the supervision of program staff members, some forty to fifty students each year plant and analyze the experiments upon which their graduation theses are based.

Agricultural Education and Research in India

Until 1956 The Rockefeller Foundation's cooperative programs in agriculture, in which its staff members participate directly, were all located in Latin America. In that year the government of India invited the Foundation to establish a joint program in that country which would have two major objectives: to help increase the number of agricultural specialists trained in modern research and crop improvement methods, and to increase the production of two important cereals — maize and sorghum — through practical demonstrations of crop improvement methods in action.

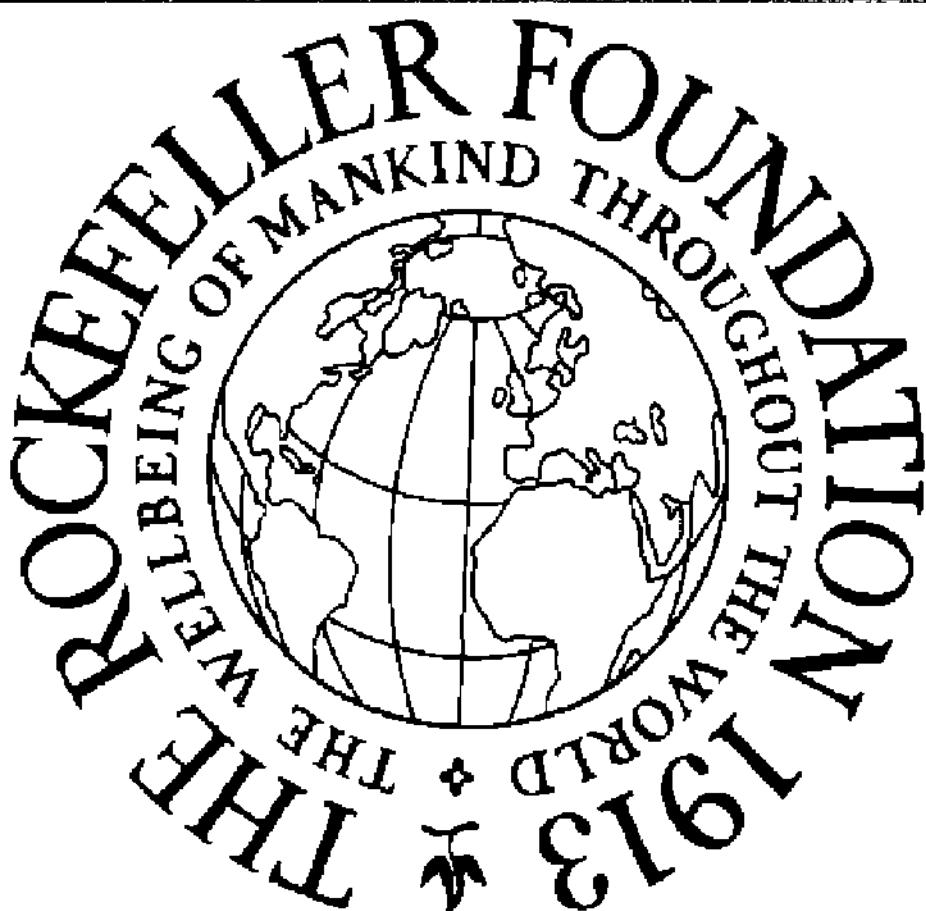
Indian educators and scientists had realized almost from the time of independence in 1947 that the existing research and educational structures were not proving effective in increasing agricultural production. Research was not directed toward the solution of practical problems that inhibit yields; it was conducted by uncoordinated national and central agencies specialized on various commodities. Colleges of agriculture functioned primarily to train men for government positions; they usually had no responsibility for research and neither taught nor engaged in extension. The courses they offered, because of their affiliation with universities, were prescribed by administrators who had little appreciation of the specific needs of agriculture.

After several studies by groups of eminent educators and agricultural experts, the government of India decided to foster the establishment of a new type of agricultural university to be sponsored by state governments, and appointed an advisory committee whose mission was defined in these words:

The urgency of bringing about a rapid increase in food production in the country necessitates a re-examination of the existing patterns with the aim of bringing about the greatest possible efficiency and effectiveness of the organizations serving agriculture. It is apparent that there is a need for establishing much closer relationships between research, teaching, and extension programs which is not possible under the existing arrangements. It is with these aims in view that the concept of the Agricultural University has been developed.

In the meantime, under the 1956 agreement with the government, The Rockefeller Foundation undertook to assist the development of a Post Graduate School at the Indian Agricultural Research Institute, New Delhi. It was the hope that this graduate school could supply a significant portion of the teachers, research leaders, and extension specialists needed to staff the new agricultural universities and the government agencies concerned with agricultural improvement.

The formulation and installation of the new graduate curriculum proceeded with careful deliberation. Suggestions for changes in the teaching program were thoroughly reviewed and considered by the Indian professors and were activated only after agreement by the Faculty Council. When the graduate school was authorized as an au-



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Land leveling and development at the experimental farm attached to the Punjab Agricultural University, Ludhiana, India, one of that country's new state agricultural universities.

tonomous degree-granting institution by the proper accrediting authorities, the new curriculum, embodying many of the features of graduate level education in land-grant universities in the United States, went into effect in October, 1958. Its success in the intervening years has been mentioned previously.

Substantial progress has been made in setting up several of the planned state agricultural universities, and legislation for the establishment of a number of others is well advanced. In Uttar Pradesh and the Punjab state agricultural universities are in operation. At both, excellent experimental farms provide facilities for practical experience on the part of the students as well as for the regional improvement work on food crops. The Rockefeller Foundation has aided the creation of the experimental farms and has encouraged their designation as regional centers of the maize and sorghum improvement programs.

The agricultural university program is receiving enthusiastic endorsement from leaders in the central and state governments as an essential element in meeting the critical problem of skilled manpower — “educated manpower willing to work on the land with the farmer and dedicated to the service of the farmer.”

The government of India hopes to have an agricultural university in each state by the end of the Fourth Five-Year Plan, in 1971. Questions have been raised about the number of agricultural universities that should be established. If one keeps in mind the fact that 68 land-grant institutions supplied much of the leadership for agricultural development in the United States, it does not seem unreasonable for India to plan for at least 15 to serve essentially half the land mass but about the same agricultural acreage, and a population about 2.5 times that of the United States.

A special effort has been made by the Foundation to use the crop improvement research projects as a means both of helping to establish a pattern of effective cooperation between the agricultural agencies of the central and state governments, and of linking practical field work with students' classroom and laboratory experience. As previously indicated, a specific effort was made to locate the regional research centers at state institutions that have responsibility for research and education and with which extension programs may eventually be associated. The possibility that an agricultural university for the state of Uttar Pradesh might be established at the Tarai State Farm was taken into account in 1957 in choosing that location for the regional center for the Gangetic Plain; maize improvement is now a major research interest of the experiment station at that university. The cooperative research project in the Punjab was shifted to Ludhiana when the agricultural university was established there. The cooperative maize and sorghum schemes are similarly tied into the colleges of agriculture at Coimbatore, Hyderabad, and Dharwar, where it is anticipated that state agricultural universities will be established in the future.

Both the maize and the sorghum-millet improvement projects are sizable undertakings, having between them 23 research centers and 175 technical personnel, strategically located in the main agricultural regions of the country. Between these projects and the Indian Agri-

cultural Research Institute in New Delhi there is a steady interchange: graduate students from the institute going to the experiment stations for experience in field work, and station personnel going to New Delhi for advanced training in various specialties.

The work with maize, begun in 1957, has already resulted in the creation of seven adapted, high-yielding, double-cross hybrids. Arrangements are well advanced for the formation of a privately owned and operated company to multiply and distribute seed of the new varieties and to handle seed of other crops as it becomes available. Selections of superior sorghums and millets have been made from varieties systematically collected all over India and from other countries; the breeding of still better varieties is in advanced stages. Administrative and technical responsibility for both projects is progressively being transferred to Indian scientists.

The success of the crop improvement projects has prompted the government of India to investigate whether similar patterns might not be advantageously applied in other agricultural problem areas. At the request of the government, the Foundation supplied funds for a review team which studied the further improvement of research, education, and extension, giving special attention to ways of integrating work in the three areas and to the coordination between the states and the central government in research. The team completed an initial review in December, 1963, and its recommendations are under study by the appropriate authorities.

In the foregoing discussion the focus has been on the Foundation's belief in the critical significance of the educational and training process for the eventual conquest of hunger, and on the various methods found useful in implementing this belief. The accomplishments described result to a major degree from the abilities and energies of the young men and women who have improved their knowledge, skills, and experience through the Foundation's training program. But the most important result demonstrated by the entire operation is its generative power — the way it has succeeded in stimulating local enterprise and endeavor. More and more the projects described are being thoroughly nationalized. They are growing and improving because of their own scientific merit and economic benefit, and because of the

increasing numbers of qualified teachers, investigators, and extension specialists they can deploy for the effort. When the conquest of hunger is achieved, the victory will be won by the energy and dedication of trained people in each country. To aid them in this endeavor is the aim of the Foundation's assistance.

DEVELOPING LEADERSHIP IN AFRICA

The universities evolving in the new nations of Africa represent a significant amalgamation of differing traditions of higher education. Having been founded, for the most part, within the past two decades, the African institutions exhibit more clearly, perhaps, than those in many other developing countries the impress of the different traditions. British, French, and Belgian educators were the first to aid in shaping their organization and curricula; more recently, Americans, Canadians, and others have widened the partnership.

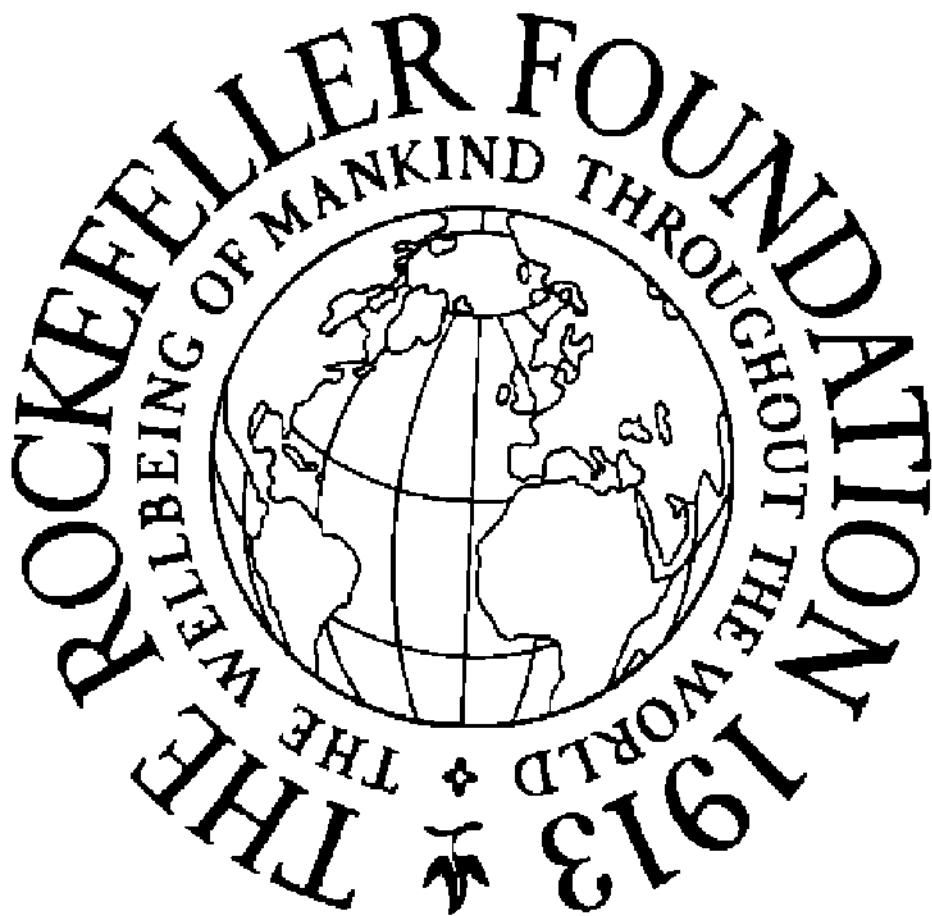
Common to these educational traditions is the central role assigned to the liberal arts as fundamental to the preparation of leadership among an informed citizenry. In several of these traditions, the liberal arts are also regarded as an essential foundation upon which specialized training in the professions must rest. Young people learn to think objectively and clearly, to distinguish between fact and prejudice, to weigh evidence, and to understand more deeply their nation's history and culture and that of other civilizations. A student well grounded in the liberal arts develops habits of mind that serve him well in whatever career he pursues. He gains a cultural and intellectual reserve on which he can draw for the future.

Education in African universities is also stressing another feature. African education must be related to the needs of the people. It must touch the live problems and pressing concerns of local societies. Studies must be relevant to questions that Africans are required to answer. These demands call for a curriculum that does not overlook topics that have urgent meaning for Africans; the classroom examples chosen for discussion must include some of immediate concern to them. Training at its best has always stressed issues of enduring importance. Thus, the historic tradition of the liberal arts and the central issues of present-day African life are consistently and integrally related.

African leaders who share a lively interest in higher education are joining to help the universities succeed. In governmental ministries and in universities, these leaders are bending their efforts to create strong educational systems tied to the requirements of the time. The need is not only for men well trained in the specialized professions but also for men who can make wise and sensible decisions in government and business. Someone must train the teachers, design the curriculum, and shape the educational structure that others can use and follow. Historically, throughout the world, liberal arts institutions have done this job and there are reasons for believing they can do it in Africa.

In implementing its goal of strengthening centers of learning in emerging countries, The Rockefeller Foundation has been working

The entrance to the Law Library at the University College, Dar es Salaam, Tanganyika, a constituent college of the University of East Africa.



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with a few key institutions in important regions of the world. At several of these institutions the Foundation has been cooperating with particular faculties for the past decade or longer — notably those of medicine, nursing, agriculture, and veterinary science. Similar cooperation with faculties of arts and letters, although a much newer undertaking, is well under way at several African institutions, one of them being the University of East Africa.

The University of East Africa is an imaginative experiment in educational federation among three independent states; it came officially into being in June, 1963. Educators and government officials in the three countries recognized that while the costs of a university offering full graduate and professional training were beyond the resources of each individual state, they could, by pooling resources and minimizing duplication, achieve maximum results. The oldest of the university's three constituent units is Makerere University College in Kampala, Uganda, which began university-level teaching shortly after the second World War. The second unit, the Royal College in Nairobi, Kenya, was advanced from a technical school to a university college in January, 1961. The youngest of the three, the University College in Dar es Salaam, Tanganyika, launched its program with a law faculty in 1961 and will begin courses in the basic arts and sciences in July, 1964.

The administration is making a conscious effort to orient the development of the university to the needs of the area. During the past year both Makerere and the Royal College have introduced a new East African syllabus, which draws on but expands the London degree requirements. The university intends to introduce more courses designed to serve the needs of the area and to prepare its students better for the roles they will play in the newly independent states. At present the Foundation is giving assistance to almost all faculties in the three colleges comprising the University of East Africa.

The influence of the university is already spreading beyond the three countries which support it into the region as a whole. Besides students from Uganda, Kenya, and Tanganyika, young people are enrolled who come from Zanzibar, Nyasaland, and the Rhodesias, and in addition to Africans there are others of Indian and Pakistani origin.

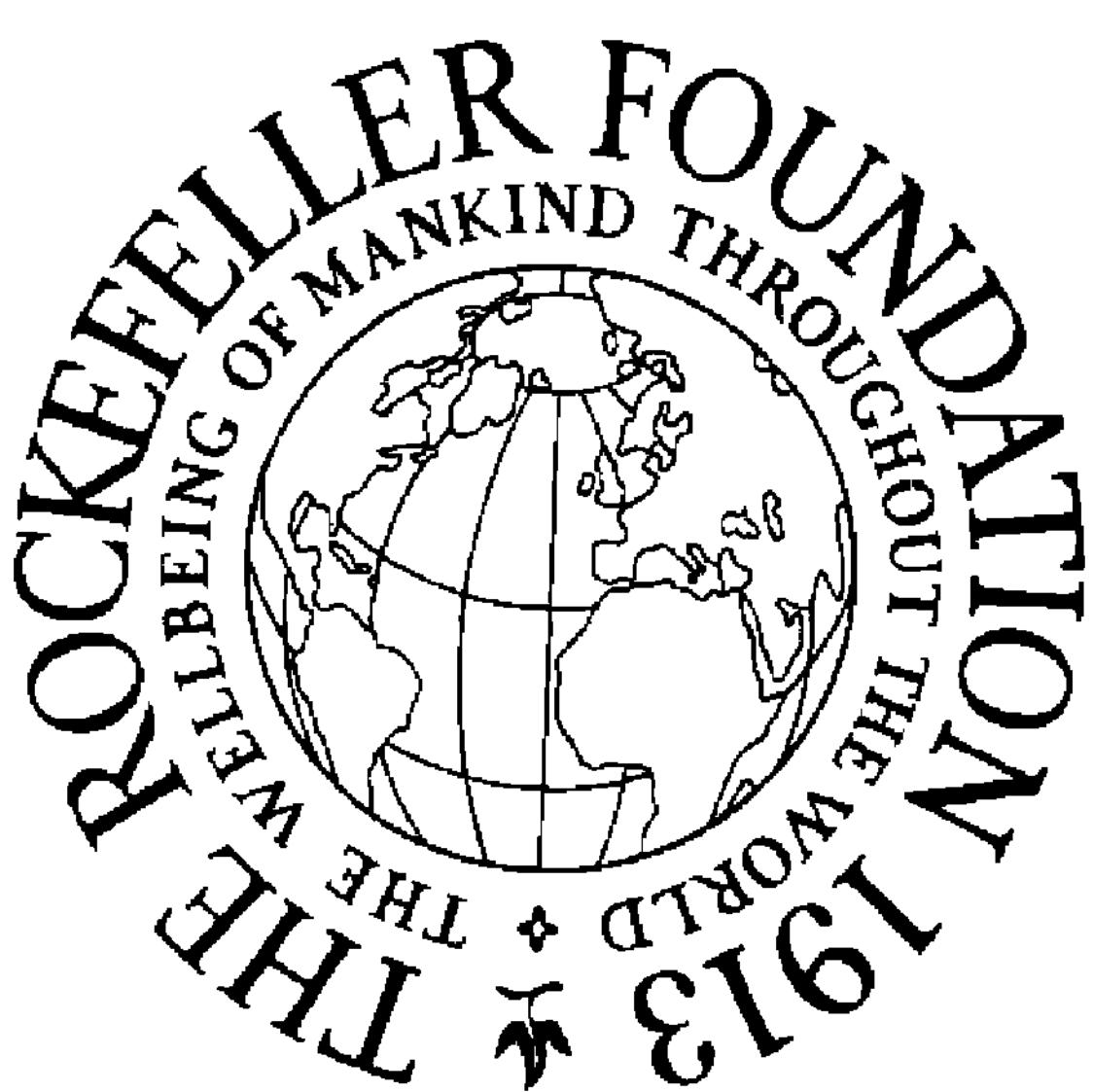
The long-range aims of the university have been unofficially described as follows:

First, to establish an integrated and nonduplicating program that reconciles the ambitions of the three colleges of the university. Curricula in medicine, nursing, agriculture, and the basic arts and sciences will be offered at Makerere. Engineering, veterinary science, and commerce will be concentrated at the Royal College in Nairobi, in addition to the basic arts and sciences. The University College in Dar es Salaam will specialize in professional training in law and will also teach the basic arts and sciences; a future possibility is African and Islamic studies. Each of the three colleges will in the long run have a viable faculty in the basic arts and sciences, but will not duplicate the professional schools supported by all three countries. Duplication is likewise being avoided in some of the more specialized undergraduate fields. Both Makerere and the Royal College have schools or departments of art, but art students may spend two years at one and then transfer to the other campus for courses not offered by the former.

Second, to relate research closely to teaching.

Third, to relate university activities to the aim of meeting the most urgent evident needs of the new East African countries and thus to encourage strengthened government support.

A few years ago almost all faculty and administrative personnel at the institutions comprising the university were expatriates. Coincident with events leading toward the political independence of the three territories, the colleges realized the importance of searching out and appointing qualified East Africans to both the administrative and academic staffs. It was also realized that because of the limited number of positions open in the faculties of each institution, serious administrative difficulties would lie in the way of appointing Africans to positions already held by expatriates. Foundation assistance is enabling the university to appoint qualified Africans to teaching and administrative positions through the mechanism of supernumerary appointments, with the guarantee that individuals engaged in this manner will be absorbed into budgeted staff positions as openings occur. In addition to supplying funds to make the appointments possible, the Foundation has assisted the university in locating and recruiting Africans for the positions.



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First-year students in economics consult informally with their instructor following a class at the Royal College, Nairobi.

In planning for the establishment of undergraduate courses, the University College in Dar es Salaam started considerably later than the other two. To prepare for the opening of the Faculty of Arts, the Foundation responded to a request for assistance to enable the college to engage some of its leading faculty members (equivalent to departmental chairmen) a full year in advance of the time they will assume teaching responsibilities. In this way, the University College has succeeded in attracting senior academicians who are able to pursue their

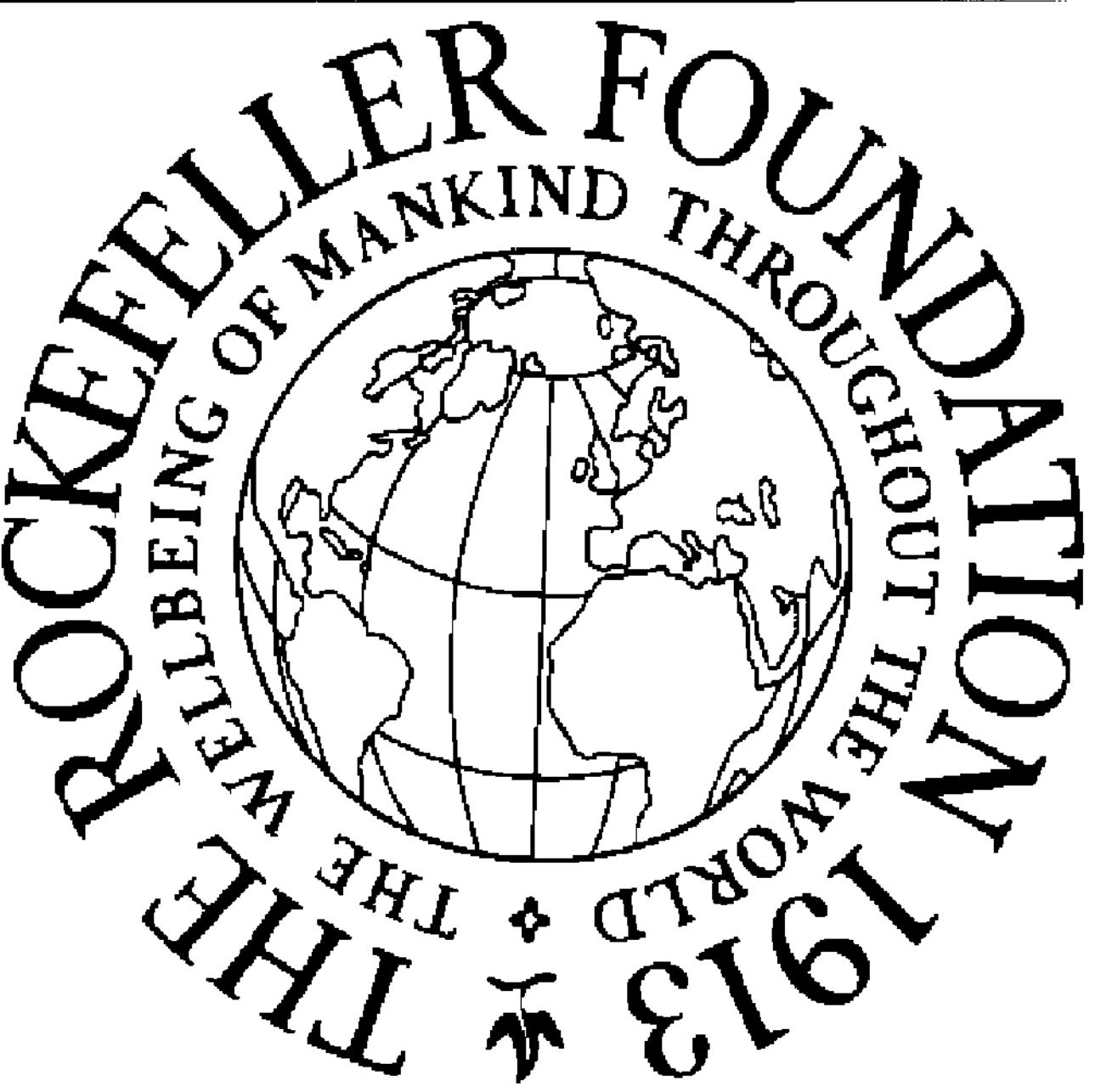
own research interests while planning the syllabus. With financial support for this plan, the principal of the University College has filled the chairs of history, literature, linguistics, and economics, and sound preparation is being made for the opening of a full program for the academic year beginning July, 1964.

In addition to these regular staff positions, the university has requested Foundation assistance in providing for visiting professors in specialized fields who can be of service to one or more of the institutions comprising the university. Help of this type has proved invaluable in the field of international relations and political science. A number of scholars of international standing have lectured at Makerere and Dar es Salaam, and at Makerere the result has been that a regular academic program in international relations is now being introduced.

A similar activity is taking place in the broad field of Islamic studies. Islam has played, and is playing, an important role in East Africa, but no formal courses have been offered in Muslim history, religion, or jurisprudence. During the summer of 1963, the Foundation made it possible for the university to invite one of the world's leading scholars of Islam to visit East Africa to lecture and advise the university on the development of studies of the different aspects of Islam. Makerere now plans to offer courses in Islamic history in the Department of History, and in Muslim theology in the Department of Religious Studies. Courses in Islamic jurisprudence at the law faculty of the University College in Dar es Salaam are projected. The Foundation has also awarded a scholarship to an East African to pursue graduate studies in the religious aspects of Islam.

In the general field of university library development, the Foundation has encouraged further cooperation among the three separate institutional libraries and has assisted materially both with the acquisition of basic collections and with interlibrary services. It has also aided in steps being taken to introduce a centralized library training program keyed to the needs of the university's libraries, and in the training of East African bookbinders at the University of Khartoum.

The picture on the opposite page was taken in the library of the Royal College, Nairobi.



Photograph Excised Here

One tool the Foundation is using more and more is the provision of human "capital" to help the colleges achieve their goals. As part of the university effort to stimulate the teaching of economics and research on the problems of economic development, two members of the Foundation's staff have been assigned to Makerere, one serving as chairman of the Department of Economics and the other directing research on East African economic development problems at the East African Institute of Social Research. Assistance also has been given to research in economic development at the Royal College. These new programs in economics are intended to demonstrate that economics can be made operationally relevant to meet the needs of emerging societies.

The group at the East African Institute of Social Research includes three young Africans who have had advanced training which they are now applying in significant studies. While the group is devoting itself primarily to investigation, they are also doing some teaching; this enables members of the economics department to participate in the research activities, helps to integrate teaching and research, and supplies research results to enrich the teaching program.

The future of the University of East Africa and of the East African countries will depend in large measure on the quality of the leadership during the initial stages of development. The university is continuing its efforts to attract, for varying periods, first-class academic and administrative leadership from the United Kingdom, the United States, and Europe until the time arrives when qualified African professionals can assume full responsibility.

Recently a conference of leaders of the University of East Africa, the three colleges, the governments of Uganda, Kenya, and Tanganyika, and of the East African Common Services Organization, plus representatives of other governments and private foundations, met at the Villa Serbelloni on Lake Como in Italy to discuss the university's future development. Specifically, the group considered the university's development plan for the triennium 1964-1967. The University Triennium Development Plan, which grew out of a series of meetings and discussions in 1962, revealed a deficit in the projected recurrent account of approximately £1 million sterling and of nearly £4 million sterling in

the capital account for the period. A substantial amount of this capital is required to build and expand the University College in Dar es Salaam and the Royal College in Nairobi. Makerere, being older and relatively well equipped in buildings and physical plant, had minor capital needs during this triennium. The Villa conference was remarkably successful. The recurrent-budget deficit appears to have been covered and there is a high degree of probability that substantially all of the capital required will be found during the three-year period. The future of the university appears far brighter than it did before this important conference.

S T U D Y A W A R D S

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, and the humanities and social sciences. 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 1963 a total of 709 persons held Foundation fellowships and scholarships: 433 awards that began in previous years continued active into 1963, and 276 new awards became active during the year. Their distribution by program is as follows:

	STUDY AWARDS FROM PREVIOUS YEARS CONTINUED INTO 1963	NEW AWARDS IN 1963	NUMBER OF AWARDS ACTIVE IN 1963
Agricultural Sciences	197	121	318
Humanities and Social Sciences	120	71	191
Medical and Natural Sciences	116	84	200
	<hr/> <hr/> 433	<hr/> <hr/> 276	<hr/> <hr/> 709

In addition to the fellowships and scholarships awarded and administered directly by The Rockefeller Foundation, several organizations have awarded similar fellowships with funds contributed in 1963 and previous years by the Foundation. The organizations administered a total of 93 fellowships provided for by Foundation funds during 1963:

British Medical Research Council	12
Population Council	
Demographic	17
Medical	5
Social Science Research Council	
Predoctoral and Postdoctoral	49
Political Theory and Legal Philosophy	10
	<hr/>
	93

Rockefeller Foundation fellows and scholars in 1963 came from 52 countries and one international organization:

	PREVIOUS AWARDS	NEW AWARDS		PREVIOUS AWARDS	NEW AWARDS
Algeria	1	—	Mexico	53	22
Argentina	13	7	Morocco	1	—
Australia	—	3	Netherlands	1	1
Belgium	—	1	Nicaragua	1	—
Bolivia	3	1	Nigeria	15	12
Brazil	29	16	Norway	5	1
Ceylon	3	—	Pakistan	7	2
Chile	35	20	Peru	10	17
Colombia	63	47	Philippines	24	23
Congo	—	1	Poland	9	13
Costa Rica	5	4	Senegal	—	1
Denmark	1	2	Southern		
Ecuador	3	3	Rhodesia	2	—
El Salvador	4	—	Sudan	1	1
Ethiopia	6	2	Thailand	10	8
France	2	3	Trinidad	2	1
Germany	—	1	Turkey	9	7
Ghana	4	1	Uganda	4	3
Guatemala	1	2	United Arab		
Honduras	1	1	Republic	6	1
Iceland	1	—	United Kingdom	1	2
India	37	20	United States	3	5
Indonesia	7	1	Uruguay	1	—
Iran	3	—	Venezuela	1	—
Iraq	2	—	Vietnam	2	—
Jamaica	4	1	World Health		
Japan	32	16	Organization	2	1
Kenya	—	2		433	276
Korea	3	—			

The Rockefeller Foundation made available a total of \$3,525,000 for its fellowship and scholarship activities during 1963, and appropriated \$3,625,000 for the awarding of fellowships during 1964.

The Foundation in 1963 continued to appropriate funds for allocation in the form of unrestricted grants to institutions where Foundation fellows and scholars 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 level of postgraduate study, the Foundation, since 1958, has made available funds 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 in addition to tuition and other fees also paid by the Foundation through its fellowship and scholarship awards. Under this program in 1963, the Foundation sent funds amounting to \$428,500 to 96 institutions in the United States and foreign countries.

Fellows and scholars are listed by name and region in the Annual Report.

FINANCIAL SUMMARY FOR 1963

THE TRUSTEES OF The Rockefeller Foundation appropriated a gross amount of \$37,146,072 during 1963 (\$30,047,036 in 1962). Income on investments was \$26,039,803 (\$24,233,991 in 1962) and expenditures were \$35,342,598 (\$29,470,180 in 1962).

Net appropriations (\$37,146,072 minus \$3,286,529 of lapsed portions of appropriations) were \$7,792,583 more than receipts (income on investments of \$26,039,803 plus refunds of \$27,157). This amount was transferred from the uncommitted Principal Fund, leaving a balance of \$170,867,559 as of December 31, 1963. The market value of the uncommitted Principal Fund was \$683,579,852.

Expenditures exceeded net appropriations by \$1,483,055; the amount of appropriations for future payment was thus reduced from \$62,818,340 to \$61,335,285.

Further diversification of investments was accomplished by exchanges with the Ford Foundation of 89,058 shares of Standard Oil Company (New Jersey) capital stock for 122,045 shares of Ford Motor Company common stock. Three other stock issues in the Foundation's portfolio were sold for \$4,929,464 in order to invest the proceeds in other equities, and \$5,109,399 of additional stock purchases was financed by withdrawals from savings deposits.

Financial Statements for 1963 are published separately and are also given in full in the Foundation's Annual Report. The statements present the balance sheet at December 31, 1963, with supporting information including a list of security transactions during the year, a schedule of securities owned at the end of the year, and the opinion of Haskins & Sells, independent public accountants.

ORGANIZATIONAL INFORMATION

MEETINGS

The annual meeting of the corporation and a regular stated meeting of the Board of Trustees were held on April 3; a stated meeting of the Board of Trustees was held on December 3 and 4. Six regular meetings of the Executive Committee of the Trustees were held to take actions within the general policies approved by the Board.

TRUSTEES AND PRINCIPAL OFFICERS

At the meeting of the Board of Trustees on April 3, Mr. Thomas J. Watson, Jr., Chairman of the Board and Chief Executive Officer of the International Business Machines Corporation, was elected to the Board to fill the vacancy created by the resignation of Mr. Dean Rusk in 1961, and Dr. Robert F. Goheen, President of Princeton University, was elected to succeed Dr. Henry P. Van Dusen who retired on June 30. Dr. Detlev W. Bronk also retired from the Board at the end of June.

At the same meeting Mr. Kenneth Wernimont, Treasurer, was elected Vice-President for Administration. He will continue to serve in his capacity as Treasurer.

The death of Orvil E. Dryfoos on May 25, 1963, created another vacancy on the Board of Trustees. Mr. Dryfoos, who was President and Publisher of *The New York Times*, had been a Trustee of the Foundation since April 6, 1960. His loss is reported with profound regret.

REGIONAL PROGRAMS



UNITED STATES

Grants made in the United States during 1963 fell broadly within the five major areas of interest as recently redefined by the Foundation's Trustees. While the formal adoption of these goals has not meant a radical change in either philosophy or practice, most of the year's domestic grants have been shaped toward aims which to the Foundation now seem to be of the first importance. This alteration of accent is more noticeable within the United States because two of the five new cardinal points — the advancement of equal opportunity, and the aiding of cultural development — have particular domestic significance. The total of grants made within the United States was \$15,270,401.

Toward the Conquest of Hunger

In addition to grants to institutions within the United States, the Foundation's domestic activity includes the coordination through New York headquarters of its own worldwide cooperative program. More than fifty staff agricultural scientists are now on assignment in five countries; for the expenses of this work in 1964 an appropriation of

\$2,749,450 has been made, exclusive of a grant reported elsewhere for the International Rice Research Institute.

The staff-operated program had its genesis in Mexico in 1943, when a small group of Foundation scientists was invited to assist research on the improvement of basic food crops. Mexico at this time was importing large amounts of staple foods such as corn and wheat; in the following two decades her agricultural economy grew to self-sufficiency, and the patterns of research and training which the Foundation's group helped to develop played a material part in this achievement. Mexican scientists — many of them trained under the program and through Foundation study awards — are now in charge of the ongoing research; the ten Foundation staff members assigned to Mexico now function largely in an advisory capacity and are especially concerned with international aspects of crop improvement and scientific training which have arisen out of the Mexican endeavor.

The success of this first crop improvement work led to invitations from other Latin American countries for the Foundation to take part in similar cooperative work. Since 1950 a cooperating program has been under way in Colombia, and Foundation staff have been working in Chile since 1955. Plant materials and technical assistance are being increasingly supplied to Ecuador, Peru, Venezuela, and others.

Improved varieties of corn, wheat, potatoes, and other food crops have proved immediately useful in other Latin American countries, as well as in Africa and Asia. Even more significant, however, is the adoption by several of these countries of national, coordinated plans for agricultural research and training, following upon the initial success of some of their cooperative projects. In India, for example, the progress of maize improvement caught the attention of the central and state governments and has led to a review of research practices on other agricultural problems. Cooperative research on maize, sorghums, and millets has been under way since 1957 and has been built from the start on a system of maximum coordination of existing Indian agencies. In a parallel development the Post Graduate School was set up at the Indian Agricultural Research Institute in 1958. The success of this school has in turn encouraged Indian leaders in their efforts to establish new agricultural universities and invest them with many of the features and functions of American land-grant colleges.

A cooperative project on rice improvement has been centered at Los Baños, the Philippines, since 1959. The International Rice Research Institute is administered by a board of trustees representing six nations; its financial support has come mainly from the Ford and Rockefeller Foundations, and its scientific direction is being given by staff members of The Rockefeller Foundation in cooperation with Asian scientists. In addition to its own research studies, one of the institute's most important functions is the coordination of inquiry at existing centers of rice research, and cooperative experiments on climatic factors affecting rice production have been established in Indonesia, Japan, Malaysia, Taiwan, and Thailand. The advanced training of young scientists is a major activity of the institute; during 1963, more than sixty fellows and scholars were in residence, most of whom were university faculty members or research workers from rice experiment stations in Asian countries.

Within the United States, several new grants have been made for other studies which have an international dimension. At the University of Chicago the development, use, and control of international water resources in Africa are to be investigated by Professor Gilbert F. White, chairman of the Department of Geography. He is a leading authority on problems of water resources and has conducted many investigations for the United Nations and its agencies, and for several national governments. Professor White's new studies will focus on the great African rivers, all of which flow through two or more countries, and on the physical and political problems involved in their effective development and control; this research is being aided by a grant of \$50,000.

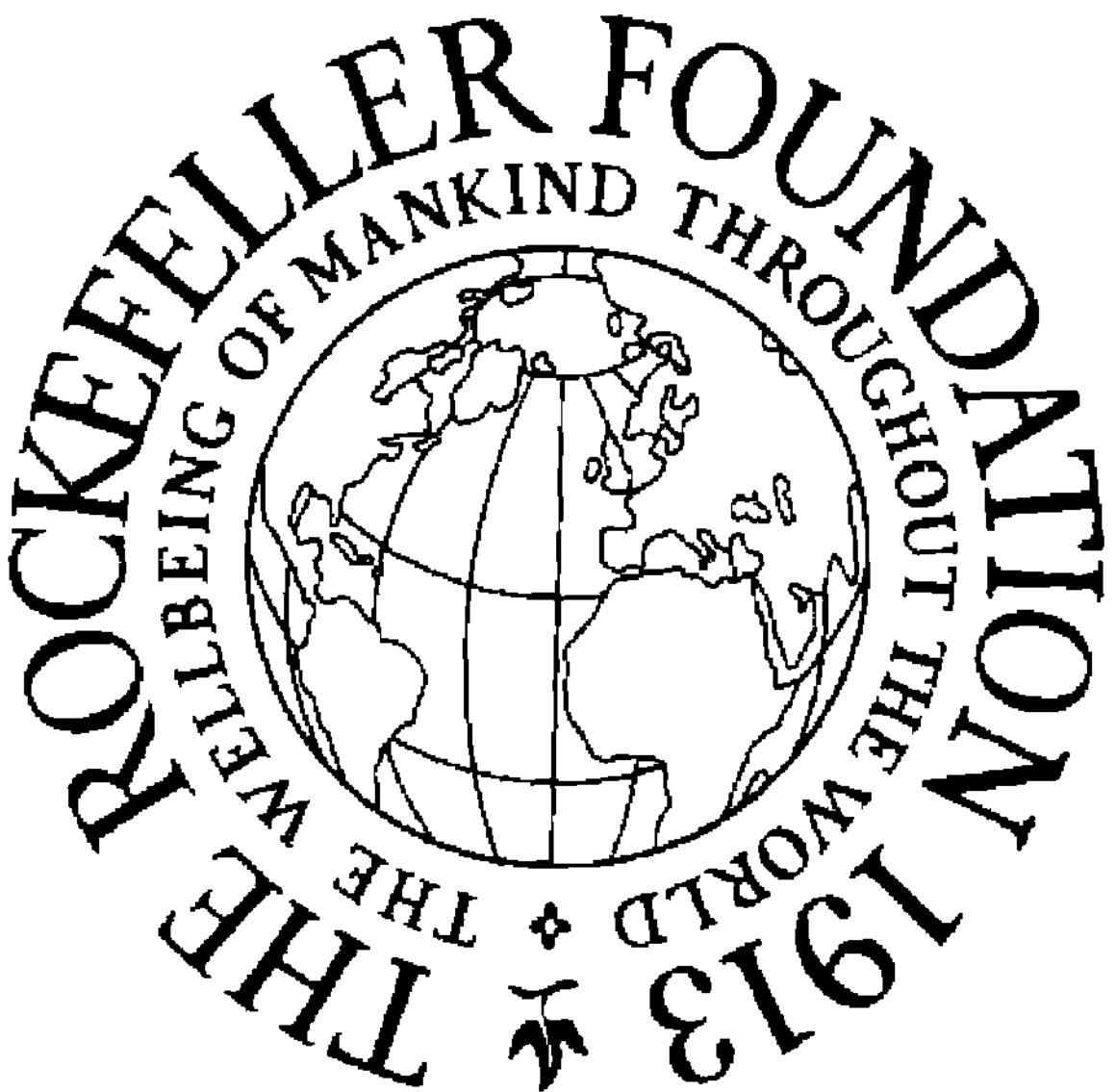
Another aspect of the campaign against hunger is malnutrition, the results of which present the world with one of its most serious and widespread medical and social problems. The Institute of Nutrition Sciences, Columbia University, New York, trains advanced students from many areas of the world in the complex technological, economic, biochemical, and sociological factors involved in assuring adequate human nutrition. Institute students also receive practical experience in community field work in New York, and in Jordan, Crete, Haiti, Lebanon, India, and other countries: this program will be extended by grants of \$316,000 which will help the expansion of the institute's facilities at St. Luke's Hospital and the strengthening of its faculty.

The economic effects of national agricultural policies are to be investigated at the University of Chicago, under the direction of Professor Theodore W. Schultz. The consequences of such policies, both upon the internal structure of a nation's agriculture and upon the world pattern of distribution of farm products, are known to be considerable but have not yet been analyzed. An important part of this inquiry will be concerned with the relationship among improved agricultural production in low-income countries, the provision of better agricultural inputs, and the establishment of more hospitable policies. Wide disparity in the growth rates of agricultural production in the United States, Canada, Japan, and Mexico, for example, compared with the rates in much of Africa, Asia, and Latin America, prompts this effort to develop explanations. The Foundation has granted \$175,000 for this inquiry; an additional benefit of the research is expected to be an increased number of graduate students, many of them from abroad, who will be trained at Chicago in the economics of agricultural development.

The training of agricultural scientists abroad has been aided for many years by United States land-grant universities; of domestic colleges and universities engaged in technical assistance abroad, more than one-third are land-grant institutions. A \$60,000 grant has been made to help the Association of State Universities and Land-Grant Colleges, Washington, D.C., establish an office to coordinate the activities of its members and other agencies in rural development abroad. Working with both government and private agencies, the office will marshal the resources for aid, with an initial emphasis upon Latin America, and will serve as a focal point for requests from the Alliance for Progress and from institutions abroad.

The Population Problem

The study of problems in population is not a new interest for the Foundation. A number of grants have been made in past years for research in demography and reproductive physiology, and, more recently, for pilot projects in family planning. However, with the adoption of population problems as one of its five main areas of interest the Foundation will give increasing attention to improvement of understanding of economic and sociological aspects of population growth,



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A technician prepares to determine fatty acid distribution in fats by gas-liquid chromatography at the Nutrition and Metabolic Research Center of the Institute of Nutrition Sciences, Columbia University, which is operated jointly by the university and St. Luke's Hospital.

as well as to critical research and action programs in population stabilization. It is expected that a leading role in such studies will be taken by a new Center for Population Studies which is being established at Harvard University; a grant of \$600,000 has been made toward building costs and operating expenses of the center.

Harvard's new unit will be located within the School of Public Health but will be university-wide in scope. While it will engage in teaching and research on many aspects of the population problem it plans to emphasize research and action projects connected with population control. Staff members will alternate between assignments at the university and work at posts in regional field stations in the United States and abroad; headquarters will be in a new research building at the School of Public Health, which will be ready for occupancy in mid-1964.

Among the subjects to be investigated at the Harvard center and in the field stations are the biology of reproduction and methodology of fertility control; economic and social factors in population growth; rapid evaluation of the effectiveness of control measures; mass education and information techniques; methods for communication; motivation in family planning; effects of population increase upon human heredity; the interaction of social custom and the process of evolution; and ethical concepts of population control. Particular attention will be given to the training of workers for active programs of control in the United States and abroad.

Cultural Development

The Foundation began its encouragement of the humanities and the creative arts in the early 1920's, a time when funds for their support were relatively limited. Since then, studies in the humanities have consistently received Foundation aid and there also have been major grants to encourage development of the arts. In this latter area the Foundation, after extensive consultations with outstanding professionals and scholars, is now paying especial attention to projects that give promise of encouraging and stimulating creative minds and gifted performers.

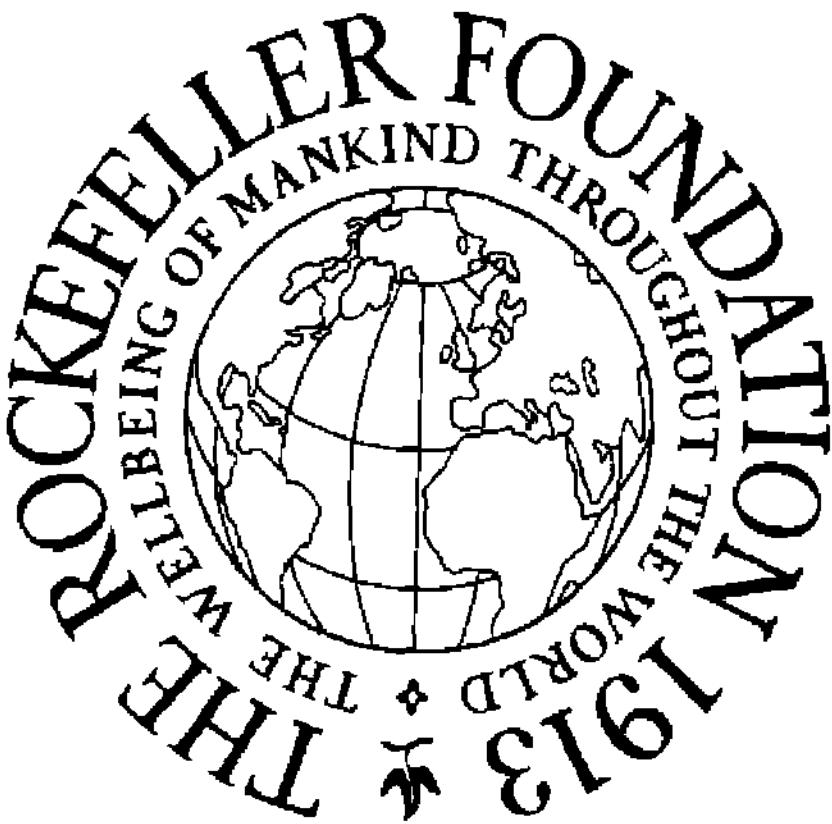
A grant of \$5 million for the continuing development of the Lincoln Center for the Performing Arts in New York brings to more than \$15

million the total of Foundation aid to the center since 1956. The Foundation's contributions reflect the conviction that when in full operation, the center will play a pre-eminent role in the development of the performing arts in America and on the international scene.

A grant of \$1 million was made to the building fund of the National Cultural Center (now known as the John F. Kennedy Center for the Performing Arts) in Washington, D.C. The center will house under one roof a concert hall, theatre, and auditorium, and will sponsor a continuing series of regional and national festivals and competitions covering all of the performing arts.

More often, however, the Foundation's aid is channeled into regional centers of independent strength and excellence, with the hope of supporting work of intrinsic merit, of broadening the base of the performing arts, and of fostering a diversity of influence and expression in the nation's artistic life. The Foundation believes that support of

Philharmonic Hall, the first completed unit of the Lincoln Center for the Performing Arts, New York.



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Preliminary model for the entrance to the Hall of States, in the John F. Kennedy Center for the Performing Arts, Washington.

promising plans of colleges and universities with strong drama and music departments and the desire for closer involvement in the cultural life of their communities may well be one means of contributing to these goals.

The University of Minnesota has received a grant of \$74,000 toward the costs of an experiment in advanced creative work in theatre, with particular emphasis on playwriting. Its purpose is to provide a place where playwrights of talent may work on the problems of scripts which are not yet ready for production. In addition to providing the general intellectual milieu of its campus, the university will use the grant to provide the playwright with the "tools" of his trade for productive research, much in the same manner the physical scientist is provided with his laboratory and equipment. These "tools" include, where appropriate: directors, casts, designers, and critics. Among the conditions favoring this experimental work in playwriting is the presence in Minneapolis of a leading professional theatre company, the Tyrone Guthrie Theatre, as well as the university's outstanding department of theatre.

In another exploratory venture, the Actors Studio, New York, is seeking to enrich the repertoire of the professional theatre by introducing more experimental works of merit. A grant of \$56,400 has been made so that the studio can bring playwrights, directors, and performers into close cooperation in the final polishing of scripts. Five new plays are to be developed during 1964; each will have been brought close to completion before its acceptance, at which point the studio will bring a director and cast together with the author for a period of intensive rehearsal and revision. The Foundation's grant will help ensure the uninterrupted collaboration of the author and the production team, in each case over a period of several weeks, and a part of the grant also will help support the studio's courses in playwriting, acting, and directing.

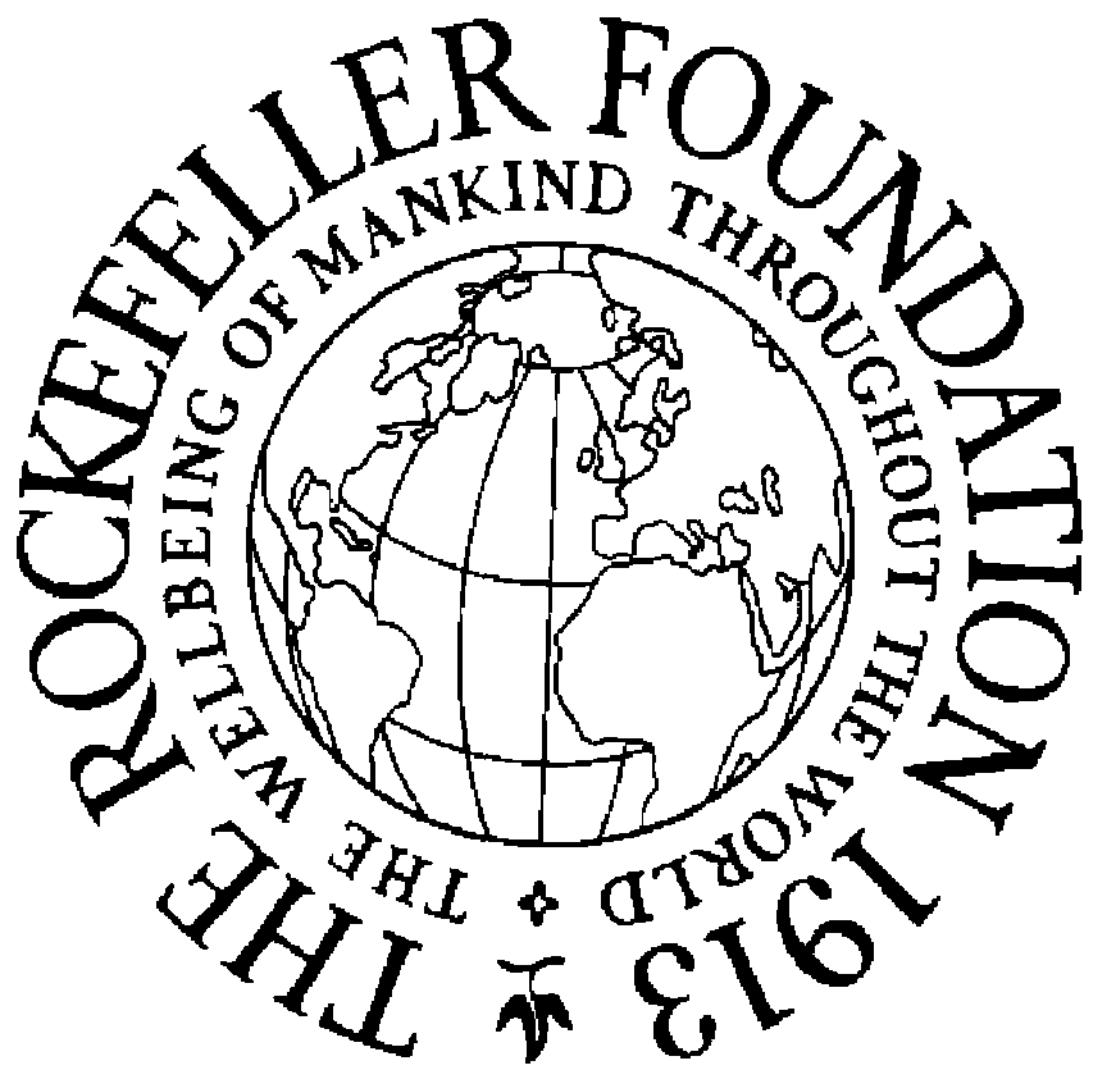
Throughout the performing arts the critic has an important role not only as a custodian of the standards of excellence, but also as an influence upon public acceptance and participation. In the field of music the need for perceptive and well-trained critics is increasing rapidly as the number of permanent performing groups continues to grow, and an experiment in the training of about twenty future pro-

fessional critics is therefore being undertaken at the University of Southern California. Carefully chosen students will be enrolled at the university's School of Music in a course which concentrates upon developing substantial musical knowledge and critical writing ability. The course will be followed by newspaper apprenticeship of the students under the guidance of outstanding professional critics; in most cases the students will work for a year on suburban newspapers close to the supervising critics and will return to the university for a wind-up seminar at the end of their apprenticeship. The school had previously experimented with a short course for working critics, and the alumni of that seminar subsequently advanced professionally. The new course will itself be of one year, with instruction from composers, performers, critics, the faculty of the School of Music, and members of the Departments of Philosophy and English; the Foundation grant is for \$296,000.

Toward Equal Opportunity

The Foundation and associated Rockefeller boards have over the years spent more than \$65 million in helping to improve and widen educational opportunities for Negroes in the United States. In its reconsideration of policy during 1963, the Foundation formally stated the advancement of equal opportunity to be one of its five principal aims, and commented that its own best contribution toward this would be to carry forward efforts to give increasing numbers of disadvantaged citizens better educational opportunities. In this context it is apparent that much of its aid will be directed toward improvement of Negro education.

As one means of helping provide better education for Negroes, grants totaling \$2.5 million have been made for the benefit of colleges belonging to the United Negro College Fund. There are 32 of these private colleges, including a majority of the accredited private Negro colleges in the South; it is estimated that their combined enrollment contains one out of every eight Negroes attending college. In the last academic year these colleges granted 3,201 undergraduate and 381 graduate degrees. A sum of \$1 million has been made immediately available and is being distributed by formula among the participating colleges. A further \$1.5 million will be allocated by the Foundation in the next three years to strengthen selected colleges which are mem-



Photograph Excised Here

Members of the University of Minnesota's project in creative theatre discuss a script, written by a participating playwright, which they are producing as an exercise.

bers of the Fund. These grants coincided with a national campaign by the Fund to raise \$50 million, in an effort that was linked to the centenary of the Emancipation Proclamation. Money is needed for purposes which include new buildings and the remodeling of older ones, increased endowments, and immediate special educational projects to meet the demands of rising enrollments.

The faculties of about forty Southern colleges, most of which have a predominantly Negro enrollment, will be strengthened with the aid

of a grant of \$405,000 which has been made to the Woodrow Wilson National Fellowship Foundation. This project will place gifted young teachers in the colleges on short-term internships. The appointees will be chosen from among Woodrow Wilson Fellows; these fellowships are granted to about 1,000 graduates annually, providing aid for the first year of graduate study by young men and women who intend to enter the college teaching profession. In an earlier experiment, several fellows were appointed to teaching internships to test whether Southern Negro colleges would benefit from this added teaching strength. Through a released-time arrangement the interns were able to give particular attention to undergraduates of special promise. Extension of this plan under the Foundation's grant follows the initial success of the experiment; during its life it is expected that two short-term appointments will be made at each of about forty colleges. The interns will have part of their salary paid by the Woodrow Wilson Foundation; they will be freed in return from some of their normal teaching duties and the free time will be spent in searching out students of promise and stimulating their intellectual interests. It is hoped, as a partial benefit of the plan, to increase the number of Negro students who will qualify for fellowships and then enter good graduate schools, headed for a college teaching career. At the same time, the experience given the interns should make a valuable contribution to their subsequent teaching careers.

Grants have also been made to enable four Southern universities to expand their programs of student assistance. They are Duke University, Durham, North Carolina; Emory University, Atlanta, Georgia; Tulane University of Louisiana, New Orleans; and Vanderbilt University, Nashville, Tennessee. These institutions all are privately endowed and admit students without regard to race or creed; they have each received a grant of \$250,000 to enable them to increase their efforts to find, in the public high schools of the South, including Negro schools, able students who, because they come from poor families, might not seek college education unless assured of adequate financial aid. The four universities will cooperate in the administration of a scholarship program that will aid about ten students per year, for three years, at each university.

In company with these projects, the problems of inequality at the

secondary-school level also are being examined and grants have been made for experiments in the identification and encouragement of disadvantaged high school students. These ventures are being undertaken by Princeton University, New Jersey; Oberlin College, Ohio; and Dartmouth College, Hanover, New Hampshire; each has received \$150,000 in partial support of a three-year series of summer school sessions, to be followed by two years of project evaluation.

Princeton University will offer an eight-week residential summer session on its campus for between thirty and fifty boys who have completed the sophomore or junior year in urban New Jersey high schools. Entrants will be chosen on the basis of teacher and school staff recommendations and interviews with Princeton staff, from among Negro and white students who show good but not fully realized potential. Instruction and counseling in the special sessions will be given by a group of master secondary school teachers supplemented by Princeton faculty members and by Princeton undergraduates who have had tutorial experience. The course will stress the mastery of communication, through language and mathematical skills, and will expose students to a newly developed general science course. A variety of off-campus cultural and recreational experiences will be provided; the hope is that the total eight-week summer activity will produce a change in students' study habits and expectations and provide many of them with the motivation and ability to qualify eventually for entrance to superior institutions of higher education. The Oberlin course will be similar, though dealing with a slightly younger age group of both boys and girls; the Dartmouth project also is essentially similar, but with the additional element of cooperation among a group of thirty private preparatory schools to offer scholarships to the alumni of the summer sessions.

A broader interpretation of equal opportunity has been encouraged over the years by the activity of many groups, among them, the Southern Regional Council of Atlanta, Georgia. The council's purpose is to study regional race relations problems, report upon them, and assist citizens' groups in understanding them. Among its services is the provision of staff and consultants to community organizations which seek advice on the handling of specific local situations; this work has been aided by a 1963 contribution of \$50,000.

International Activities of United States Institutions

A number of United States institutions are engaged in research and teaching overseas, either individually or in cooperation with groups abroad, and by acting as hosts to foreign scholars in this country. Several major grants have been made to aid such activities.

Princeton University, New Jersey, and the University of Wisconsin, Madison, will assign members of their faculties to teach in universities in Latin America and Africa with the assistance of grants of \$100,000 each. Specialists from Princeton, primarily in the history, literature, sociology, or economics of Latin America or Africa, will spend extended periods in teaching and research at strategic universities in these areas. The University of Wisconsin, which has a strong interest in African affairs, will give priority in overseas appointments to teachers of plant pathology, plant breeding, soil science, entomology, and animal husbandry, along with experts in agricultural economics and rural sociology.

Advanced training for young African lawyers will be continued at Yale University with the help of a new \$75,000 grant. The opportunity has been made available since 1961 at Yale, to students who are preparing to teach in their countries' law schools. The scholars are studying public law, international law, the judicial process, and the social sciences in courses specially adapted to complement those at British and Commonwealth law schools; it is expected that an increasing number of these students will have received at least part if not all of their preparation at African institutions.

Latin American law students will continue to be brought to Tulane University of Louisiana, New Orleans, as part of an expanded program of research and training in Latin American law and social sciences. Civil law is the legal system in Latin America and attention to both civil and common law has been a practical necessity at the Tulane School of Law, since Louisiana retains the civil law inherited from the French and Spanish. The school has developed into a strong center of learning in comparative law and in the legal, social, and political systems of Latin America and the United States. A new grant of \$68,500 has been made, under which Latin American students will be trained at Tulane; faculty members will undertake research and teaching at Latin Amer-

ican universities; and the School of Law will reinforce its library in several specialized areas.

As an aid to research in many fields, guide books to Latin American historical sources in that region and in the United States are being made under the sponsorship of the Institute of Latin American Studies of the University of Texas, Austin. Heading the project is Dr. Gunnar Mendoza, National Archivist and Librarian of Bolivia. He is to be assisted by an advisory committee of archivists, scholars, and librarians which will help decide what fields should be covered in the guide books; a supporting grant of \$38,000 has been made.

Citizenship education overseas is being stimulated by the Overseas Education Fund of the League of Women Voters, Washington, D.C. The fund has undertaken to train women, chiefly from abroad, to serve as professional consultants on citizenship education and to assist voluntary organizations in their own countries. The first project, toward the costs of which a grant of \$50,000 was made, was a training seminar at Wellesley College attended in the academic year 1963-1964 by 11 women from Latin America and two from the United States; subsequent field work in their home countries is envisaged under the supervision of fund consultants.

Medical education throughout the Western Hemisphere is being further developed by the Pan American Federation of Associations of Medical Schools, a newly created organization. The federation is composed of national and regional associations of medical schools and of individual faculties of medicine; it was formed through a unanimous vote by delegates from 172 schools at the Third Conference of Latin American Schools of Medicine. Part of the federation's program will be to stimulate exchanges of medical information and encourage the development of training centers in Latin America to prepare physicians for careers in academic medicine. A grant of \$75,000 has been made under the administration of the Association of American Medical Colleges, Evanston, Illinois; it will assist the establishment and operation of a secretariat whose offices are expected to be in Brazil, probably Rio de Janeiro, and which will be headed by Dr. Ernani Braga, a former Foundation staff member.

Problems of modernization in the Middle East and North Africa are to be studied by a team of social scientists from the University of

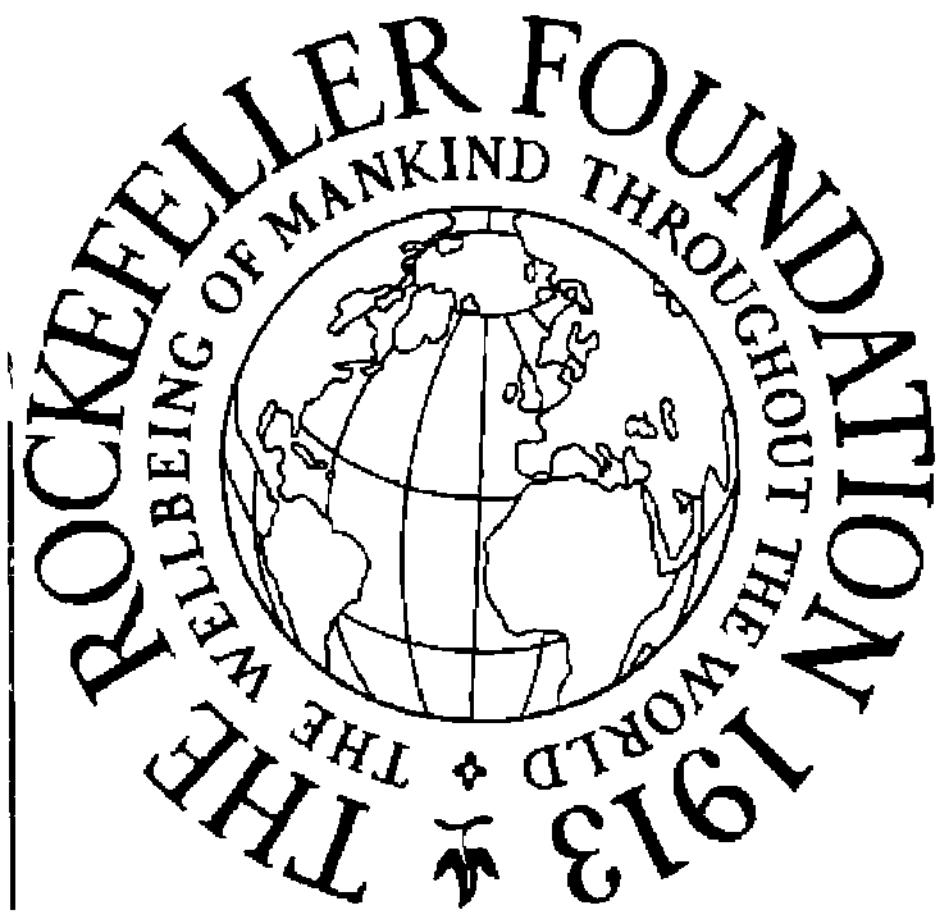


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International collaboration between two universities — Stanford University and the University of Brazil — has contributed importantly to the field of natural product chemistry. Above, investigators in Rio de Janeiro work with alkaloids; at right, graduate students at Stanford confer with their professor.

Chicago, for whose work \$60,000 has been granted. The team will work in four nations with a common Muslim cultural heritage. The object is to study the translation and transmittal of the goals and techniques of modernization in terms understandable and attractive to both the urban and rural peoples of the area and to define more clearly the links between the varied sectors of society leading to a clearer concept of the processes of adjustment and understanding. The Chicago team will concentrate on individuals and groups actively involved in modern political and economic institutions who also hold to and are influenced by their Muslim cultural and religious heritage.

The chemistry of natural products is a useful area in the training of organic chemists and can also yield valuable practical results: two of the most striking examples of this are the development of an inexpensive way of mass-producing cortisone from yams, in Mexico, and of securing tranquilizing drugs from the Indian plant *Rauwolfia serpentina*. Cooperative research on natural product chemistry in the United States and Brazil will be furthered, at Stanford University, California, and the University of Brazil, Rio de Janeiro. The project involves graduate research training under the direction of Dr. Carl Djerassi, professor of chemistry at Stanford, one of whose postdoctoral fellows, Dr. Walter B. Mors, now heads laboratories in the National Faculty of Pharmacy at the University of Brazil. Several members of this latter group have in turn done postdoctoral work at Stanford, and Brazilian research which flows from this collaboration has attracted international attention. The complementary functions of the two groups include not only the interchange of information and skills, but also the collection in Brazil of indigenous natural products for analysis at Stanford. The new grant, of \$110,000, will enable continuation of joint research in this



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field, and the advanced training at Stanford of about six Brazilian organic chemists in each year.

Staff-Operated Research Programs

In addition to its cooperating program in agriculture the Foundation maintains a staff-operated program of virus research. This is co-ordinated through the New York headquarters of the Foundation and consists physically of the central New York laboratories; the Berkeley, California, laboratory; and cooperative field posts to which staff are assigned in Brazil, Colombia, India, and the West Indies. Staff are expected to be posted to another laboratory in Nigeria in 1964.

The efforts of the cooperative program in virus research have been concentrated in the field of arthropod-borne (arbo) viruses and largely in two categories: the effects of the virus upon the host, as determined by host reaction, this category including such subheadings as clinical virology, pathology, and immunology; and the maintenance and transmission of viruses in nature, often referred to as epidemiology. Much of the basic immunological and serological work that contributes to an understanding of the interrelationships of the 170 known arboviruses has been accomplished in the Foundation's New York laboratories.

During 1963 continued studies in New York of the virus of eastern equine encephalomyelitis have strengthened the probability that at least two definable types exist in different parts of the New World. One reason for making studies of this kind is to obtain additional information on the question of whether rapid spread of a virus over a wide geographic area is accomplished through the agency of bird migration. In the case of EEE virus some of the findings could be interpreted as favoring this mechanism of distribution, but others could not be explained by this concept.

Serological studies on Ethiopian sera have provided much background information for the history of the recent massive yellow fever epidemic in that country. This work was undertaken in support of the field studies initiated by the small but dedicated staff of the Institut Pasteur in Addis Ababa and backed by the World Health Organization.

Tissue cultures are continuing to receive attention as useful tools for virus isolation and identification. A total of 94 viruses have now been examined at the New York laboratories for their ability to produce

cytopathic effects in cultures of a specific HeLa cell line.

Biochemical and tissue culture studies together have been directed toward the development of a fluorescent antibody technique as a tool for field investigation. Biochemical and biophysical studies have resulted in direct visualization of the Semliki Forest virus particle and led to investigations into the synthesis of viral RNA in infected cells.

Vaccine development is occupying much of the attention of the California laboratory, where a promising live-virus vaccine against western equine encephalomyelitis is now under trial.

For the expenses in 1964 of the virus research program and for general developmental work in the medical and natural sciences, an appropriation of \$2,031,250 has been made.

Distinct from its staff-operated programs, the Foundation also administers three projects of coordinated research for which grants are made to institutions for individual scholars. The international relations program, now in its third year, is designed primarily to assist individuals with research interests in important aspects of international relations; grants have so far been made to aid the researches of 87 scholars and analysts in the United States and abroad, and 13 other awards have been made in association with the program. The contemporary world receives most attention; more than half of all the grants have been for studies of new and emerging problems between nations. Some of the effort is, however, directed to a better understanding of the past with the aim of uncovering patterns of problems and resolutions which may exist within today's affairs. A breakdown of the thirty grants made in 1963 reflects the main lines of approach: 18 were in the area of emerging problems, nine in diplomatic theory and practice, and three in international relations theory. Value of these grants was \$200,144.

Research also is being aided on problems of constitutional democracy. The first broad area of these studies is the effect of contemporary pressures upon the classical elements of constitutional democracy, and the ways in which these elements change to meet and contain the pressures. The second area includes the constitutional issues deriving from new patterns of governmental intervention and organization; in both areas the emphasis is upon searching out and clarifying, in terms of practical application, the values and standards essential to free

order. Underlying this program is the belief that the inner workings of even successful democracies are not well understood, perhaps because earlier political analyses were usually made in isolation. Problems of constitutional democracy are related, however, and may therefore yield more easily to a systematic scholarly attack. In 1963, grants totaling \$94,650 have been made to 13 scholars in four countries.

A project employing similar principles of coordinated research into problems of urban design is also being undertaken and a number of studies will be under way in 1964.

Research in Other Areas

An increased understanding among psychologists, linguists, and communication and electronics experts may eventually emerge from an expanded program of experimental psychology at the Massachusetts Institute of Technology, Cambridge. A group led by Professor Hans-Lukas Teuber will investigate neuronal networks involved in the perception of complex sensory patterns, the chemical changes that may account for the phenomenon of memory, and similar questions. They are also planning a study in collaboration with institute linguists, headed by Dr. Roman Jakobsen, of how the child develops the ability to perceive his environment and deal with it through language and other symbolic processes. It seems highly probable that knowing more about how the nervous system works will facilitate the design of computers to simulate some of its activities; conversely, the development of computers to take on new and more complex tasks should throw more light on the brain's functions. An equipment grant of \$75,000 has been made for these expanded studies.

Two distinguished biological research centers, recently merged into the single Cold Spring Harbor Laboratory of Quantitative Biology, will be partially supported by a grant of \$85,000 to the Long Island Biological Association, New York. The organizations which have been consolidated are the association's Biological Laboratory and the Carnegie Institution's Department of Genetics; they have long shared some common facilities and the services of a single director. Many of today's prominent geneticists have learned the techniques of microbial genetics in summer courses at Cold Spring Harbor, and staff have conducted a variety of genetic studies on plants, insects and other invertebrates,

and on aquatic vertebrates. The year-round staff of the laboratory is small but is augmented by visiting scientists during the summer months, when students and senior research workers number about 65. An important feature of the program is an annual symposium on a selected aspect of quantitative biology.

Research in the humanities will be furthered at Yale University by a plan which enables senior professors to complete important scholarly works, while resident in New Haven and freed from teaching and other duties. Awards will be made by an executive committee, with the partial support of a \$200,000 grant; the plan will help to avert the danger of imbalance, present at many universities, occasioned by the channeling of large amounts of federal funds into research in the physical sciences. The problem is acute at Yale because its faculty of humanities is an unusually high proportion — close to 40 per cent — of its total faculty for arts and sciences.



EUROPE

The Foundation's grant-making activities in Europe continue to reflect the Atlantic community's increasing concern with the needs of developing nations, many of which are newly independent of Western powers. Because Europe's older centers of research and scholarship, some of which have had long associations with the Foundation, are now largely supported from local resources the Foundation is in a position to further promising relationships between leading European academic institutions and scholars and public officials of developing nations who are assuming positions of leadership in their own countries. The Foundation's readiness to seize upon these new opportunities is seen in its support of programs mostly concerned with the problems of emerging nations.

A number of long-standing projects are now receiving support from other sources. One of the most fruitful of these has been the plan of biophysics investigation begun 16 years ago at King's College of the University of London. These researches have gained worldwide attention and they afford a valuable example of how creative scientific

leaders can catalyze and sustain the efforts of a group throughout long and difficult investigations. Their beginnings are to be found in the early 1900's when, in Europe and elsewhere, remarkable techniques were developed by physicists for the indirect observation of invisible atomic particles and the way they are combined to form molecules of biological importance. Some of these mathematical and physical tools appeared to hold a promise of liberation to the biologists of the period, who were still confined in their observations to the world of the optically visible; in the immediate pre-war period the Foundation helped many experiments in the recruitment of the new methods to the service of biology.

In 1947 the British Medical Research Council decided to establish a biophysics research unit to be headed by Professor J. T. Randall, who during the war had developed the cavity magnetron which made long-range radar possible. Within the Department of Physics at King's College, Professor Randall assembled a group of young physicists interested in biology who would use their special skills in electronics, their intimate knowledge of spectroscopy, and their familiarity with the methods of X-ray crystallography to study in a new way the submicroscopic anatomy of the cell, the structure of plant and animal fibers, and the response of the living organism to its physical environment. For senior biological advice the group drew upon Dr. Honor B. Fell, director of the Strangeways Laboratory, Cambridge.

The group's application of what were, quite literally, new ways of looking at things has since yielded basic knowledge in many of the study areas. One of the first members, Professor M. H. F. Wilkins, made the original X-ray observations which led directly to the unraveling of the structure of desoxyribonucleic acid (DNA), and his contribution to this landmark of modern biology was recognized by the 1962 Nobel Prize Committee. Through the intervening years the group has ceased to be a stepchild of physics and now is a full-fledged Department of Biophysics headed by Professor (now Sir John) Randall. Through the cooperation of the university, the Medical Research Council, and the Wellcome Trust the department will shortly be housed in new laboratories, at a cost of nearly \$2 million. The Rockefeller Foundation has made a final grant of £21,000 (about \$60,000) toward new equipment, bringing the total of its aid since 1947 to nearly \$400,000.

The Foundation has also been associated, for the past 13 years, with research at the University of London on mammalian genetics in relation to congenital abnormalities and inherited diseases. These studies, directed by Professor Hans Grüneberg of the Department of Eugenics, Biometry, and Genetics, have provided a rich store of data on mutant genes and congenital malformations in experimental animals. This line of investigation has acquired even greater importance since, post-Alamagordo, the hazards of nuclear pollution have been added to man's daily life; much of the work at University College is now focused upon the effects of radiation on heredity. The department will shortly move into new laboratories and the Foundation has granted \$14,000 toward the costs of Professor Grüneberg's group during the transition period; the total of Foundation aid has been more than \$70,000.

In the past forty years the British Medical Research Council has received funds from the Foundation for about 200 "Rockefeller Travelling Fellowships" for advanced research abroad; until recent years these appointments were almost the only ones available for this purpose, but now there are many other opportunities for highly qualified young investigators. A final contribution of \$25,000 has been made to this program in 1963.

The year also brought near to its end the Foundation's plan of emergency aid to Hungarian refugees. A grant of \$110,000 has been made to assure the completion of scholarships held by Hungarians at Austrian institutions of learning. About 600 scholarships have been awarded since 1956, and the nearly \$3 million of aid given by the Foundation has also helped to provide research opportunities in Austria for displaced Hungarian scholars, as well as helping the resettlement efforts of other European and American organizations.

Most of the Foundation's grants in Europe during 1963 were for studies connected with developing countries. Much of this European activity is designed to strengthen higher education in the new nations; an example is the cooperation of St. Antony's College of the University of Oxford with strategic universities in Africa carried out under direct supervision of the warden, William Deakin. The University of Oxford and, in recent years particularly, St. Antony's College have close re-

lations with university centers in Africa. The resources of this university, especially in the humanities and social sciences, can make a major contribution to training African scholars and to helping develop local universities and research institutes. The Foundation has granted \$75,000 to extend this research into African affairs to provide graduate fellowships, and to aid staff assignments in Africa. St. Antony's will post members of its staff in research and teaching positions at key African universities and in turn increase its effectiveness as a training center for scholars from Africa. In the past 12 years the college has graduated 58 specialists in modern African history and political development; half of these graduates are now in Africa as government officials or university scholars, or are concerned with African studies on other continents. Included among them are a professor of history at the University College in Tanganyika, the first secretary of the United States Embassy in Leopoldville, the Congo, a district commissioner in the Sudan, an assistant professor of African studies at Yale University, an associate professor of political science specializing on Africa at the University of California (Berkeley), the director of the Institute of Applied Economics in Dakar, Senegal, and the deputy manager of the Central Bank of the Sudan.

The fundamental planning needs of the new nations require an immediately increased supply of trained economists and of reliable economic data. The Foundation has granted \$32,000 to the Institute of Applied Economics, Paris, one of the major research centers in Europe conducting applied research studies on national and international economic problems, for use by its Dakar office in studying the impact of industrialization on the rural sector of African economies. The Dakar unit is aiding the governments of Tunisia and Senegal in training research economists for those countries, and the grant will assist both its research and training functions.

The allocation of human as well as physical resources will be studied by the Netherlands Economic Institute, Rotterdam, under the direction of Professor Jan Tinbergen, in an attempt to establish a guide for educational planning in developing countries. The value of greater understanding of relationships between economic development and education, and of a more systematic and informed approach to educational planning, is of obvious importance in developing countries,

where resources are limited and needs are great. The institute has been granted \$23,650 toward the preparation of quantitative factual data which will relate various types and levels of education to their costs and returns to society.

Interchange of scholars and the provision of research and training opportunities in Europe for students from emerging nations have been aided by a number of Foundation grants. Among the major projects which received assistance have been the creation of a Latin American unit within the Center for the Study of International Relations, Paris, probably the most distinguished school of modern historical and political training and research in France. The new section of the center is under the direction of Professor François Chevalier, a historian and former government official with experience in Latin American affairs, who hopes to develop a strong publications and documents center and a two-way flow of European and Latin American scholars. A large part of the Foundation's grant of \$37,400 will be applied to the training of Latin Americans in Paris, for whom the facilities and opportunities offered by the center could make an important contribution toward their future scholarly careers.

Increasingly, countries within the Far East, Middle East, and Africa are drawn into international discussions concerning arms and disarmament problems, yet there is a marked deficiency of expertise on these topics in these nations. The London School of Economics and Political Science is in a particularly good position to provide training opportunities in this field, in part because of the interest of its director, Sir Sydney Caine, as well as the relevant scholarship both of Hedley Bull, reader in international relations with special reference to strategic studies, and of Geoffrey Goodwin, professor of international relations. A grant of \$31,565 was made by the Foundation to enable the school to provide opportunities in training and research for a small, carefully selected number of young scholars from leading academic institutions in the Far and Middle East and Africa who at the termination of their training would return to their own universities to teach and advise in this area of political science.

The training of jurists and legal scholars is of exceptional importance in this period when many new nations are in the process of shaping both governmental and legal procedures. At the Institute of

Advanced Legal Studies, University of London, a current total of 460 graduate students from forty countries have participated, under the direction of Professor J. N. D. Anderson, in research and study in comparative law and common law. With Foundation assistance, the institute over the past three years has been offering a number of fellowships annually to qualified legal scholars and lawyers from African and Asian countries. To continue these programs, the institute has been granted \$22,800 toward the costs of research fellowships.

The Foundation is also continuing, on a modest scale, its support of studies in modern history and international relations, not only for the intrinsic merits of such investigations, but also for the light they shed on contemporary problems and their resolutions.

A complete listing of grants to institutions and support to individual scholars is to be found in another section of this Report.



LATIN AMERICA

The Rockefeller Foundation in Latin America in 1963 continued to emphasize its cooperative programs for the improvement of agricultural production and for research on arthropod-borne viruses of public health importance; increased its contribution to university development; and continued to support a number of projects which it has aided in the past.

In three countries the Foundation maintains resident agricultural specialists who cooperate with local organizations in work directed toward the conquest of hunger through increased production of basic plant and animal food products, and through strengthening and expanding educational opportunities for young people entering professional agriculture. The unit in Mexico, established in 1943, has 13 staff members; the one in Colombia, set up in 1950, has 19; and that in Chile, in operation since 1955, has four. The work is about equally divided between the food plant and the animal sciences and in all units much attention is given to cooperation with local agricultural colleges and graduate schools.

The cooperative virus research units are located in Port-of-Spain, Trinidad; Belém, Brazil; and Cali, Colombia; they were established, respectively, in 1953, 1954, and 1960. Foundation staff members at the three laboratories total five. Two of the laboratories are administered by universities and the third collaborates with two institutions.

The Foundation's main project for university development in Latin America is at the University of Valle, in Cali, Colombia. More than \$4 million has been granted since 1953 to aid work in the humanities and social sciences; to develop a general studies program; to strengthen the administrative structure of the university; and for teaching and research in medicine and related fields.

More detailed accounts of these units, and of the grants made for research and development, are included in the sections which follow.

Argentina

The major grant in Argentina in 1963 amounted to \$160,000 and was made to the National Council of Scientific and Technical Research, Buenos Aires, for the purchase of research equipment. The new grant supplements one for \$150,000 appropriated in 1960.

The council was created in 1958 as a means by which government funds could be channeled impartially to Argentine universities to strengthen the base for the development of the country's science and technology. Composed of 15 outstanding Argentine scientists, the council is headed by the internationally eminent Professor Bernardo Houssay. Various committees of leading university professors in the natural sciences, the social sciences, and the humanities assist the council in the selection of projects and the evaluation of requests.

Modeled after similar organizations in Europe and the United States, the council conducts a large fellowship program, makes grants for the support of research and institutional development, and provides funds to supplement university salaries so that a substantial number of highly trained investigators can devote a larger portion of their time to research. The council awards about eighty new fellowships each year to young people who need further training which can be obtained in Argentine universities, and about sixty foreign-study fellowships annually to men who are starting their scientific careers and who can profit from experience in outstanding research centers

throughout the world. The council distributes approximately 60 million pesos annually in research grants, and helps support about 250 scientists through a "research career" plan.

The funds from the Foundation will be used for the purchase of equipment, chemicals, and special enzyme preparations which must be obtained chiefly from outside the country.

Brazil

Rockefeller Foundation cooperation with health agencies in Brazil, which began at the end of World War I and has been continuous since that time, is now concentrated on the Virus Laboratory of the Evandro Chagas Institute in Belém. Begun as a joint venture of the Foundation and the Special Public Health Service Foundation of the federal government, the work of the Belém laboratory is now shared also by the University of Brazil, the Brazilian National Research Council, the Oswaldo Cruz Institute, and the University of Pará. A building program largely completed in 1962 has greatly increased the efficiency of the laboratory facilities; it included enlarged quarters for a tissue culture laboratory, improved animal quarters, and new office and research space.

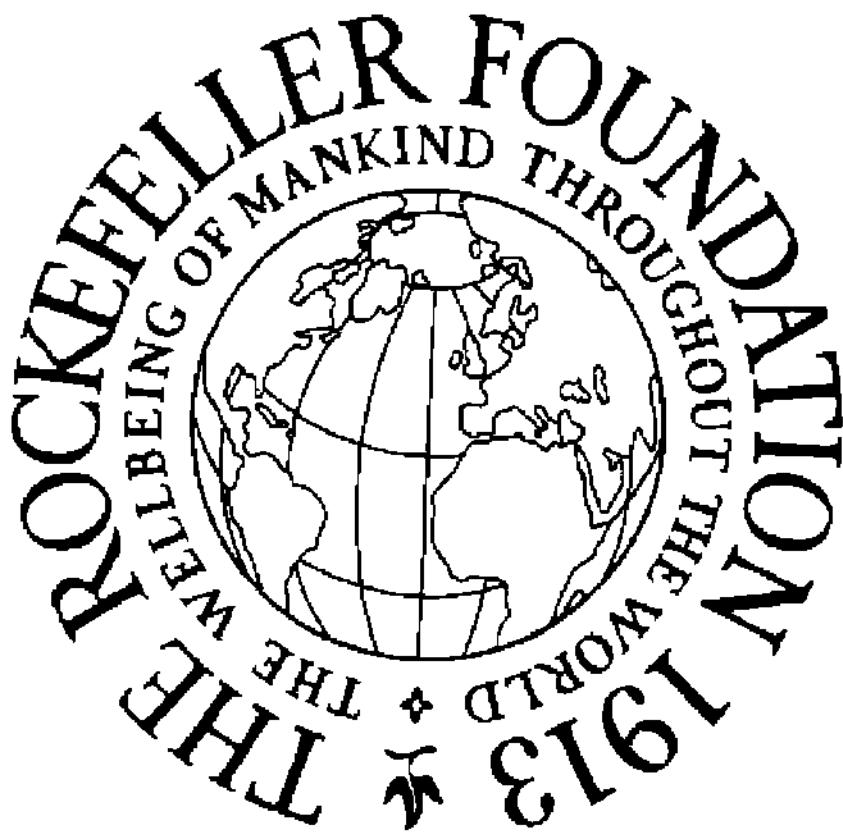
The area around Belém, at the mouth of the Amazon river, has proved to be an extremely rewarding center for the study of the arthropod-borne (arbo) viruses, those transmitted by such insects as mosquitoes, ticks, and mites. Of the approximately 170 arboviruses presently known, more have been found in the Belém area than in any other single location, and six new ones were added to the list in the past year and a half. Of particular significance was the virus obtained from lizards: that the arboviruses flourish among warm-blooded hosts has long been known, but only recently has attention turned to cold-blooded vertebrates and invertebrates.

Since a major objective of the Foundation's field laboratories is the investigation of the life cycles of the arboviruses in nature, extensive use has been made of "sentinel" animals, exposed in the forest in cages. More recently, the Belém laboratory has devised a program in which wild rodents and marsupials in their natural habitat serve as sentinels. Essentially this consists of capturing wild animals in a designated area of the Utinga forest, marking them by a system of punching and

notching of ears and clipping of toes, releasing them, and then recapturing them. Through the use of clock-connected box traps, the exact moment an animal enters the trap is registered. In this way the laboratory is obtaining valuable information on the presence of various arboviruses, their activity as regards these hosts, and their seasonal cycles. At the same time, it is getting a clearer picture of the duration of antibodies in these animals as well as useful data on the animals' breeding habits, home range, and life span. By the end of 1963, 829 animals had been captured and released a total of 5,377 times and 68 strains of 15 different viruses had been isolated from them.

The connection between the periodic outbreaks of arbovirus diseases in the United States — usually in the warm months — and the life cycles of the same or similar viruses in tropical environments like those of Belém and Trinidad, is imperfectly understood. The almost annual occurrence of arbovirus epidemics in the United States and other temperate zone countries cannot fully be explained, however, until much more knowledge is gained concerning the ecology of the

"Fishing" a lizard from a tree for study at the Belém Virus Laboratory. The recent discovery that arthropod-borne viruses flourish in cold-blooded creatures has added a new dimension to the investigation of these widespread disease agents.



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viruses in the tropics, and also their migration to the temperate zones, if indeed they do migrate.

Among other 1963 grants was a series for the support of projects in genetics research and training to be carried on by several universities and the Brazilian Society of Genetics. The new funds are in addition to some \$620,000 which the Foundation has contributed to the development of genetics in Brazil since 1943.

The fact that genetics research in Brazil occupies a position of world eminence is due to the leadership of a small group of scientists who started work in this field in the early 1940's and to their success in attracting to it a number of brilliant younger scientists; among them were Dr. André Dreyfus and Dr. Crodowaldo Pavan of Brazil, and Dr. Theodosius Dobzhansky of Columbia University, who visited Brazil periodically and who aided the training of several of the younger men in his laboratories at Columbia. The present situation is unusual in that the investigators are located in eight different institutions yet achieve unity of planning and avoidance of duplication through personal collaboration and through their national organization, the Brazilian Society of Genetics. Their research interests cover all the important areas: animal, human, and plant genetics.

The eight institutions which maintain laboratories for genetics research and which will share in the new funds are the University of Bahia, the University of Brasilia, the University of Minas Gerais, the University of Paraná, the Faculty of Philosophy, Sciences, and Letters of Rio Claro, the University of Rio Grande do Sul, and the Faculty of Medicine and the Faculty of Philosophy, Sciences, and Letters of the University of São Paulo. Foundation aid is also going to the Brazilian Society of Genetics for its coordinating activities. Under the present plan the Foundation's support will continue for five years and will provide chiefly for equipment that must be obtained abroad and for the expenses of field investigations. The allocations made in 1963 are listed elsewhere in the Report.

At the University of Paraná, Professor Jesús S. Moure is climaxing a distinguished research career devoted to the study of bees by preparing a comprehensive catalogue of Neotropical bees. The book will be a basic reference work containing detailed taxonomic descriptions



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Professor Jesús S. Moure, of the University of Paraná, internationally known authority on tropical bees of the New World, who is completing a definitive catalogue of these species.

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of genera and species, illustrated as needed by line drawings, and listing all known references in the literature bearing upon each description. It is expected that completion of the work will require about three years. The University of Paraná has relieved Professor Moure of teaching and administrative responsibilities to free his time for concentration on the book, and will finance its publication; the Foundation, which has made previous grants for Professor Moure's work, has provided an additional \$25,000 to cover the purchase of special library materials, research and secretarial assistance, and travel for gathering information in certain foreign museums and libraries.

A grant of \$24,000 was made to the University of São Paulo's Institute of Atomic Energy for the purchase of equipment essential for its research in radiochemistry. The reactor plant in São Paulo is one of the principal installations of its kind in Latin America and in addition to its intensive research program is producing isotopes for other laboratories in Brazil and throughout Latin America. Foundation grants have contributed directly and indirectly to the development of the institute since 1942.

A grant of \$15,000 was made in 1963 to the University of Minas Gerais to assist the research of Professor Giorgio Schreiber in the general field of quantitative cytology.

Chile

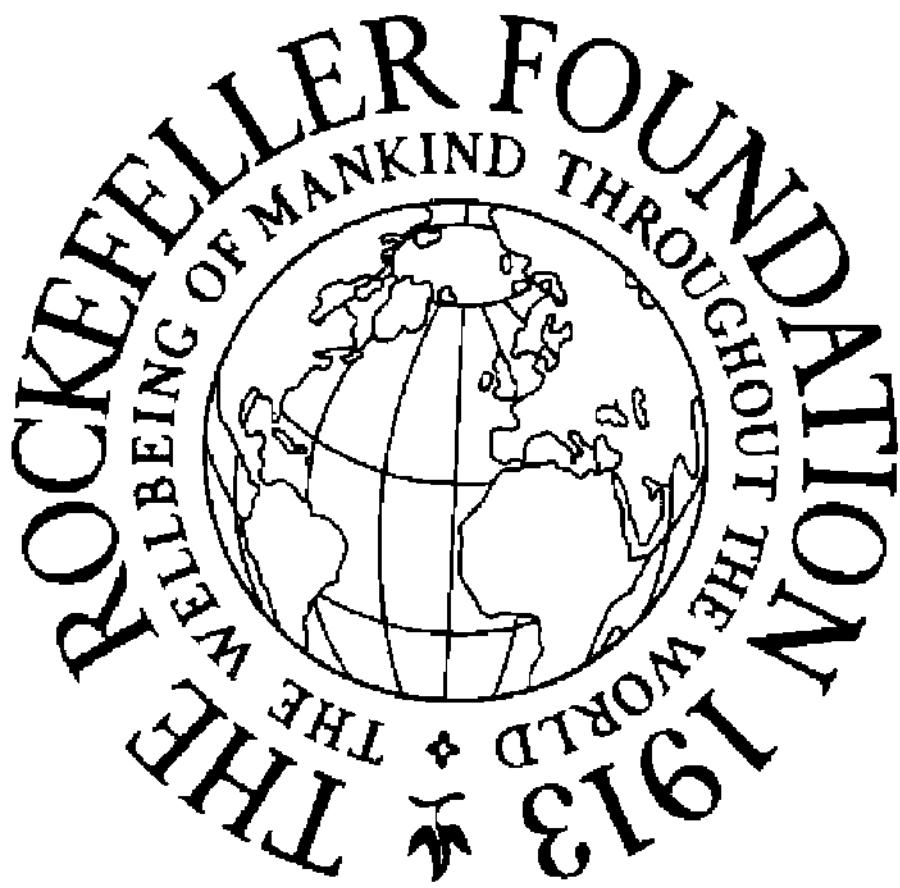
The Chilean Agricultural Program of The Rockefeller Foundation, headquartered in Santiago, cooperates with the research sections of the Ministry of Agriculture and maintains close relations with the colleges of agriculture of four universities: the University of Chile and the Catholic University of Chile in Santiago, the University of Concepción in Chillán, and the University of the South in Valdivia. The work of the program is concentrated on the improvement of wheat, and on pasture grasses and legumes as a basis for increased production in the livestock industry.

Testing new lines of wheat for resistance to stem rust, at an experiment station near Santiago. Eternal vigilance against rust, a major disease of wheat, is part of the price of dependable wheat harvests.

In 1963 for the first time in many years, Chilean farmers harvested enough wheat — more than 1.2 million metric tons — to meet the country's requirements, eliminating the necessity of importing this basic cereal. Favorable weather aided the achievement of this record, but of equal or greater importance were the effects of better production techniques and of the availability of a number of improved varieties adapted to Chile's major agricultural regions, varieties created through research and testing conducted by the cooperative program.

Work on the improvement of wheat is carried on at the Central Experiment Station near Santiago for the northern wheat area, at the South-Central Experiment Station near Chillán for the central provinces, and at the Southern Experiment Station at Temuco for the southern part of the country, where the wheat diseases and growing conditions are different from those in the other regions.

A new problem has been created for the wheat breeders by the increasing use of fertilizers. The ordinary varieties, adapted to conditions of low fertility, grow so tall that they fall over or "lodge" when given a richer supply of plant nutrients. The lodging offsets much of



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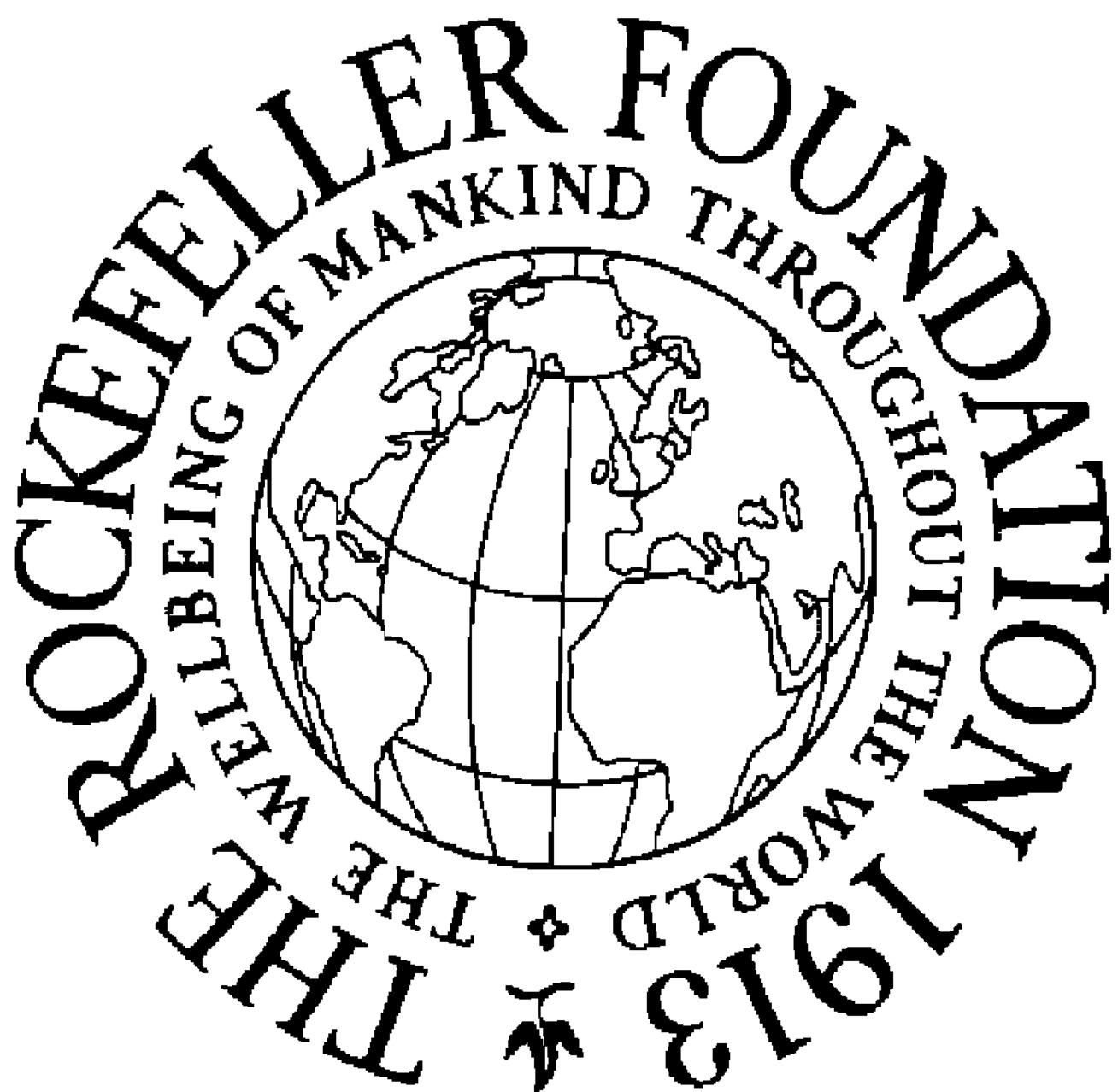
the gain in yield resulting from the fertilizer. Chilean workers, like those in Colombia and Mexico where similar results have followed increased use of fertilizers, are concentrating on the creation of short-stemmed "dwarf" varieties which utilize the nutrients more efficiently and do not lodge. For the past three years the Chilean wheat program has given special emphasis to the development of dwarf varieties, and about 400 advanced generation lines were put into yield tests during the past season.

The new wheats are readily accepted by farmers. The Agrarian Bank, which handles the distribution and sale of seed, sold 1,100 tons of seed of four improved varieties in the northern zone last year, and 800 tons of a single variety in the central zone.

The forage improvement project has completed breeding and testing of new varieties of alfalfa and red clover and distribution of certified seed to farmers began in 1963. These and better strains of perennial ryegrass and orchardgrass are adding to the carrying capacity of Chilean pastures. Demand for seed of the new varieties far outruns production.

More than 70 per cent of Chile's farm land is devoted to livestock but the output of livestock products is not sufficient to meet the needs of the population. The largest deficits are in beef and dairy products. Poor nutrition is one of the important factors responsible for the low production, and is chiefly due to the short supply and low quality of feed in the winter months in some areas and during the summer drought in others. An animal nutrition section has been added to the Chilean Agricultural Program to work with the forage section in seeking better pasture management and in studying the effectiveness of locally available feed supplements. At the Temuco and Santiago experiment stations corrals and buildings are being completed to provide facilities for the section. Small-scale studies have already shown that if even 50 per cent of the increases obtained experimentally could be realized on one-thirtieth of the commercial livestock area, Chile's meat deficit could be eliminated.

During the 1962-1963 academic year, 47 students in Chilean agricultural colleges elected to gain practical field research experience through participation in various aspects of the Chilean Agricultural Program.



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A first step toward greater livestock production is the improvement of animal nutrition through better pastures. The cooperative agricultural program of the government of Chile and The Rockefeller Foundation has for a number of years been testing and breeding grasses and legumes better adapted to Chilean conditions. Here a technician cross-pollinates alfalfa plants to create hybrids suited to the climates and altitudes of Chile.

Since its founding in 1904, the Faculty of Agronomy of the Catholic University of Chile has graduated some 40 per cent of all agronomists trained in Chile. One of the very few privately financed and operated schools of agriculture in Latin America, the faculty holds to high entrance and performance requirements, and in 1963 more than twice the number who could be accepted applied for admission.

The Foundation is helping the faculty to develop a bold project for bringing scientific agriculture to bear on the problems of rural regions. In a community about twenty miles from Santiago the faculty has bought a 740-acre farm to be turned into a rural development workshop where students and faculty members can combine teaching, research, and extension under practical conditions with a fairly large farming population. All students are required to take part of their training at the farm. The faculty has also added courses in agricultural economics with assistance from the University of Chicago and the Chilean government, and has launched a special program of agricultural extension education with emphasis on practical field work with farmers. As a supplement to a previous appropriation of \$191,500, the Foundation has made a new grant of \$96,000 to help equip the experiment station and demonstration farm.

Some four years ago the Faculty of Medicine of the University of Chile set up a committee to encourage junior faculty members to undertake research projects. Among the senior staff there has long been a strong emphasis on research and a number of their projects have won recognition in the form of financial support from the United States National Institutes of Health. Junior staff, many of them recently returned from study abroad, often lacked the minimal basic research tools for continuing work begun during their training aboard and had to seek support from local sources. In 1959 the government of Chile approved a special fund of 100,000 escudos to be administered by a committee of ten senior scientists of the medical school to support research by the younger men. The Foundation contributed an additional \$100,000 to the fund.

Results have been extremely encouraging. More than 120 projects have been approved, and over 100 papers already published; nearly 300 individuals representing 27 departments have participated. The Foundation has now made a new grant of \$80,000 to assist the con-

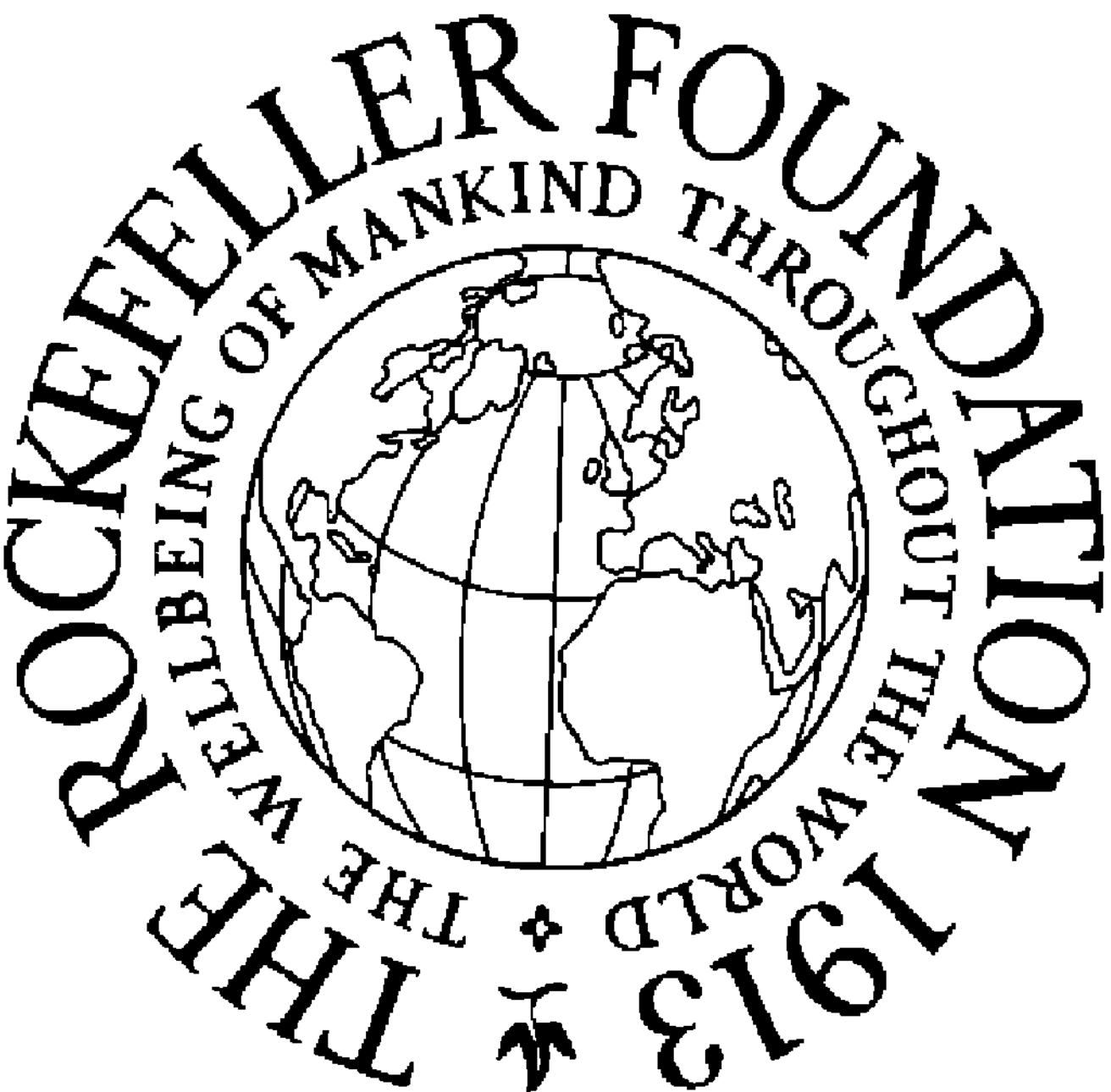
tinuance of the committee's work for another two years. Previous Foundation aid to the Faculty of Medicine of the University of Chile amounts to more than \$1 million.

Colombia

The highlight of 1963 for professional agriculture in Colombia was a ceremony at Tibaitatá on December 23 in which a new organization, the Agricultural Institute of Colombia (ICA), received jurisdiction over the federal government's experiment station system and responsibility for nationwide agricultural research and extension. The first major task of the new agency is to establish at Tibaitatá a center for coordinated attention to research, graduate education, and extension training, a development which is expected to take shape rapidly in 1964.

In ICA are consolidated several former agencies and new functions. The national central experiment station, at Tibaitatá, and 12 regional stations associated with it provide excellent facilities for experimentation and represent all the main climatic and physical conditions under which food plants and livestock are grown in Colombia. The former research agency of the Ministry of Agriculture, the Division of Agricultural Research (DIA), contributes a cadre of experienced and highly qualified administrators and research workers. Through ICA the extension service will receive increased support and a flow of additional personnel as well as more varied and effective means of communicating research results to farmers and ranchers. An institute-sponsored graduate school will lessen the country's dependence on foreign institutions for the advanced training of agronomists and animal scientists. This coordination of all the elements required for continued agricultural advance results from several reviews and surveys in which United States experts participated along with Colombians; implementation of the recommendations is proceeding promptly and enthusiastically.

The Rockefeller Foundation has taken part in the development of professional agriculture in Colombia since 1950. In 1963 some 13 field staff members on permanent appointment were assigned to the DIA, and six members on short-term assignments. The division is organized into 19 research sections: six deal with animal husbandry and veter-



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In a greenhouse at Tibaitatá, near Bogotá, a plant pathologist inoculates potato plants with spores of the fungus which causes late blight disease, a worldwide hazard of this crop. Investigators in Colombia and Mexico, in collaboration, have been particularly successful in creating hybrids with high levels of resistance to infection from the late blight fungus.



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In a greenhouse at Tibaitatá, near Bogotá, a plant pathologist inoculates potato plants with spores of the fungus which causes late blight disease, a worldwide hazard of this crop. Investigators in Colombia and Mexico, in collaboration, have been particularly successful in creating hybrids with high levels of resistance to infection from the late blight fungus.

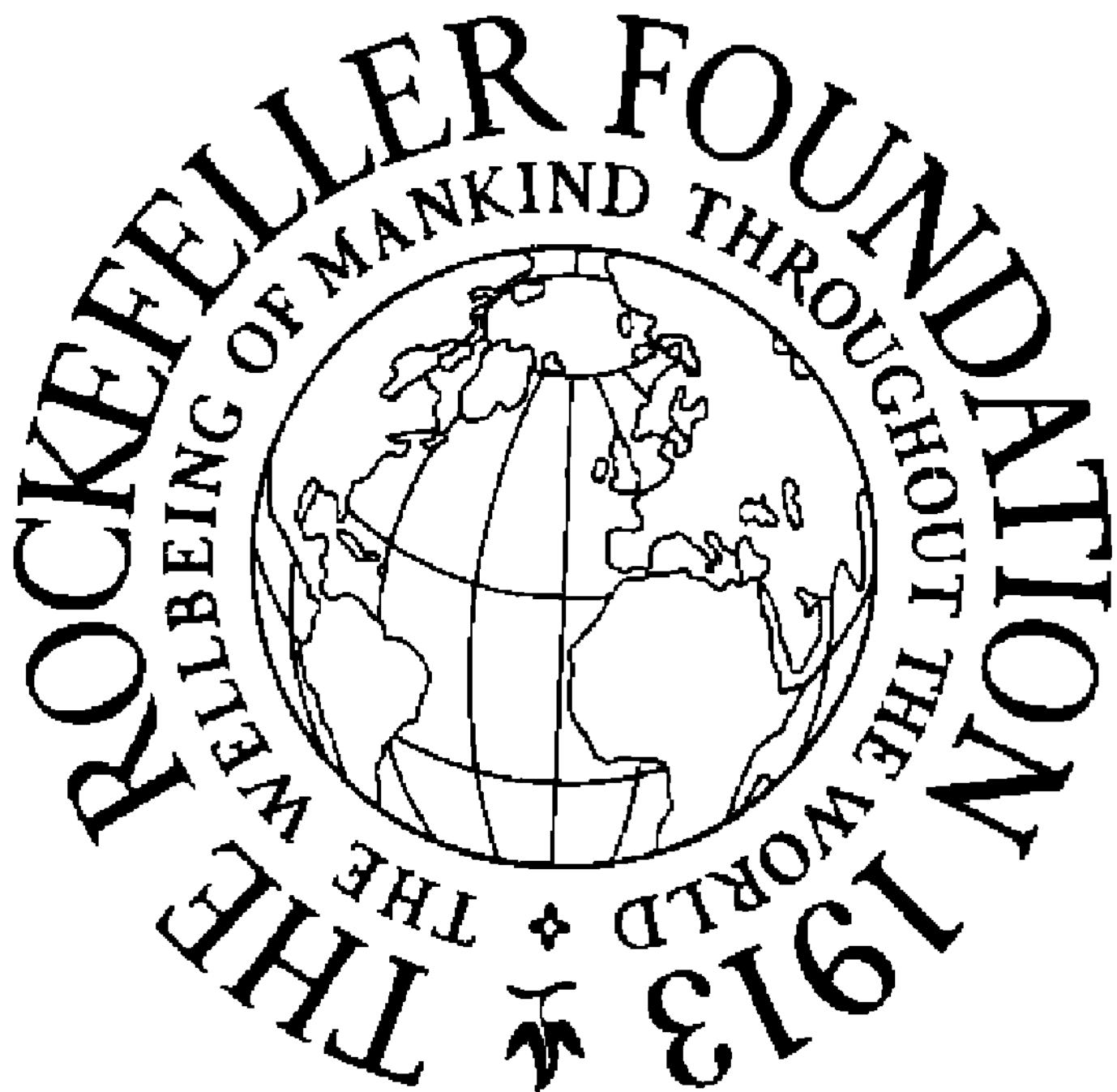
first full year of operation. Preliminary results indicate that audio-visual methods must be stressed and that field days, when farmers can visit the demonstration farms to "see for themselves," are extremely effective.

Though Colombia is historically a cattle country, the average diet of its people is deficient in animal proteins, and livestock production is low. The country has large areas with extensive cattle operations and others where the outlook for livestock industry is favorable. To increase production in presently used areas and to expand it into new regions, efficiency must be increased through the use of better breeding stock, animal management, nutrition, and disease control.

The Division of Agricultural Research has a section on veterinary science and others devoted to beef cattle, dairy cattle, sheep, swine, and poultry. As members of the first such research unit in the country, the investigators had to start practically from the ground up except in regard to the disease of animals.

One of the most important barriers to the realization of the full potential of the Colombian livestock industry is disease. If animal diseases could be controlled, livestock could be the country's largest source of revenue and an important factor in improving the nation's physical and economic health.

Equally important as a barrier to production is poor nutrition; if the animals were more adequately fed their natural vigor would defend them against many types of infections. DIA has been conducting studies on forage and pasture grasses and legumes for a number of years. The crux of the problem is not in forages — though these can be greatly improved — but in the high cost of supplemental energy feeds. Grain prices are especially high and since a large percentage of the grain produced is needed for human consumption, feeding it to livestock is in general uneconomical. Corn is about equal in price to milk. The search for grain substitutes which are cheaper and can be grown and processed locally is an important part of the work of all the sections. It now appears that yuca and possibly other sources of energy such as potatoes can be substituted for the more expensive grains. Coffee meal, sugar cane and oat silage, sugar by-products like molasses, and soybean and sesame oil meal are also being investigated, with varying degrees of success.



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Veterinary scientists associated with the cooperative Colombian Agricultural Program take blood from a calf at one-minute intervals in a study of altitude disease. In many mountainous countries this is a serious disease at high elevations, permanently affecting the heart.

Many management practices depress production. In dairying, for instance, the price of milk is so high that it is uneconomical to feed milk to calves and they are usually slaughtered at birth. Animals for herd replacement are consequently expensive and scarce. The practice of replacing milk with dry feed for calves has been investigated under Colombian conditions and shown to be feasible; already some of the more progressive farmers are adopting it.

During 1963 DIA sponsored a National Poultry Congress and a National Swine Congress, the first ever held. Excellent attendance showed increasing interest in the technological development of these industries. More production and higher per capita consumption of meat would be very beneficial to the majority of the Colombian people, who now must eat reduced amounts of meat, primarily because prices, particularly of poultry and pork, are extremely high in relation to family income.

Progress in research on food plants continues at an encouraging rate. Perhaps the highlight of the year was the commercial release of Miramar 63, a multilineal wheat — the first such variety ever released for sale to farmers. The multilineal variety is a defense against rusts. It consists of ten lines which are individually resistant to different races of rust but which in grain quality, height, growing period, and other agronomic characteristics are uniform. It can be planted and harvested like a conventional single-line variety but it should be useful for a much longer time than the standard varieties in the face of changing races of rust.

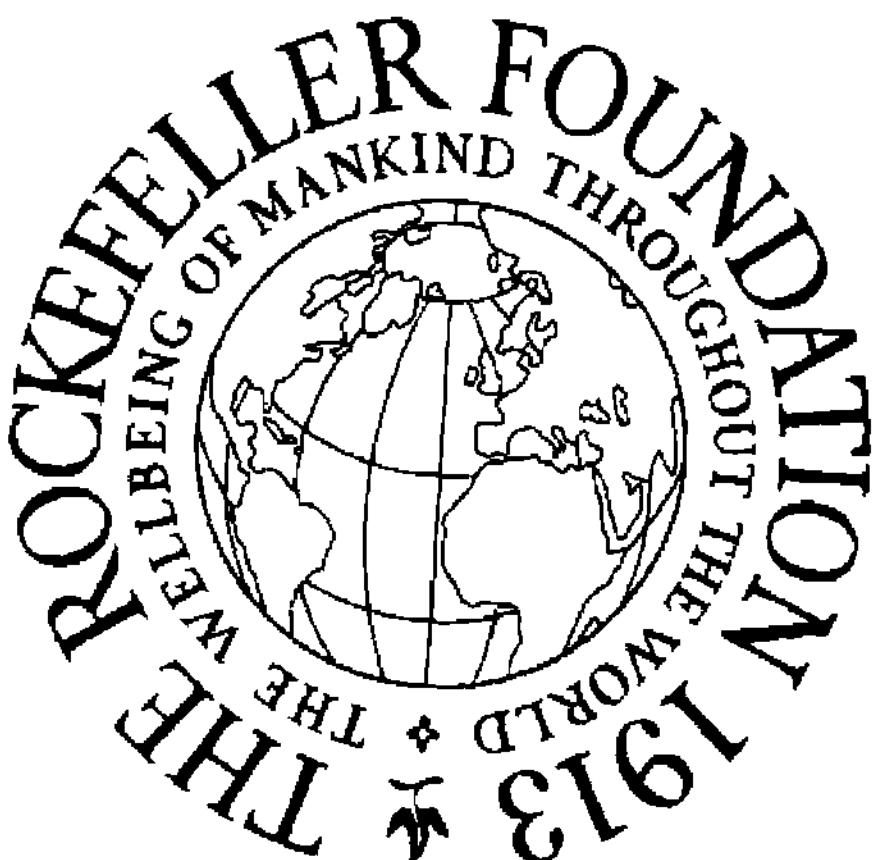
Another advance was the completion of special facilities for the study of potato storage. The market price of potatoes in Colombia fluctuates as much as 1,200 per cent in the course of a year. Better storage on the farm at costs which average farmers could afford would stabilize prices and increase farm income. Chemical sprout inhibitors are one method being tried to reduce losses in storage. Previous research on potatoes has resulted in varieties which are highly resistant to the chief disease of potatoes — late blight — and solution of the storage problem would complete the production cycle.

New grants made in 1963 in Colombia were centered largely on the University of Valle, one of the institutions selected for special

cooperation under the Foundation's program for assistance to certain emerging centers of learning. However, a number of long-term grants made previously to other institutions continued in force and payments were made on them. For example, the University of the Andes in Bogotá received nearly \$155,000 in continued support of its School of Science, and over \$17,000 for its Center for Studies in Economic Development. The University of Antioquia in Medellín was paid about \$54,000 for the development of its Inter-American School of Library Science and for three summer seminars on library training.

The University of Valle, located in Cali, has an enrollment of over 1,300 students and offers degrees in medicine, engineering, economic sciences, and the humanities and education. It was founded at the end of World War II as an independent institution under private auspices but with support from state and federal agencies as well as from private sources. Students are admitted on the basis of entrance examinations and interviews, and must maintain satisfactory grade levels to advance through the courses.

Two years ago the university became one of the first in Latin America to reorganize its academic structure by setting up a two-year College of Basic Studies through which all students must pass before entering one of the professional schools. The new college represents a fundamental change from the conventional Latin American university pattern in which each professional school provides all the instruction for its students from entrance to graduation. The basic college curriculum comprises three main groups of courses: science, humanities, and social sciences. In the science group, two courses in mathematics are given to meet the needs of students of engineering and of medicine and the other professions; and the emphasis given chemistry and biology is similarly adapted to students with different professional interests. In the humanities, all students take courses in cultural history (two years), Spanish language and literature, and a foreign language, the latter being taught by the laboratory method using equipment such as tape recorders for securing proficiency in the spoken idiom. The course in social sciences is required now of students in medicine, architecture, and economic sciences, and next year will be taken by all classes. It consists of three semesters divided between economics and sociology. In all courses the seminar method



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All students entering the professional schools of the University of Valle are first required to pass through the university's College of Basic Studies. In foreign language instruction, an integral part of the college's program, the laboratory method and modern equipment are used.

is employed, and laboratory and practical experience are emphasized throughout.

The adaptation of the concept of a basic college to Colombian conditions has involved numerous problems. The provision of teaching materials like textbooks and supplementary readings in Spanish for courses which hitherto have not existed is in itself a major undertaking. An additional temporary difficulty in 1963 was the fact that a building to house the new college was not completed in time for the fall term. Nevertheless the venture has won general support and approval and seems well on the way to success. It has also attracted considerable attention from other universities in Colombia and several are planning similar reorganization of their curricula.

The Rockefeller Foundation has assisted the establishment of the College of Basic Studies in a number of ways. It contributed to the funds for a building for humanities and linguistics, helped buy library books and equipment, and assisted with special teaching materials for the physics-mathematics course. In addition, it has defrayed most of the expenses of the university in appointing nine visiting professors in the humanities, social sciences, and biology, a number of whom are working directly in the new courses.

The university is also sponsoring a pioneering venture in health and medical care that has already attracted international attention — the Pilot Health Center at Candelaria, a village of about 4,000 population some twenty miles from Cali.

The Candelaria health center, a twenty-bed hospital, was taken over by the Department of Preventive Medicine in 1958 as a place where first- and second-year residents could fulfill part of the Colombian licensing requirement of a year's experience in a rural medical service. The association of the center with a top medical school and teaching hospital soon opened opportunities for expanding the objective from the operation of a good rural out-patient clinic to an experiment in integrated medical service of curative and preventive medicine, environmental medicine, and social welfare, through the creation of an organization with regional health concerns.

The project has now grown into an across-the-board community development effort stressing experimentation on methods and procedures which may be generally useful in improving rural medicine. Other divisions of the university have seen possibilities in using Candelaria for exploratory studies. The Faculty of Medicine as a whole is now sponsoring the center and several departments share the supervision of the work. The government has assigned the center responsibility for the medical care not only of the village but also of the surrounding district with a population of about 18,000. The Department of Sanitary Engineering is dealing with health hazards in the village, particularly with a badly contaminated stream which flows through the center of the town. Students from the Faculty of Architecture designed a "build-it-yourself" bath-toilet-laundry unit which many families have adopted, paying for materials on a five-year installment plan. The Faculty of Architecture is undertaking a study of the

town and the surrounding area as a whole as an exercise in city and regional planning.

The center is being used for the training of paramedical personnel. Two classes of auxiliary nurses in public health have completed the 11½-month course and are at work in other communities. Enough midwives have been trained so that municipal officials could bar from practice those who have not taken the course and been licensed.

The people of Candelaria are becoming more conscious of health and nutrition needs. A dramatic incident of a severely malnourished little girl who was restored to health in the hospital only to relapse tragically when she returned home, so stirred the community that upon their own initiative the citizens set up a nutrition center for children. They raised the money to furnish and maintain a ten-bed "Casita" for rehabilitation, for which the center provides space, nursing, and daily physician visits. The Candelaria high school called on a nearby agricultural experiment station for help in instituting a garden club project for boys which has completed two highly successful seasons.

The experimentation at the center is accompanied by continuous surveys of the health status of the community. A small study to check the accuracy of census figures for the area disclosed the disquieting fact that the birth rate is probably a good deal higher than the 45 on which planning had been done. More than 40 per cent of the children have not had smallpox vaccination and two-thirds of those under three years of age are malnourished as indicated by body weight. Information like this is essential as a guide to clinical and community programs, and as a benchmark for the evaluation of results.

The provision of medical and health care in developing countries, especially in their rural areas, is a task of immense magnitude for which most of these nations can recruit tragically inadequate numbers of fully trained physicians and nurses. Systems need to be developed by which the efforts of the professionals are multiplied through the use of auxiliaries competent to conduct many of the routine curative and preventive procedures. General rural improvement also depends on plans through which the professional in medicine can pool his skills with those of experts in other disciplines for concerted attacks on the causes of rural poverty and ill health. Experiments



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Building one of the bath-toilet-laundry units in Candelaria; these can be erected by the family and paid for over a five-year period. This project is part of a community-wide development plan to improve nutrition, health, and the amenities in ways which can be adopted by other Latin American municipalities.

like the one in Candelaria, and others in Africa and India which the Foundation is also supporting, hopefully may point to ways in which medical education should be modified to produce physicians and nurses ready and competent to meet the challenge.

In 1963 The Rockefeller Foundation had six staff members assigned to Cali. Much of the time and attention of several of them was devoted to the Candelaria project; one collaborated in the university's research program on arthropod-borne viruses. Total grants to the university for the College of Basic Studies, the Faculty of Medicine, the Faculty of Economic Sciences, and other units amounted to \$611,376.

Costa Rica

The Latin American Association of Plant Science is a professional organization whose members represent all the mainland Latin American countries and all the scientific disciplines concerned with basic and applied research for the improvement of food crops. The association will hold its sixth international symposium in Lima, Peru, in November, 1964. A grant of \$25,000 from the Foundation will help meet travel expenses of selected delegates and executive members, and aid publication of the proceedings.

The symposium is expected to be of considerable interest to the scientific community of Latin America as an instrument for closer alliance of scientists, for broader dissemination of research results, and for joint planning of cooperative projects to improve agricultural development. Progress toward some of these aims is reflected in the fact that more than 400 specialists are expected to attend the Lima congress; by comparison, only 15 plant breeders were present when the first meeting of this triennial series was held in Mexico in 1949.

The growth of the scientific community in Latin America, and the increasing public recognition of its importance, is demonstrated also by the fact that while the first meeting was organized and underwritten by the Foundation, the series now is directed by its own association and draws its financial support from a variety of public and private sources. For example, the Argentine provided about \$75,000 toward the 1961 Buenos Aires meeting, and approximately \$110,000 will come from sources in the host country of the 1964 symposium.

The Lima meeting will be the first held since formation of the permanent secretariat of the association, which established its headquarters in San José, Costa Rica, with the collaboration and assistance of the Inter-American Institute of Agricultural Sciences.

El Salvador

The School of Medicine of the University of El Salvador, in San Salvador, is working on long-range plans for building a new physical plant which will permit doubling the entering class from 50 to 100. The expansion will also allow the school to fulfill its commitment to serve as a graduate training center for all of Central America.

In the interim, the Department of Pathology has been given new quarters in a renovated building large enough to permit laboratory instruction of the third-year students in a single section rather than in divided groups. The Foundation has made a grant to cover part of the dollar costs of additional teaching equipment required to accommodate the larger section.

Included in the grant is an amount that will enable the school to continue the visiting professorship of Dr. Noel David Burleson, an anthropologist, in the Department of Social and Preventive Medicine. In addition to his work in the department, Dr. Burleson is active in the Salvadorean Demographic Association, an organization concerned with El Salvador's population problem.

The amount of the grant is \$25,400; it brings to over \$320,000 the total appropriations which the Foundation has made to the University of El Salvador since 1922.

Mexico

Two new appropriations were made in 1963 in Mexico under the Foundation's program toward the conquest of hunger: \$1 million for the International Center for Corn and Wheat Improvement and \$120,000 for the Graduate School of the National School of Agriculture, both of which are in Chapingo. Substantial payments were also made on previous commitments, among which the following are representative: to the Colegio de México, Mexico City, for its work in international relations, history, and linguistics and literature, \$109,077; to the Mexican Center of Writers, \$15,000; to the University

of Nuevo León, for its Center for Economic Research, \$43,923; and to the University of the State of Veracruz, for its Faculty of Humanities, \$20,677.

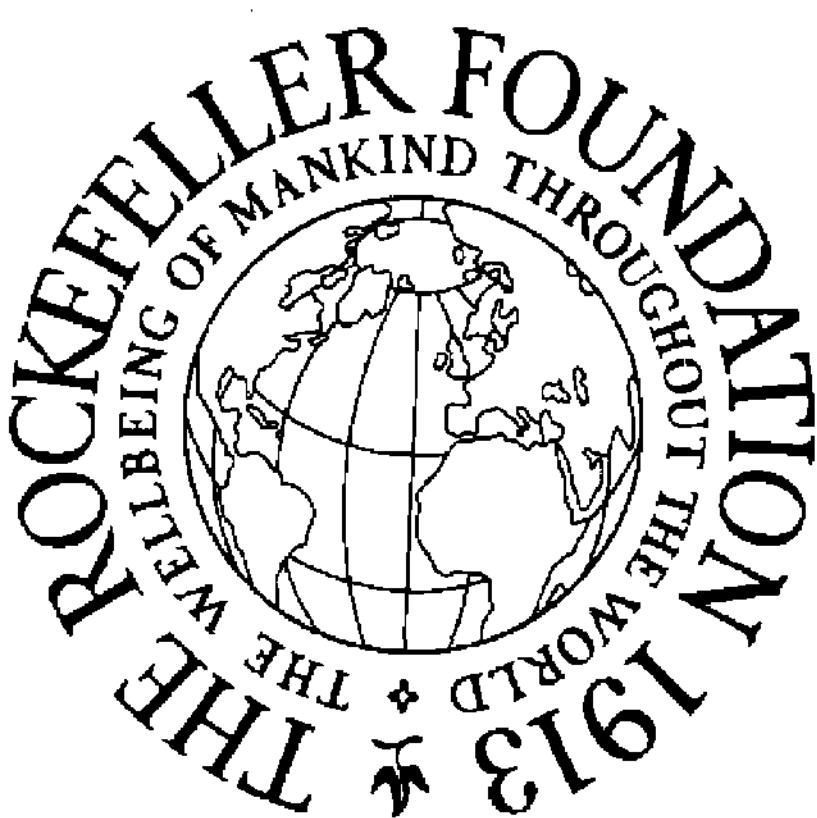
Other grants from prior year appropriations were made to the Children's Hospital, Mexico City, \$46,000; to the University of Guadalajara for its Faculty of Medicine, \$39,467; to the National University of Mexico, for its departments of biochemistry and pathology, Institute of Chemistry, and School of Veterinary Medicine, \$78,414; to the National Institute of Cardiology, Mexico City, \$25,000; and the National Institute of Nutrition, Mexico City, \$54,678.

The Foundation's work in agriculture and agricultural education, and the growing international importance of the projects which began in Mexico twenty years ago, have been reviewed in general terms in another section of this Report (pages 38-48). This discussion will deal with some of the specifics of the various crop improvement efforts.

The Foundation conducts international projects for the improvement of the world's four most important foods — corn, wheat, potatoes, and rice. The work on rice is centered at the International Rice Research Institute in the Philippines and is discussed elsewhere. The other three projects, with headquarters in Mexico City, have grown from and are still closely allied with the improvement programs for corn, wheat, and potatoes now carried on in Mexico by the National Institute of Agricultural Research of the Ministry of Agriculture.

The projects give major emphasis to the training of young scientists, the production and distribution of materials and information immediately useful, and the provision of technical and financial support to research centers for the three crops in other countries.

Under this program some 21 specialists studied crop improvement in Mexico in the 1962-1963 season. Three were natives of Mexico; the others came from Guatemala, Chile, and Argentina in Latin America; from India and the Philippines in the Far East; and from Afghanistan, Cyprus, Ethiopia, Iran, Iraq, Libya, Pakistan, Turkey, and the United Arab Republic in the Middle East. Most of those specializing in corn registered in the Graduate School of Agriculture at Chapingo and did the research for their theses at an experiment station operated by the National Seed Commission. Those working on



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Ecuadorian collaborators in the Rockefeller Foundation-sponsored international potato improvement project take notes on an experimental potato planting at a station near Quito.

potatoes conducted research at the experiment stations of the National Institute located at Chapingo and Toluca. The wheat specialists worked at a number of stations of the National Institute, spending the longest time at the CIANO station in the northwestern state of Sonora.

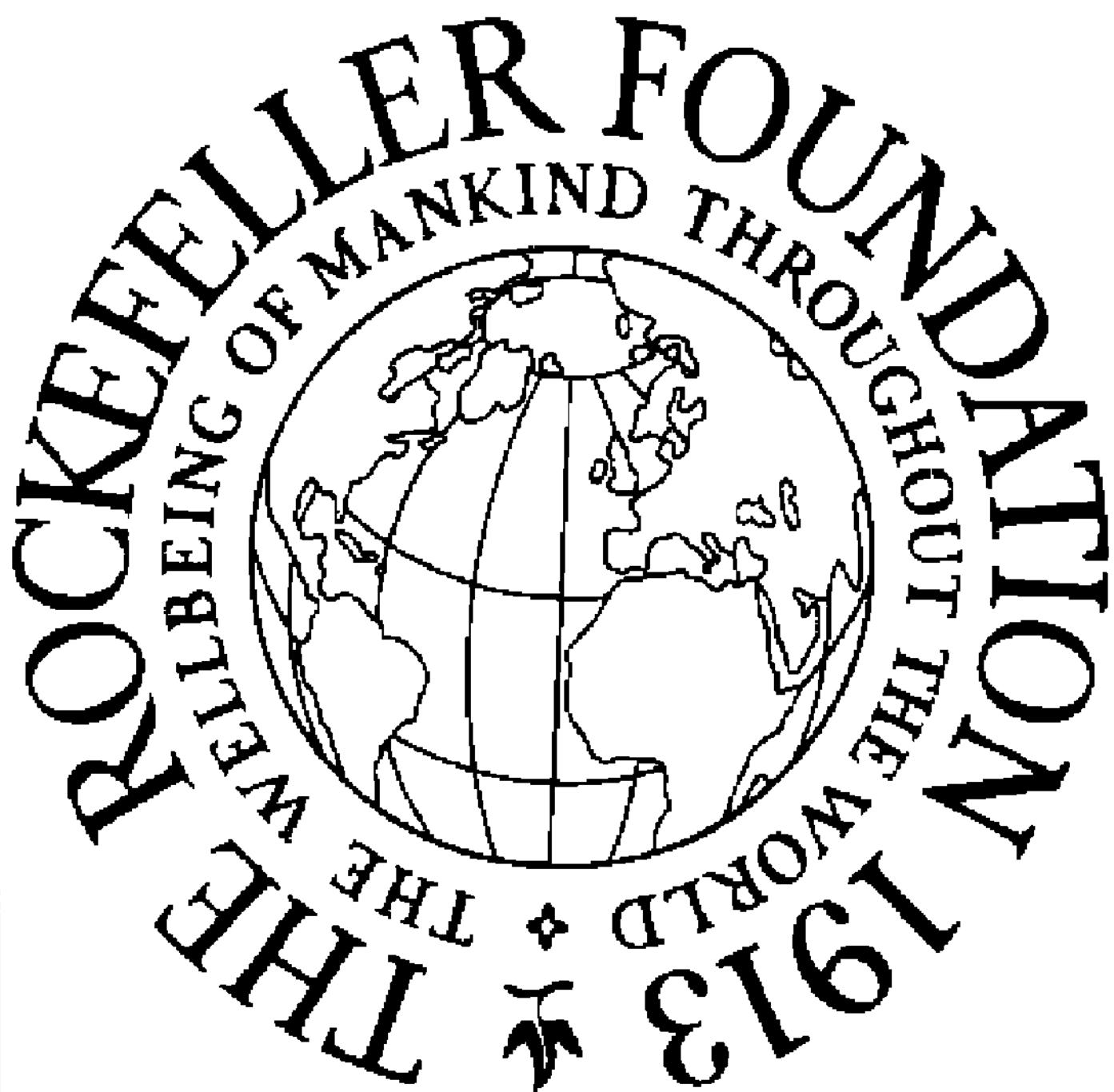
Basic breeding materials for all three crops have been widely distributed to investigators in other countries. Corn lines and hybrids were sent in 1963 to 37 different countries and to 17 states in the United States. The wheat project grows and packages the seed for two uniform tests: the Inter-American Yield Nursery, sent to collaborators in 18 countries, and the Near East-American Yield Nursery, which goes to 25 investigators in the Middle East, Colombia, and Mexico. The potato project operates a germ plasm bank of tuber-bearing *Solanum* species with more than 500 entries, most of them viable seed and tubers, to exploit the great diversity of this species found in Mexico. It also cooperates directly with other potato research cen-

ters in Latin America, Canada, West Germany, the Netherlands, and at three locations in the United States; Beltsville, Maryland; Madison, Wisconsin; and Riverside, California.

Improved seeds of varieties produced in Mexico and Central America are proving immediately useful in a number of countries without further breeding work. For instance, Tiquisate Golden Yellow corn showed in tests that it could be used successfully in Thailand, and a quarter-ton was shipped there as a basic seed stock for commercial production. Similarly, a ton of the Mexican tropical corn hybrid H-507 was sent to the Dominican Republic for commercial-scale production. Wheat lines from Mexico have shown adaptability to conditions in Pakistan, India, and a number of Middle Eastern countries, and in Guatemala and other Latin American countries. Progress in selecting and breeding potato varieties with high resistance to late blight in Mexico is contributing to better control of this disease in at least a dozen other countries.

In all three projects the core of the work is basic research on internationally important problems of the crops. For corn the research is concentrated on exploiting the vast collection of germ plasm accumulated during twenty years and maintained as viable seed in refrigerated storage at Chapingo. There is some evidence that the breeding of corn-hybrids from presently used base strains has gone about as far as it can in certain countries, especially the United States, and that further progress must come from the employment of wider crosses to other gene sources. In other countries — for instance in Africa — sources of genetic resistance to certain important diseases and pests cannot be found locally and must be sought elsewhere. It is considerations like these which have prompted the heavy demand for seed from the Mexican collection by investigators all over the world. Most of the theses and research projects in the corn program are directed to analysis of the germ plasm bank and to studies of the employment of the material in breeding work.

Research on wheat is presently centered on dwarf types, on the durum wheats, and on the ever-present stem rust disease. Less than ten years ago the short-stemmed wheats were regarded as of little potential value because these mutants were thought to have poorly developed root systems and great susceptibility to drought. Further



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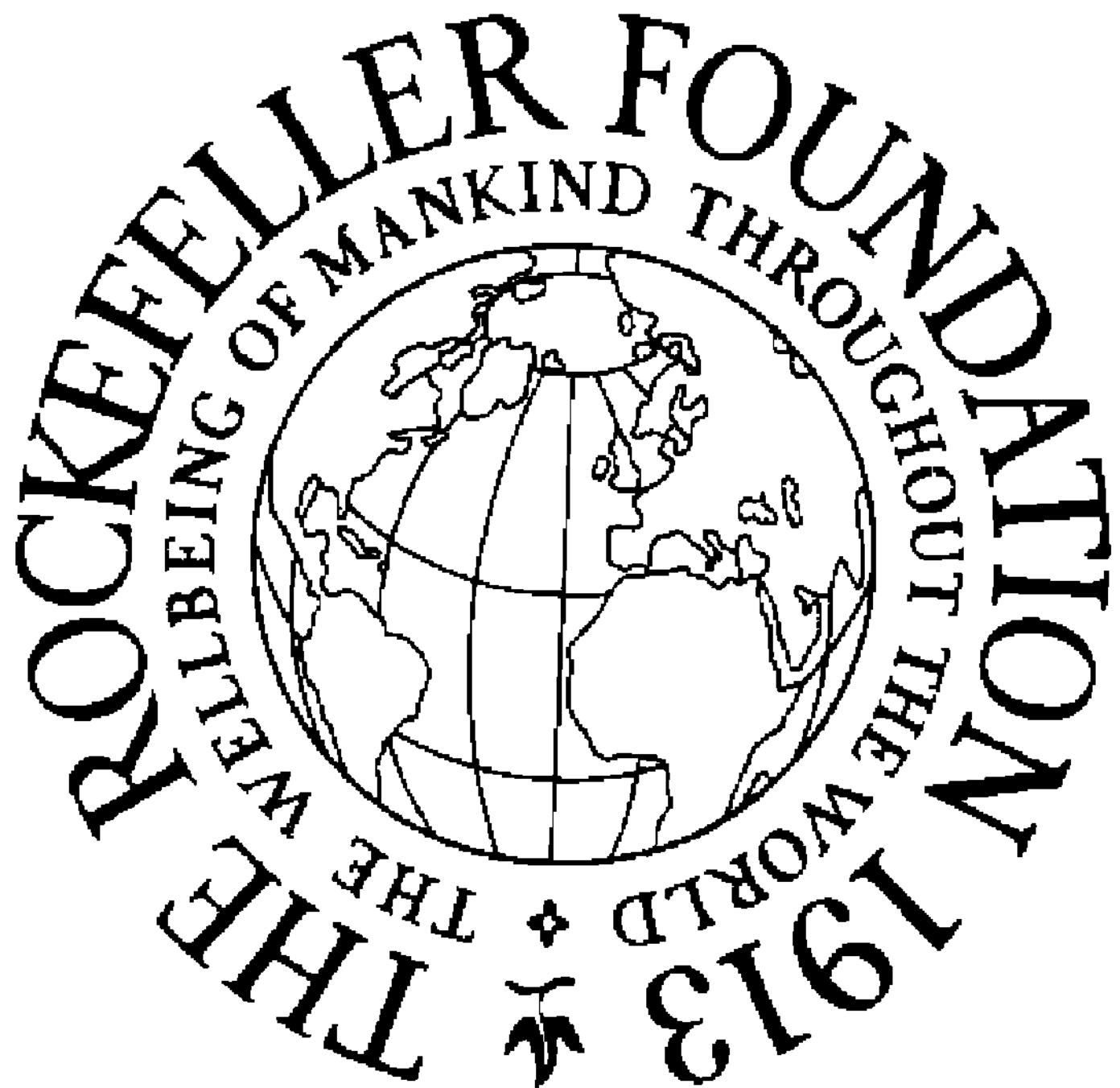
The international maize improvement project, headquartered in Mexico, cooperates with corn breeders all over the world. In Nigeria certain Mexican and Caribbean maizes, furnished by the project, are proving dramatically useful in upgrading local varieties through hybridization. These Nigerian maize breeders work at a station near Ibadan.

work with dwarf wheats, much of it done in Mexico, has disproved these assumptions as regards wheat grown under irrigation. Dwarf types have proved so amazingly high in yield and so resistant to lodging that in Mexico they have almost entirely supplanted the conventional long-strawed varieties for commercial irrigated production. There are some indications that dwarf types can also be developed for dryland planting.

Durums — the "spaghetti" wheats — have been the only class of marketable wheat in short supply in the world during the past twenty years. This situation is largely the result of the inflexibility of this crop, which in the main is determined by the limitations of the varieties available to the producer. Present durums are largely of spring habit, tall growing, susceptible to lodging, and extremely susceptible to stripe rust and to frost. The development of good dwarf durum varieties — which is fast approaching reality in Mexico — will revolutionize the durum production of the world. Once the best dwarf types are isolated, they can be crossed further to improve their stripe-rust resistance and increase their earliness to avoid frost. Both improvements are being made by transferring genes from bread wheats through backcrosses.

The success of the dwarf wheat types for irrigated plantings in Mexico has been involved in a turn of experimentation in another direction, namely, the development of composite or multilineal varieties to deepen the defense against the world's greatest hazard to wheat production — stem rust. In general terms, two defenses against stem rust are possible: one is to breed into a single variety the broadest possible range of resistance to changing races of stem rust; this has been the procedure in the United States and other major wheat growing countries. The other is to blunt the attack of the rust pathogen by mixing a number of varieties with genetic resistance to a large array of rust races, taking care in the meantime that the 10 or 12 genetically different varieties in the composite are phenotypically uniform, that is, have the same growth period, height, baking and milling quality, and other characters, so that the farmer can handle the mixture as a single variety. When the rust race pattern changes, as it will invariably do, only a fraction of the varieties in the composite will be susceptible.

Using long-strawed wheats, such a composite variety was created in Mexico about five years ago — the composite Yaqui. During that



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Wheat specialists from the Middle East thresh individual plants selected from segregating populations at a Mexican experiment station. Twenty-two specialists from Middle Eastern countries have received practical experience in wheat improvement in Mexico under the Rockefeller Foundation-sponsored international wheat improvement project.

period, however, the phenomenal success of such dwarf varieties as Pitic 62 and Penjamo 62 has eliminated from commercial production all the wheats of conventional height, including Yaqui. Also during this period the population of rust races has remained remarkably steady; the older long-strawed variety, Lerma Rojo, for instance, has continued resistant to the races of stem rust prevalent in Mexico for 11 years. The creation and release of a composite variety consisting of dwarf types has therefore been postponed until it should be needed. There is now evidence that the rust race population is changing and that the release of the "Sonora" (dwarf) composite must be planned for the near future. Fortunately, the necessary experimentation has been done and the foundation seed stocks are ready.

In Colombia, as stated on page 112, a long-strawed multilineal or composite wheat variety has already been released for commercial use; in that country dryland plantings are the chief type of production and the need for the dwarf types in irrigated production is not acute.

Around the world, wherever wheat is grown, stem rust is by far the most serious limitation on wheat yields. Again speaking in general terms, if the concept of the multilineal variety, whether in conventional or dwarf form, proves to be an effective answer to the attacks of new rust races, the experimentation led by Rockefeller Foundation scientists in Mexico and Colombia — but principally in Mexico — which gave it practicality, will be of global importance.

Research on potatoes is almost exclusively concerned with the fungus which causes late blight disease. Most of the practical problems of potato production in Mexico are well on the way to solution through the breeding of a number of varieties with such high resistance to late blight that small farmers can grow a crop without the use of expensive sprays. A plan for producing virus-free certified seed potatoes is in successful operation and has eliminated Mexico's dependence on foreign seed sources. These and other measures have brought the potato out of the luxury class and put it on the tables of average families.

Architect's model for the "Chapingo complex" planned to house the National School of Agriculture and its Graduate School, the International Center for Corn and Wheat Improvement, the National Institute of Agricultural Research, and the staff of the nearby national central experiment station, El Horno. Construction will begin early in 1964.



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Ever since the "great hunger" in Ireland in the 1840's *Phytophthora infestans* has been under intensive investigation, but it was not until the sexual cycle of the fungus was discovered in Mexican materials in the 1950's that effective progress could be made in studying its genetic and other variations. A number of Mexican specialists trained in the Foundation's program are now devoting their attention to exploiting this breakthrough.

Mexico, and particularly the Toluca valley, is in a very real sense the world's center for testing potato strains against the late blight pathogen because in the valley, where the fungus may have originated, the disease it causes has reached its most virulent form. Potato varieties that are reasonably resistant to milder attacks of the disease in North America and Europe succumb with uniform regularity in Toluca. For this reason potato breeders from the United States, Canada, Germany, the Netherlands, England, Japan, and India send their materials to Mexico for testing, and gain more information about their resistance in a single season than they would in many plant generations at home.

As recounted in an earlier section of this Report, the broadened programs for corn and wheat improvement started in Mexico some twenty years ago have been given an institutional structure through the creation of an International Center for Corn and Wheat Improvement, to be located on the campus of the National School of Agriculture at Chapingo. The agreement for the creation of this center was signed by the president of Mexico and the president of The Rockefeller Foundation in October, 1963 (page 40). The international project for potato improvement will continue as before, with its major investigations conducted at Chapingo and at Toluca.

Previous reports have summarized the development of the Foundation's cooperative agricultural program in Mexico from its small beginning in 1943 to its consolidation into a single research entity in the Ministry of Agriculture — the National Institute of Agricultural Research. Only one Foundation staff member remains as a "research section head" in the institute; all the other posts are occupied by Mexican scientists and administrators, many of whom "graduated" from the Foundation's program and took their advanced degrees on Foundation fellowships and scholarships.

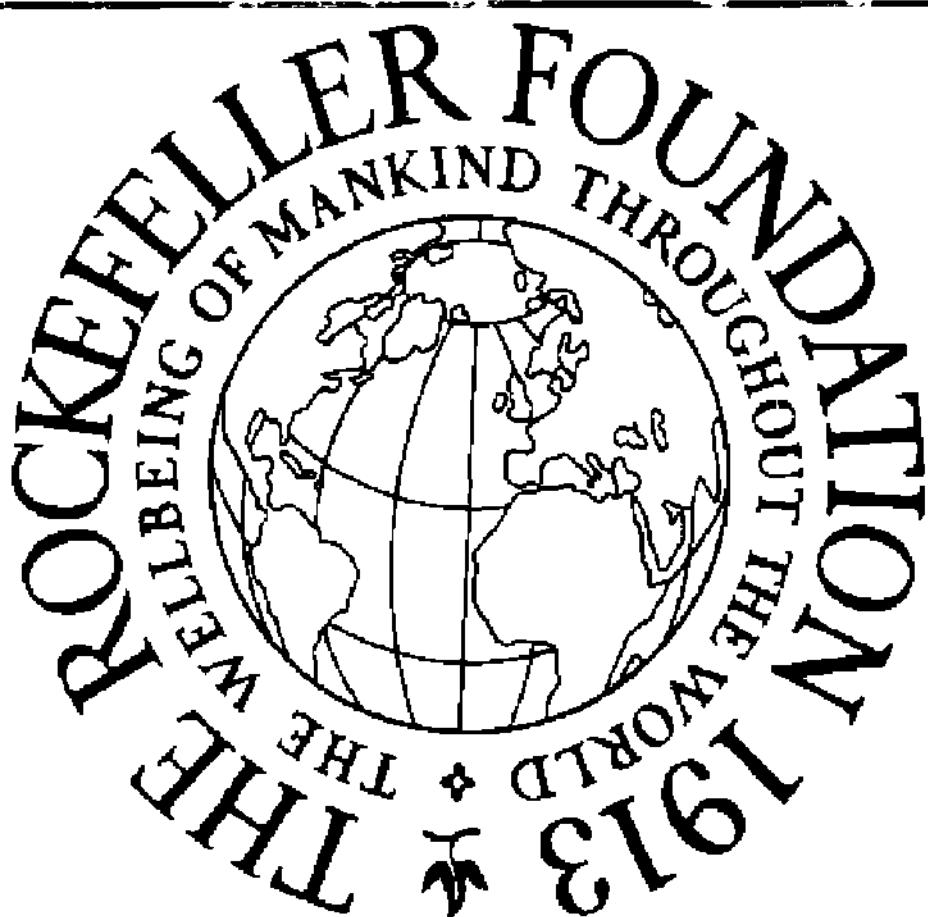
Paralleling its consolidation of plant industry research, the ministry has brought together its work on animal improvement into a new entity, the National Center for Animal Research, located at Palo Alto outside Mexico City on the road to Toluca. Three Foundation staff members were affected by the reorganization. One is serving temporarily as director of the center and two are research section heads, for animal pathology and animal nutrition, respectively. It is significant that the oldest of the three animal research sections, that on poultry, is headed by a Mexican scientist.

Through its phenomenal increases in production of the basic cereals, Mexico is now in a position to use the grain left over after the human population has been fed to produce high-quality beef, milk and dairy products, chickens, and eggs. Long continued research under Foundation leadership in the improvement of pasture and forage grasses and legumes has laid the basis for improved animal nutrition on the range; the availability of grain as supplemental feed for increasing the quality and nutritional value of animal products will complete the work on an improved production cycle.

Peru

In the 17 years since it was created, the Faculty of Veterinary Medicine of the University of San Marcos, in Lima, has become one of the outstanding schools in this field in Latin America. It is housed in a modern physical plant that provides excellent classroom and laboratory facilities for both teaching and research. More importantly, it was the first professional school in the 400-year-old university to put its teachers largely on full time. The present staff totals 29 professors and 16 instructors for an undergraduate enrollment of approximately 225 students; 16 professors and 8 instructors are on full-time appointments. Twenty have had advanced training abroad, of whom 14 are former Rockefeller Foundation fellows and scholars.

From this excellent base the Faculty of Veterinary Medicine is extending its influence beyond Peru to other parts of the region. In addition to accepting foreign students, since 1960 it has been exchanging professors with schools in two other countries. Early in 1963 the school, with assistance from the Foundation, organized a two-month intensive advanced course in the clinical medicine of large animals in



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Veterinary scientists at the University of San Marcos, Lima, examine a guano-producing sea bird for parasites. Created shortly after the end of World War II, the Faculty of Veterinary Medicine at San Marcos has become one of the outstanding Latin American centers in its field.

which six veterinarians from other Latin American countries participated along with Peruvians. Encouraged by the success of this course, officials of the school are now developing a plan for giving intensive postgraduate training in one-year terms to a limited number of carefully selected veterinarians from different countries, as a first step toward creating a curriculum for the award of advanced degrees. The Foundation is assisting this development with a 1963 appropriation of \$138,000.

Trinidad

At the angles of a triangle extending from Belém, Brazil, to Cali, Colombia, to Port-of-Spain, Trinidad, are field laboratories devoted to the study of arthropod (or insect) borne viruses, each located at a focal

point of activity of these disease agents. The Rockefeller Foundation cooperates in the support and operation of the three units, as it does with similar field stations in other parts of the world.

The Trinidad area is transitional between the South American tropics and the Caribbean islands and Central and North America. Viruses are found in Trinidad which are similar to or identical with those of the Amazonian rain forests around Belém, and others which seasonally cause epidemics in the southern part of the United States and even further north.

Since 1953 the Trinidad laboratory has maintained an intensive monitoring program to detect, in so far as possible, the ebb and flow of different viruses. Past epidemics of diseases caused by them have been charted through the study of antibodies in the bloodstream of large samples of the human population, and cases of undiagnosed fevers are investigated promptly as part of the surveillance. The least understood part of the arbovirus life cycle, however, is not that part of it in which human beings are occasionally infected, but the manner in which the viruses survive in nature. Their ability to remain active in the dry season in the tropics and to overwinter in temperate zones is a subject to which a number of laboratories are giving attention. For the study of this problem, the laboratory has set up a field unit in the Bush Bush forest across the island from Port-of-Spain on the eastern shore. The forest, about two or three miles long and not more than a quarter-mile wide, is almost completely surrounded by the Nariva swamp, which effectively discourages penetration by the local inhabitants. A small boat canal dug during the dry season allows personnel of the laboratory to reach the forest, and a camp built for the purpose makes it possible to maintain activities throughout the year. These include a search for virus in mosquitoes and other arthropods, sentinel mice, wild rodents, birds, marsupials, and lizards. This effort has yielded much information: in one year, 1962, 136 strains of virus were isolated from Bush Bush material.

In May, 1962, a study of longevity and movement of small mammals in the forest was begun in an effort to determine the source of the viruses isolated from mosquitoes. While the source of the infective blood meals of these mosquitoes was not established, it seems probable that it was rodents. The trapped animals are marked and released

A team from the Trinidad Regional Virus Laboratory at Soldado Rock, the island's southwestern point. The purpose of the expedition was to collect ectoparasites from terns and other birds; a tick thus obtained yielded the first tick-borne virus discovered in Trinidad.



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at the point of capture and a great deal of data is being accumulated through their recapture and study.

The laboratory staff is also on call for public health missions in neighboring countries. In response to requests for assistance, the staff recently investigated outbreaks of eastern equine encephalitis in horses in British Guiana and in Jamaica. In the Jamaica outbreak, there were human cases as well. The laboratory also participated on a diagnostic basis in the investigation of an epidemic of poliomyelitis in British Guiana. Along with these activities it continued studies on the activity of non-arboviruses in the Trinidad population.

The Trinidad laboratory is a unit of the Department of Microbiology of the University of the West Indies; its support comes from the governments of the West Indian Territories and the United Kingdom, and The Rockefeller Foundation. During 1963 the facilities of the laboratory were increased through the addition of an insectary paid for by the Foundation, and a Virus Diagnostic Laboratory built with funds donated by the government of Trinidad and Tobago. The laboratory staff consists of seven senior scientists, three of them members of the Foundation's staff, and fifty technicians and assistants.



A F R I C A

The African activities of The Rockefeller Foundation in 1963 emphasized steps toward the conquest of hunger, the reduction of disease, and the advance of higher education. These are worldwide problems but they are felt acutely in Africa, where the agricultural endowment of soils and climate is not generally rich, the morbidity rate is high, and where the new nations have great need of skilled personnel. These inadequacies of physical and human resources are especially marked in tropic regions of Africa; they are being remedied by vigorous national and regional development projects, a number of which have received Foundation aid.

Much of the continent's population of about 272 million people suffers from undernourishment and malnutrition; to compound the problem of hunger, radical socio-economic changes have produced the familiar if little-understood corollary of an accelerated rate of population increase. The rapid development of the African nations—24 countries have become independent in the past three years—in turn is creating demands which far outrun the supply of trained African

specialists in the fields of science, education, and government. The Foundation has therefore responded to this need by expanding its continuing aid to those new centers of learning which must supply the skilled planners and executives upon whom the future of the African nations depends. The total of grants for all purposes made in Africa in 1963 was more than \$1,938,650.

Toward the Conquest of Hunger

The improvement of basic food crops is the first area of interest in the African agricultural sciences program. Reason supports this priority since improvement in the dietary staples has immediate social and economic effect. Experience also fashions the choice because much of the profit in knowledge from Foundation-supported crop improvement work in Latin America, South Asia, and the Far East can be reinvested in Africa. For example, hybrid and synthetic varieties of corn developed in Mexico and Colombia are now being used in African breeding programs, while research techniques and patterns of organization developed elsewhere by the Foundation are now proving their worth in helping solve problems and train scientists in Africa.

The effective combination of new materials and practices is shown in the work of the Plant Breeding Station, Njoro, Kenya. Situated on the fringe of the Rift valley region, this unit of the Ministry of Agriculture, Animal Husbandry, and Water Resources is an outstanding wheat improvement station and also has a vigorous maize improvement scheme. Its maize work is centered at Kitale, near the Uganda border.

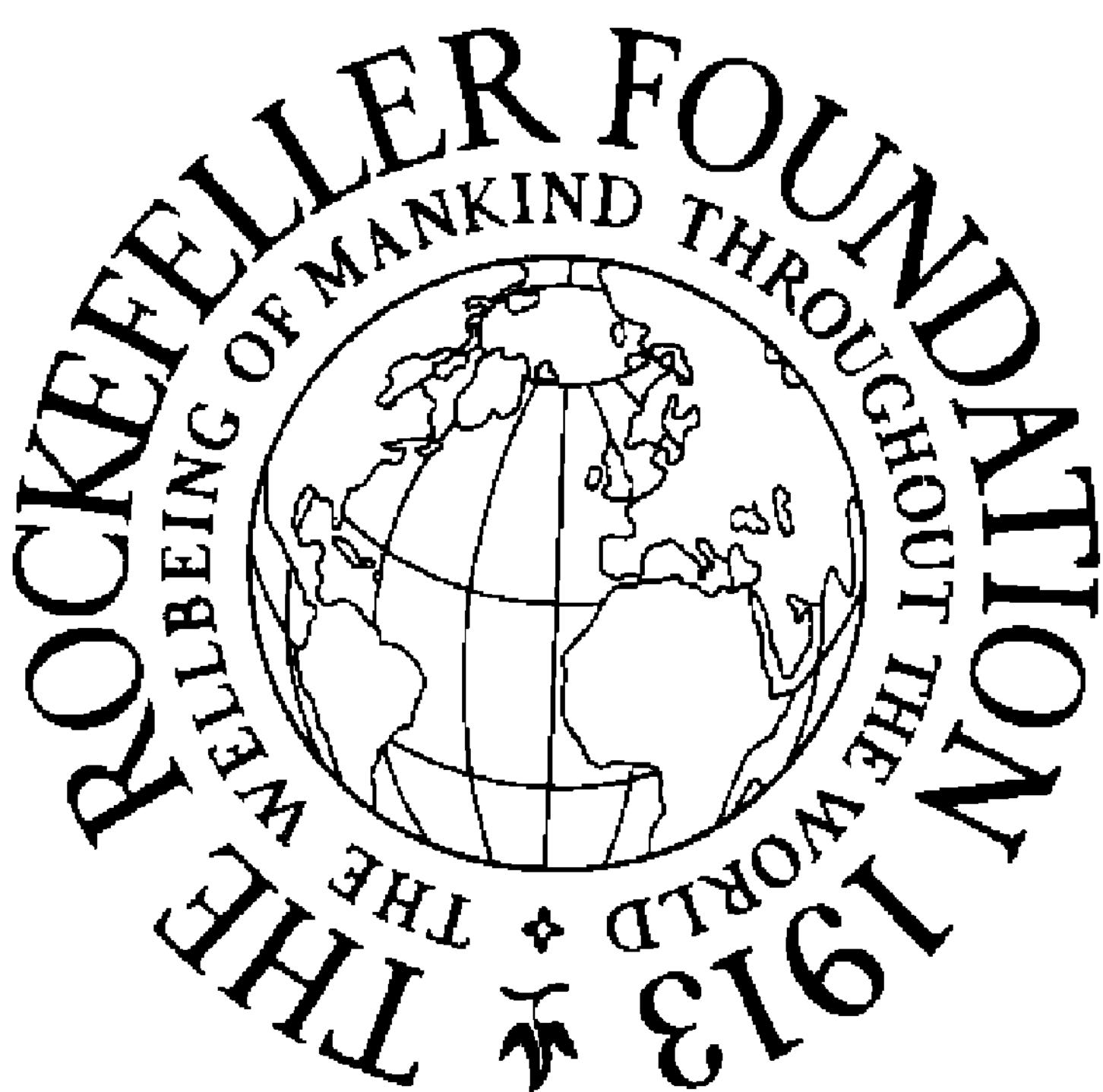
Using techniques of breeding which have also been employed by Foundation scientists in Mexico, the Kenya investigators have developed a new maize named Kitale Synthetic II. Intervarietal crosses of this synthetic have in turn been made with varieties of maize from Ecuador, Costa Rica, and Mexico. These crosses improve the synthetic's yield by about 40 per cent, setting a new horizon for yield improvement in Kenya and opening up avenues which may be of considerable value in basic maize breeding studies. The Foundation has awarded \$86,000 to the station; this grant will help continued research and the in-service training of young African agronomists who now are graduating from the University of East Africa and from the practical schools of agriculture.

Maize is an important African crop but its cultivation is effectively limited to areas of reasonable rainfall. A far larger area which receives small or irregular rainfall needs a drought-resistant crop, and here the sorghums have become extremely important. About two-fifths of all the land cropped to cereals in Africa is planted to sorghums and millets and these cereals supply the main daily food of an estimated 55 million Africans; the Foundation has therefore shown continuing interest in the work of the sorghum breeding center at Soroti, Uganda.

The basis of crop improvement is the isolation of plant characteristics of economic importance. Only when this isolation has been achieved can the work of hybridization begin, and the isolation itself must be prefaced by painstaking identification of genetic variations. The Soroti staff have worked closely with experts in sorghum improvement projects in Mexico and India, and substantial progress has been made in identification and isolation at the African unit. A grant of \$100,000 has been made for this work, and for expanded training of African scientists. It is interesting to note, in passing, that the quality of research and training at Soroti has led the United States Department of Agriculture's research service to select that location as a regional headquarters for an extensive cooperative project in maize and sorghum improvement, supported by the Agency for International Development.

Six hundred miles to the northeast of Uganda rises the great central plateau of Ethiopia. This is an area of good rainfall and temperate climate which supports the production of livestock as well as all the important food grains, and the Central Agricultural Experiment Station at Debre Zeit is thus located within a microcosm of African farming practice. The station is the main regional unit of the College of Agriculture of Haile Sellassie I University and its resident research staff is comprised of Ethiopian scientists. Both the college and station have been assisted since 1956 under a cooperative AID contract with Oklahoma State University.

The plateau region served by Debre Zeit is rich in adapted germ plasm materials of many of the world's most important food crops and these are being utilized in barley, maize, and sorghum improvement work. One of the main interests is research on wheat; the station has cooperated for several years in growing the international wheat rust nursery of 829 varieties supplied by the United States Department



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Teff, Ethiopia's leading cereal grain, is the object of intensive investigation at the Debre Zeit station of Haile Selassie I University. Barley, maize, and sorghum are also studied here by Ethiopian scientists working for the improvement of the country's food production.

of Agriculture, and has tested many wheat varieties from Europe, the United States, and Kenya and other African sources. Two new varieties developed at Njoro, Kenya, have been released to Ethiopian farmers through Debre Zeit, and in the absence of an Ethiopian seed service the station has become responsible for the continuing seed production of these new varieties.

New laboratory and service facilities at Debre Zeit will be equipped with the help of a \$50,000 grant. The station's new plant will strengthen the training at the College of Agriculture, which has graduated 149 Ethiopian agricultural scientists in the past seven years; will allow the station to increase its cooperation with other African centers; and will make the station attractive to technical assistance organizations that are contemplating cooperative African research on a regional basis.

In summary, the Foundation's new grants will help research on wheat, sorghum, and maize in Ethiopia, Uganda, and Kenya. Similar research is continuing with the help of earlier grants, such as those made for millet and sorghum projects at Nigeria's Northern Region Experiment Station. Each of these projects has a strong African training component, and each has an international dimension through links to similar projects in other countries. However, while these basic crops must continue to supply most of Africa's diet for many years to come, the improvement of livestock production is essential to the genuine improvement of nutrition. There fortunately are large areas of East Africa where climate and topography may permit the growth of an important livestock industry but many serious problems of animal disease and nutrition have yet to be solved. As the results of research become available their effective use will depend largely on the presence of trained extension workers and of farmers who can intelligently apply the new knowledge; both needs can be met only by increasing the supply of agricultural college graduates.

Egerton College, at Njoro, Kenya, offers East Africa's only diploma course in animal husbandry as well as diplomas in agriculture and forestry. A new dairying course is being added with the help of UNICEF and Egerton will then become the regional center for training dairy diplomates from all of Africa as well as parts of the Middle East. Present enrollment is 153, including 8 Europeans, 28 Asians, 5 students from Arab countries, and 112 Africans. Staff and teaching



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Cattle have traditionally played an important role in the economy of the highlands of Kenya and are an especially important subject of study in African veterinary and agricultural schools. The principal of Egerton College, at Njoro, uses a prize-winning Guernsey cow to illustrate a point to students.

facilities permit the admission of up to 130 students per year but service facilities are inadequate for such numbers; they will be improved through a Foundation grant of \$75,000 which also will provide some teaching materials for the expanded program.

Another facet of livestock production is under study at Lovanium University, Republic of the Congo, where the reasons for heat tolerance in some poultry breeds are being investigated. It has been determined

In East Africa, immobilization drugs are proving very useful for the study of large animals, since an animal temporarily tranquilized cannot harm itself or the investigator during examination. This scientist at the East African Veterinary Research Organization is waiting to "shoot" a giraffe with a capsule of the drug.



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that light breeds seem to withstand heat better than heavier, darker breeds, and that jungle fowl have apparently developed greater tolerance to excessive heat than have the domesticated breeds from temperate zones. This work at the School of Agriculture will be expanded with the help of a grant of \$23,570.

Increased scientific activity throughout Africa creates the demand not only for more trained workers, plant, and equipment, but also for improved sources of information. A typical problem arose out of biological research now being conducted at several institutions in Tanganyika, Uganda, and Kenya, where each group tried to develop its own library service but none had sufficient funds for all of the needed materials. A grant of \$15,000 has therefore been made to the East African Common Services Organization to help strengthen the Muguga Library, Kikuyu, Kenya. This library houses the joint collection of the Veterinary Research and the Agriculture and Forestry Research Organizations of East Africa; the grant will extend the collection and also provide more microfilm equipment so that Muguga can become a regional information center.

The Population Problem

Only in recent years have enough census data been accumulated to permit even an approximate charting of Africa's population. The rate of increase cannot yet be calculated accurately, but is known to be accelerating. Vigorous public health campaigns could seemingly add to the problem of population since high African morbidity must decline sharply as health services are extended and nutrition is improved. But there is reason to believe that a reduction in mortality must precede the attempt to secure a significant drop in natality; the lives of children must be made secure before parents can attach any importance to family planning, and increased adult longevity may help to change the motivation of philoprogenitive groups. A strong public health service is an essential base in the long-range campaign to bring population and other natural resources into their best relationship.

The construction of this base in Africa, as in other developing countries, may involve guidance and aid in the creation of complete health systems and the best starting point for such an endeavor often

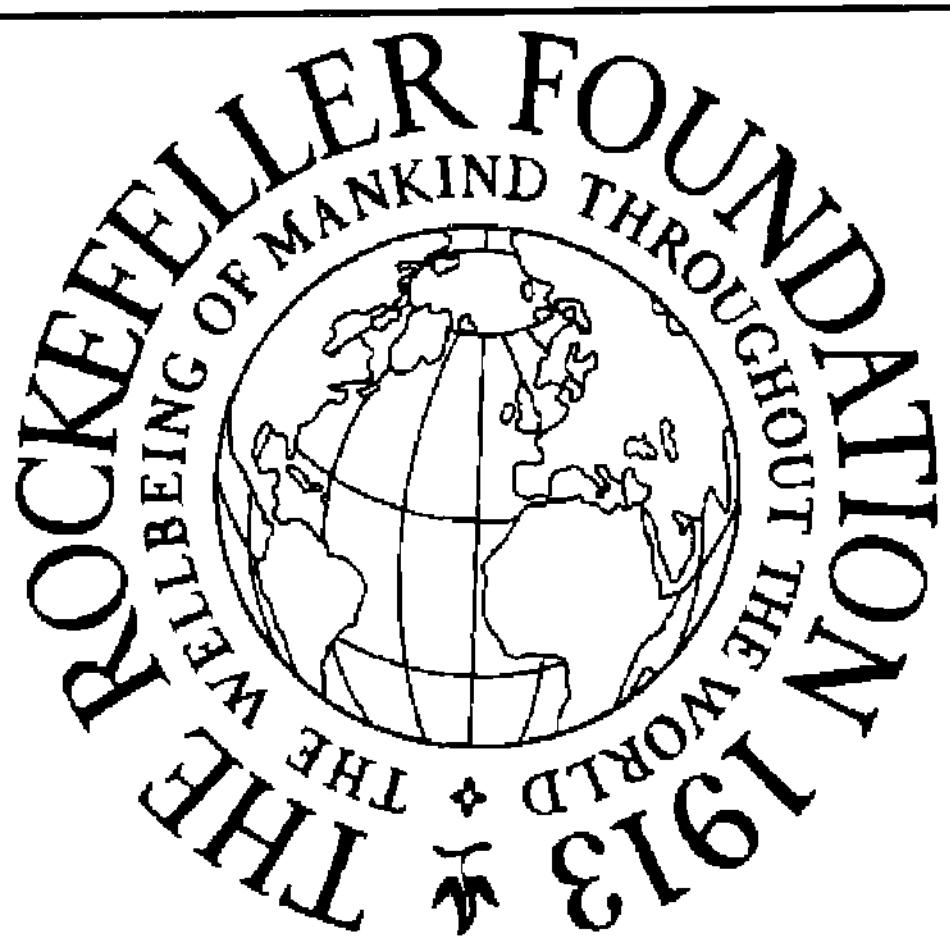
is a university. In the Congo, for example, Lovanium University not only is the prime source of fully qualified physicians and nurses, but also undertakes important medical research and operates the country's only training hospital. The projects now are well developed, despite the fact that Lovanium is only ten years old, and that a third of its life has been spent amid the troubled conditions which followed independence. Since 1957 the Foundation has provided more than \$500,000 to help the Medical and Nursing Schools and a further \$133,570 was granted in 1963 for special projects at the Medical School. This grant will provide overseas currency credits to help support a corps of young foreign medical graduates who elect to serve a portion of their residencies in Leopoldville. This plan was put into effect several years ago as an immediate means of meeting the critical shortage of trained physicians at the university hospital, but the presence of about 20 foreign residents has since brought additional benefits to the Medical School. African students entering their clinical years have found that day-to-day contact with graduates of European medical schools has enriched their education; the permanent staff have gained stimulus and assistance in research and training; the residents have had the opportunity to teach, undertake research, and become acquainted with the problems of tropical medicine. The Foundation's grant also will help provide equipment and supplies for a school enrollment which, at 215, is more than 20 per cent above that of the previous year.

Despite the efforts of the new universities and medical schools the proportion of doctors in the total African population will remain low for many years to come. The developing health services will therefore need to run their rural and urban centers with a minimum of professional personnel, relying on paramedical auxiliaries for the bulk of the coverage. The best ways of providing auxiliary service need urgent study, as do patterns for training African administrators, and both these problems will be examined in a new rural training and research center run by the University of Ibadan, Nigeria. (The development of other departments at Ibadan is discussed later in this section.) More than \$200,000 was granted for the center, which is at Igbo-ora about 50 miles from Ibadan. The unit will build upon an existing center and rural service, formerly run by the Western Region government, with



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Two physicians and a medical student from Makerere University College, paying a home visit to a family living near the Kasangati health center, take time out from consideration of public health matters to help the children of the family build a playhouse.



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Recent research has shown that disorders of the nervous system are more widespread in Africa than had been supposed. The new Department of Psychiatry, Neurosurgery, and Neurology at the University of Ibadan is pioneering in the training of African specialists in these fields. The picture shows the head of the department on rounds in the nervous diseases clinic of the University Hospital.

health visitors, midwives, and sanitarians, but without doctors. This service now is controlled by the university, which has appointed a director and staff to undertake demographic, epidemiological, and medical studies of a rural population of about 163,000, while also training students in the techniques of such surveys and in methods of rural ambulatory medicine. The Foundation plans to assign a staff member to the unit, in company with the London School of Hygiene and Tropical Medicine and the Liverpool School of Tropical Medicine. Two agencies of the United Nations also will work at Igbo-ora, in what may become a model for future African health services. During the

year a similar project also got under way in Uganda; the Kasangati public health center is being operated by Makerere University College with the help of an earlier Foundation grant.

The first priority in African medical training undoubtedly is to increase the supply of general practitioners and auxiliaries, but full-range health services also need medical specialists and facilities for research into indigenous problems.

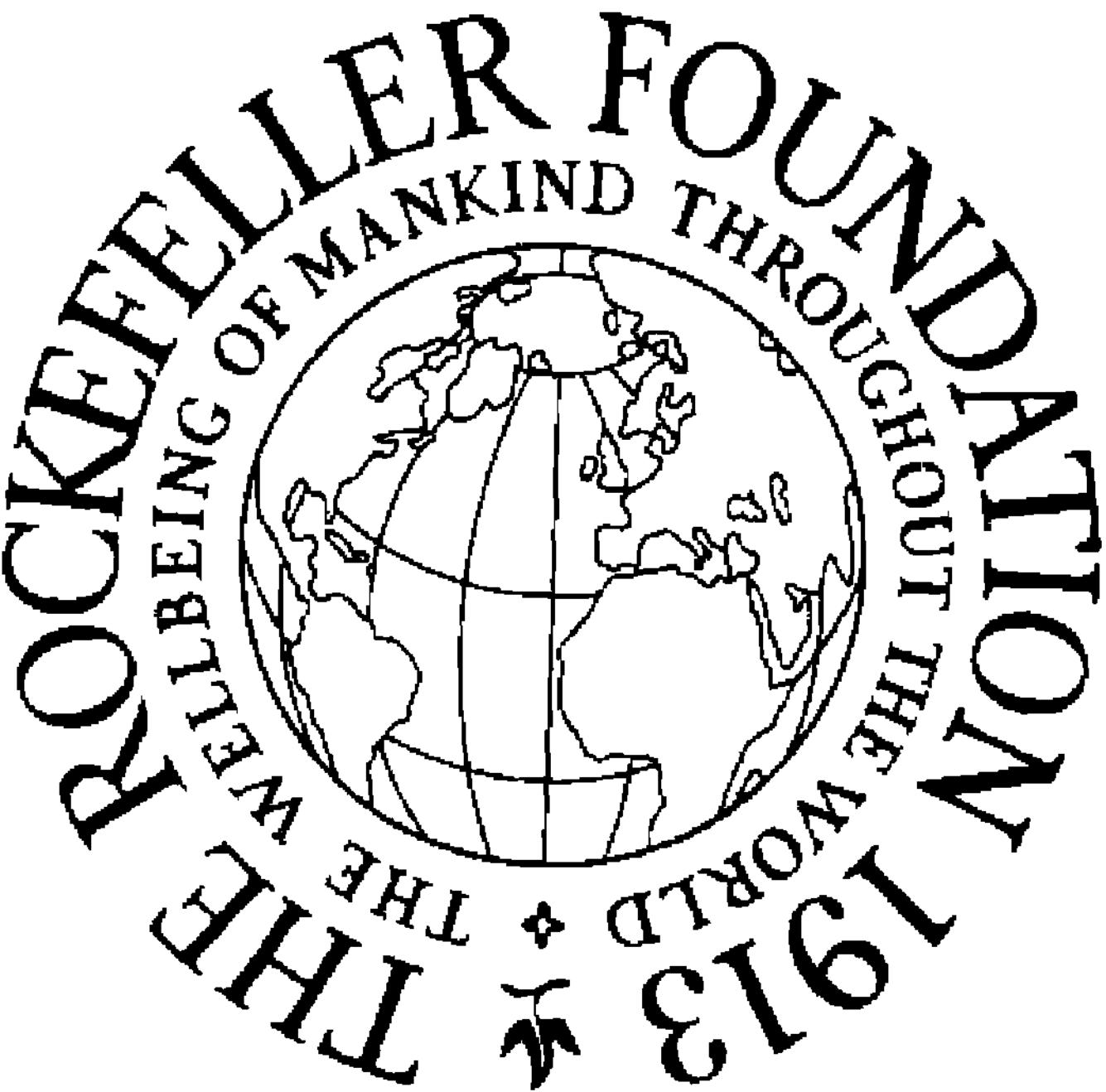
Steps in this latter direction are being taken at Ibadan by the creation of a Department of Psychiatry, Neurosurgery, and Neurology, and the establishment of a virology unit. Grants totaling around \$240,000 were made for these groups, each of which is the first of its kind to be attached to any African university.

The training at Ibadan of mental health workers will be especially important because it is known that mental illness is widespread in Africa and that certain types, such as anxiety states, are increasing rapidly in the wake of radical social changes. Improved diagnostic services have revealed a number of neurological syndromes requiring research and specialized talent for treatment, and even the leading medical centers of the continent are not usually able to provide optimum care for cranial injuries and other organic lesions. The new department at Ibadan, to the service of which several distinguished African specialists have already been recruited, will help meet these varied needs by training workers from all of the African countries.

The new virology unit also will be a unique training post for African specialists. The hospital at Ibadan's medical school has recorded many cases of undiagnosed diseases that appear to be of viral origin; in 1961 a serological survey was made in Nigeria, Ghana, and Liberia by staff from the Foundation's virus research program, and this revealed a high level of activity by a number of those arthropod-borne viruses that are the subject of special attention by the Foundation. The Ibadan group will therefore concentrate initially on field studies of arboviruses, with the help of financial and staff support from the Foundation.

Emerging Centers of Learning

In addition to aid for individual projects the Foundation has given continuing support to two new universities in Africa. They are the



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Rockefeller Foundation officers and staff members are participating directly in the work of a number of outstanding colleges and universities in Africa and other developing areas. A Foundation staff member conducts a tutorial in economics at Makerere University College, University of East Africa. On the opposite page, a member of the Department of Economics of the Royal College conducts a tutorial for first-year economics students.

University of Ibadan, Nigeria, and the University of East Africa; each is a pace-setting institution and each serves regional as well as national interests. The imperative need for these and other training centers springs from the shortage of trained manpower which exists in all the African nations; the shortage can be overcome only by an increased flow of graduates from African institutions, which in turn requires the rapid strengthening of African academic staff.

The tri-nation structure of the University of East Africa is an interesting approach to this problem. The university is an affiliation of Makerere University College, Kampala, Uganda; the Royal College, Nairobi, Kenya; and the University College, Dar es Salaam, Tanganyika.



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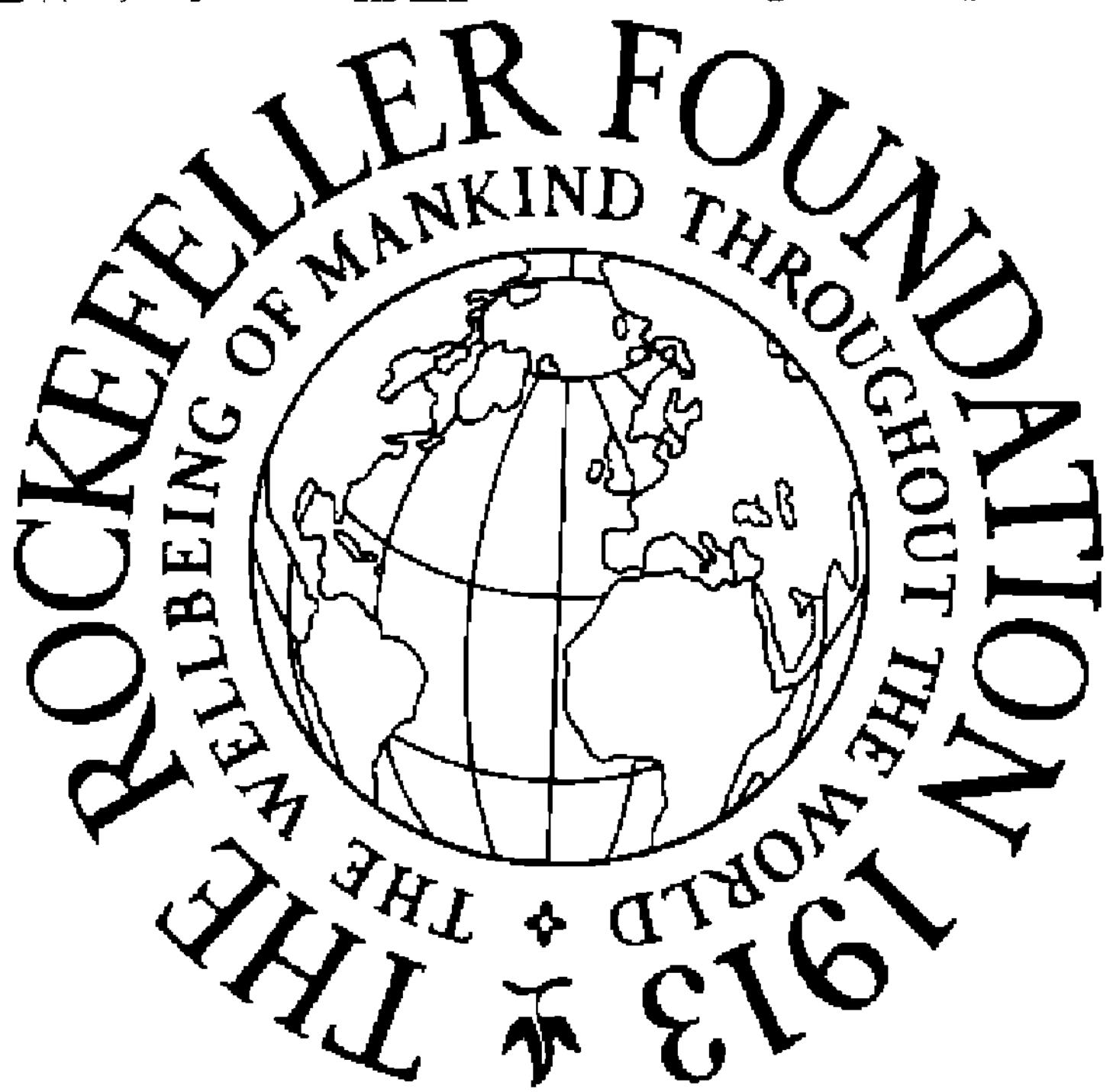
These three are joined in establishing an integrated and nonduplicated program of professional education. Makerere contributes particular strength in medicine, agriculture, humanities, and social sciences; the Royal College has concentrated on engineering, architecture, veterinary science, and commerce; the University College of Dar es Salaam maintains the law school, and opportunities for advanced work in public administration, international law, and political science are available through the affiliated Institute of Public Administration. The overall plan for the university is for each college to develop full arts and sciences courses, but for the professional faculties to be divided among the three colleges and shared by all.

Grants totaling more than \$374,000 were made to the university in 1963, making the total of Foundation support to date more than \$1.5 million. Major grants included \$185,220 for research on economic development at the East African Institute of Social Research, which is located at Makerere. Young economists will be trained in the course of this work, and the governments of the East African countries will derive special benefit from the research. Other aspects of economic and political study will be covered by new research and teaching appointments at Makerere in the politics of resource allocation, and in developmental economics. Similar needs have been recognized in a grant of \$74,240 to the Royal College for teaching and research in economics.

In Nigeria, progress was maintained by the University of Ibadan and present indications are that registration will more than double in the quinquennium ending 1966, to a total enrollment of around 3,500. In addition to the medical projects described earlier, the university reshaped its basic programs in economics and political science, and laid the foundations of a greatly strengthened agricultural program that will serve all Nigeria. Total aid for all major projects was more than \$800,000.

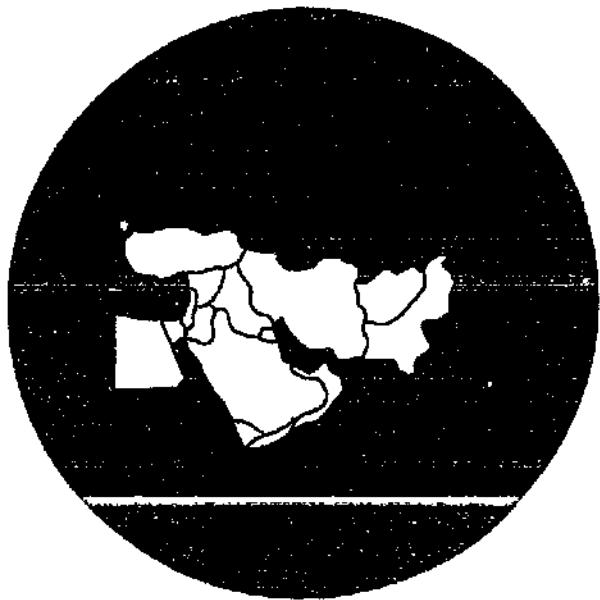
The expansion of the Faculty of Agriculture and Veterinary Science

Among the subjects receiving particular attention at the University of Ibadan, Nigeria, is indigenous drama. This theatre group, associated with the university, tours outlying areas performing in Yoruba, the principal language of the country's western region.



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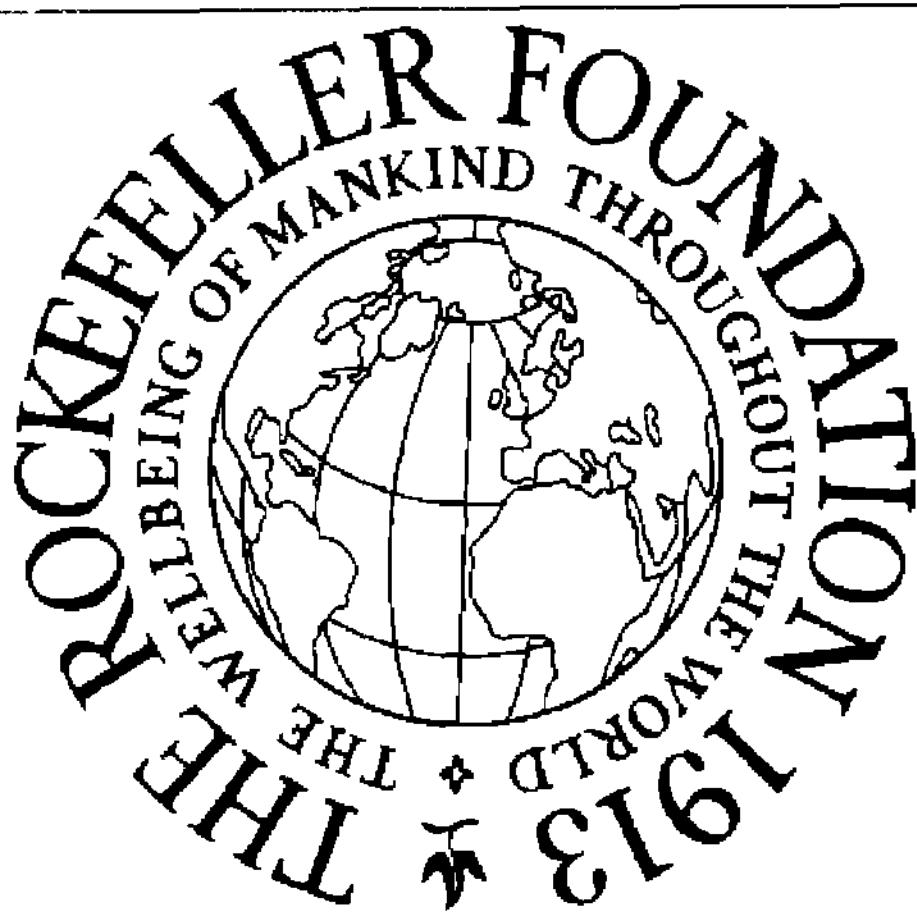
continued, following 1962's reorganization into four departments. Several more African research assistants were added to the staff, and an active extension program got under way. Field houses for poultry and swine production experiments were completed, and new equipment is permitting research at several localities into poultry improvement and the economics of successful farming on small holdings.



MIDDLE EAST

Grants were made in 1963 by The Rockefeller Foundation in Lebanon, Turkey, and Israel for studies in the medical and natural sciences, the agricultural sciences, and for several projects in the humanities relating to Middle Eastern affairs and to cultural development.

At the American University of Beirut, Lebanon, a major plan to develop a documentary service was put into effect. The project is directed by Professor Walid Khalidi, of the Department of Political Studies, and its aim is to make available to scholars throughout the world the political source documents that are concerned with international relations and the modern history of Arab countries. The work, which will occupy several years, is designed to bridge an information gap that has seriously hampered the study of Middle Eastern current affairs; difficulties arise because the published literature on Arab politics is limited and selective in viewpoint. The university will publish a volume of collected documents each year, in Arabic and in English, as well as a quarterly chronology of contemporary events. Material is being drawn from Arabic newspapers, official government gazettes,



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A project designed to make political source documents relating to Arab countries more readily available to scholars is being conducted at the American University of Beirut. The picture shows staff members of the project meeting to discuss progress.

parliamentary minutes and releases, party publications, and statements by prominent political figures. An initial allocation of \$12,400 has been made by the Foundation to supplement pledges from the university, a publishing company, and a number of domestic and international business groups.

Heightened scholarly interest in current affairs also is found in Turkey, where the University of Ankara has now established a Center for Soviet Studies within the Institute of International Relations. The physical location of the institute and the strength of its faculty will contribute materially to the new center. The provision of reference materials and basic library supplies was aided by a Foundation grant of \$10,000.

Development of the arts in Turkey has been further encouraged by a grant for Miss Yildiz Kenter and Mr. Musfik Kenter, co-founders of the Kent Players, an Istanbul theatrical company. Both Miss Kenter and her brother are outstanding performers and stage directors whose contributions to Turkish theatre have been recognized by a number of public awards. The Foundation's grant was for travel in Europe, the United States, and Canada to study the latest developments and innovations in the theatre.

The campaign to create a viable economy in Israel continues to center on improved agricultural and reclamation practices, and Israeli scientists are testing ingenious methods to meet the problems of arid regions, including techniques for the best uses of limited water resources and for the useful application of solar energy. These and other projects have received Foundation support in recent years, in their own right and also in the hope that the knowledge gained may prove useful in the arid regions of Africa and Latin America as well as in Israel. The production of improved crops that can yield well in a climate of extremes is a task of obvious importance to such regions and the Foundation therefore is assisting the study abroad of Dr. Dan Atsmon, research associate of the Plant Genetics Section of the Weizmann Institute of Science, Rehovoth. Dr. Atsmon will confer at institutions concerned with research on the life of plants in drought, heat, frost, and other conditions of stress.

In addition to other minor grants to institutions in the Middle East, ten Foundation fellowships and scholarships awarded to persons from three countries became active in 1963.



INDIA

Grants made in India by the Foundation during 1963 were directed mainly toward the conquest of hunger and the reduction of the causes of illness. In the first area, there was continuing support for work on the improvement of dietary staples, as well as aid for pioneering projects in the improvement of agricultural education. In the second area, assistance was given to medical training institutions, preliminary steps were taken for a new cooperative rural public health pilot project, and the plan of research on certain virus diseases was continued.

Studies in other fields were aided at institutions in several states, primarily by means of grants to enable research and consultation overseas by Indian scholars.

Agricultural Development

Under a cooperative agreement with the government of India the Foundation for the past eight years has been contributing skills and materials for a plan of coordinated research. The immediate aim of this plan is to improve basic food crops, but the ultimate objective is

to devise and demonstrate patterns of scientific method and organization which can be applied to the conduct of Indian agricultural research upon a nationwide scale.

The leaders of India were aware at the time of independence that existing research and educational systems were insufficient to meet the needs of the nation's food-supply system. Since that time a continuing series of reviews has been conducted jointly by Indian and United States scientists. These reviews have reported objectively upon the patterns of research, training, and extension in India, and for comparison, in the United States. On the basis of unanimous findings, government of India scientists and educators have concluded that institutions should be developed that will ensure more intensive focus on the practical problems of agriculture; the University Education Commission, established in 1948, recommended that agricultural universities be established embodying the principles of United States land-grant colleges.

In 1956 the government invited the Foundation to help in directing research to improve certain food grains, with initial emphasis on maize, sorghums, and millets. The Foundation also agreed to aid the creation of a postgraduate school at the Indian Agricultural Research Institute. It was the desire of the Indian government that these two parts of the plan should be complementary: research on crop improvement would stress the coordinated employment of existing talent and facilities which were controlled by a number of central and state government organizations; the new postgraduate curricula would point up the value of advanced scientific training in the investigation of economically important problems, and both projects would contribute by example to the creation of new agricultural universities in which research, training, and extension activities were to be shaped toward a common goal: the solution of the problems of the farmer.

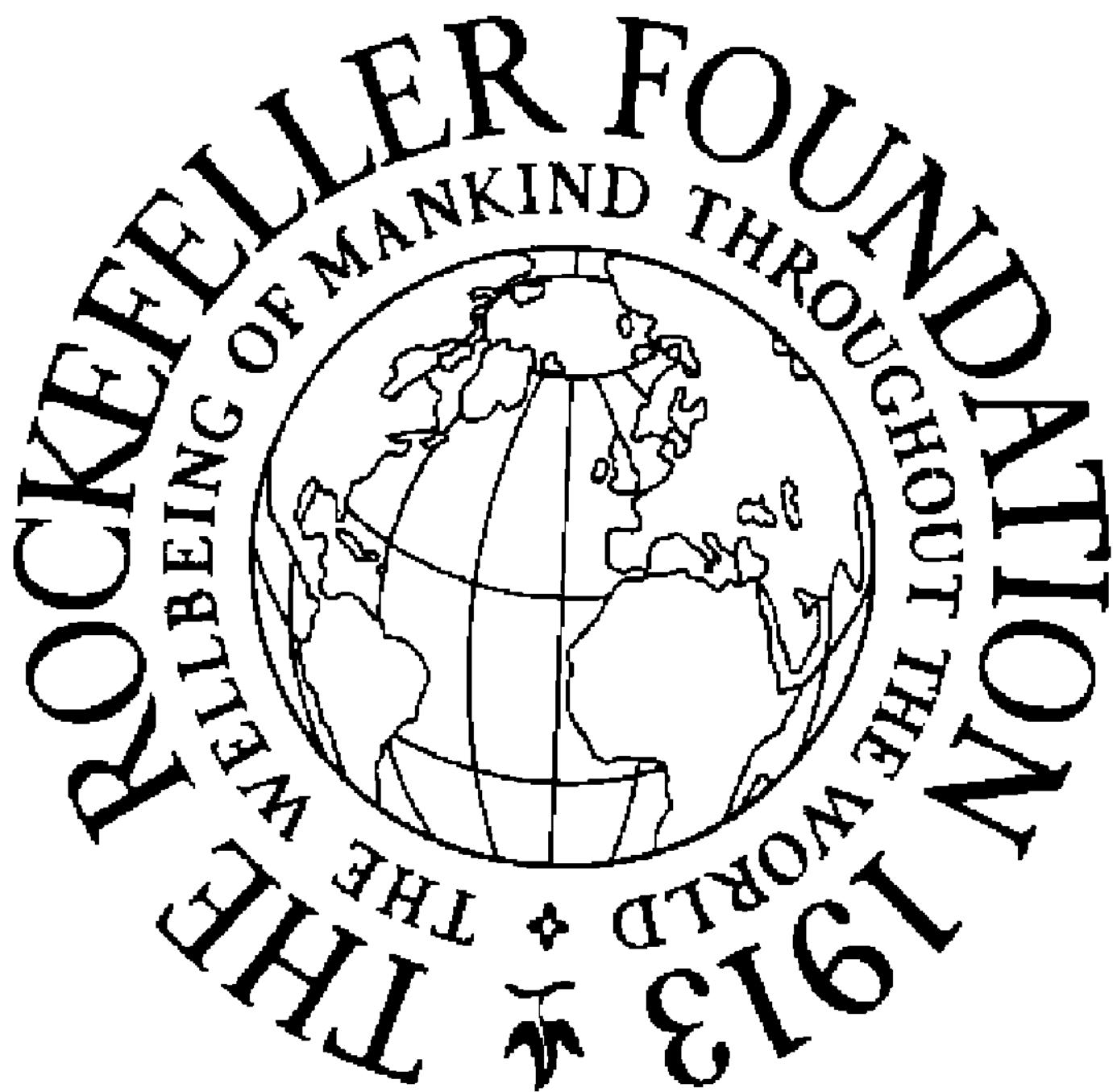
Formally inaugurated in 1958, the Post Graduate School now has an enrollment of more than 400 students, and a total of 77 Ph.D. degrees and 305 M.Sc. degrees have been granted through the convocation in December, 1963. The first two of the new Indian agricultural universities are operating in Uttar Pradesh and Punjab states, with the help respectively of the University of Illinois and Ohio State University. Six other states have passed legislation to create similar

universities and discussion and tentative planning are under way in several more states. At the government's request, a Foundation staff member is serving as chairman of the committee set up to advise the states on legislative and other measures affecting the new institutions.

The Punjab Agricultural University, Ludhiana, received a Foundation grant of \$320,000 during 1963 to help develop two experimental stations and to procure books and laboratory equipment. This university is the first to be assigned statewide responsibility for research, education, and extension. At Ludhiana, with its high rainfall and excellent ground-water supplies, a 900-acre experiment station is being established by the university to breed and select improved varieties of wheat, corn, sugar cane, millets, peanuts and other oilseeds, and pulses, as well as to undertake research in cultural practices, soil fertility, irrigation, control of pests and diseases, plant nutrition, and animal sciences. Cooperative maize and sorghum research which the Foundation is conducting in the Punjab with the government of India is located at Ludhiana.

Studies at the second station, at Hissar, an area of lower rainfall and inadequate aquifers, will emphasize agronomic practices and crop variety tests and the breeding of improved millets adapted to that region. The Hissar station will serve as one of the principal regional centers in the cooperative millet improvement plan.

The Foundation currently has 13 staff members from its agricultural sciences program assigned to cooperative projects in India. A number of these senior investigators are presently at work on aspects of the crop improvement plan, of which research on maize is now the furthest advanced. With the release in 1963 of the seventh hybrid developed within the coordinated maize breeding scheme, seeds are now available which will substantially outyield the native varieties in virtually all the important Indian maize-growing regions, and the success of this operation has produced a recommendation by the government that additional research be patterned on the maize plan. Cooperative maize improvement research is under way also in Thailand and Indonesia. A new hybrid is being developed in Thailand, based on the variety Guatemalan, and was yield-tested in 1963. The Indonesian program has tested a considerable amount of material and superior germ plasm resources are being isolated.



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A student at the Post Graduate School of the Indian Agricultural Research Institute takes observations in a field cage on the sorghum stem borer, an important pest of this drought-resistant crop. The Post Graduate School, established in 1958, has awarded 77 Ph.D. and 305 M.Sc. degrees to Indians and students from other Asian countries.

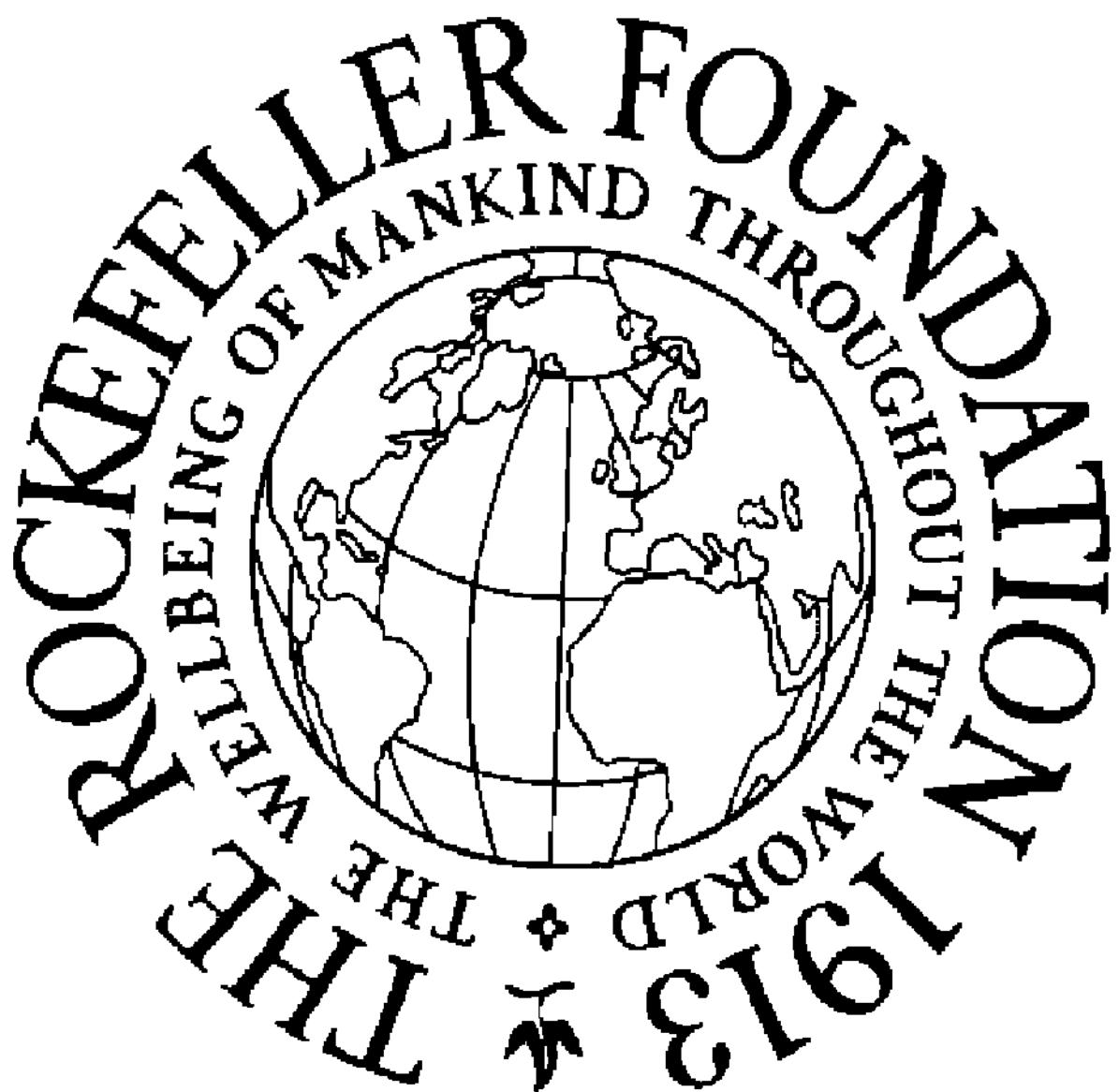
The government of India asked the Foundation to support a review team to study further the improvement of agricultural research, education, and extension with special emphasis on the coordination of these functions and the closer collaboration of the central and state governments; the team completed a first draft of a report in December, 1963. The Foundation also accepted an invitation for one of its staff to survey wheat problems in the light of the possible inclusion of wheat within the crop improvement program.

General Medical Development

India's chief center for training teachers of medicine is the All India Institute of Medical Sciences, New Delhi, which was established by government in 1956 to experiment with and demonstrate new teaching methods; to develop standards in all the health care fields; and to train teachers for other medical colleges. Both the undergraduate and graduate divisions strongly emphasize practical experience in the laboratory, the clinic, and the community. Preventive and social aspects of medicine are stressed throughout the undergraduate course and in the internship year each student works and lives for about three months at a community health center at Ballabhgarh, 25 miles from the New Delhi campus.

For graduate students, laboratory techniques and methods of teaching and research in the basic sciences are stressed; in clinical subjects much emphasis is placed on direct experience with patient care under supervision. A grant of \$200,000 has been made for equipment for the institute's clinical departments, bringing to more than \$1 million the total of Foundation aid given since 1958.

Staff from the Foundation's medical and natural sciences program have been assigned to the institute to advise on curriculum development over the past six years. This association will be carried a step further in 1964 by a plan for a joint effort in the rural health field by the government of the Punjab, the institute faculty, and the Foundation. A teaching unit is to be established to serve all the medical and health needs of a village development block with a population of around 100,000. Health services will center on a base hospital at Ballabhgarh and will be extended through three strategically placed health units. Surrounding each of these units will be three or four



Photograph Excised Here

Admissions office at the health center in Kurali, a village outside New Delhi. The All India Institute of Medical Sciences uses the Kurali center and others in nearby towns to give students and interns experience in rural medicine; the institute is also inaugurating projects in general community health at the centers.

subcenters staffed by ancillary workers. Interns and residents from the major clinical specialties are to serve in the Ballabhgarh complex for up to one year, specifically to gain experience in the health problems of rural India. There will be an important opportunity for research on the pattern of illness in this typical community and for experiments on efficient and economical methods of control. On the latter point there may be considerable interest in tests of a system in which ancillary workers are given increased responsibility under the direction of specialist physicians; these tests will add to data that are being gathered in similar Foundation-aided projects in Nigeria, Uganda, and Colombia.

Indian Virus Program

As part of the Foundation's program of virus research, three staff members are currently assigned to the Virus Research Centre at Poona, which is administered by the Indian Council of Medical Research. During 1963 the Poona laboratory completed a preliminary serological survey of the Northeast Frontier Agency region and was almost immediately faced by an epidemic challenge of an undiagnosed disease, with hemorrhagic manifestations, occurring in army troops which had been serving in the same region. The Poona unit was also involved with the recent serious outbreak of dengue in Calcutta, which caused many deaths among children; this outbreak lends pressing importance to the continuing research on dengue at the Poona laboratory's field station at the Christian Medical College, Vellore.

Studies continued during 1963 on Kyasanur forest disease. This virus-caused disease was discovered in 1957 and its occurrence and behavior pose questions that are still unsolved. The virus is now known to be transmitted by ticks; during the year, workers at Poona were able to demonstrate transovarial transmission of the virus in experimentally inoculated ticks. Transmission of a related virus from generation to generation of ticks had been reported earlier by Russian investigators but had not been satisfactorily confirmed elsewhere. In addition, evidence of a small-animal cycle in this disease has recently been accumulated and is now being scientifically subjected to challenge. Investigations on development of a vaccine to protect against Kyasanur forest disease are being continued.



FAR EAST

Throughout the Far East in 1963 the Foundation continued to support research on the improvement of basic crops and other food plants; to aid the further development of strategically placed institutions of higher learning; and to assist individual projects of scientific and scholarly excellence.

The International Rice Research Institute

The improvement of Far Eastern and Indian rice crops is of fundamental concern because rice supplies most of the daily diet for more than half the world's population. Since 1959 the Ford and Rockefeller Foundations have cooperated with the government of the Philippines in establishing and maintaining a central institute located at Los Baños, the Philippines, which now serves as a focal point of worldwide research on rice improvement. During 1963 the International Rice Research Institute completed the final building in what now is one of the most modern and fully equipped agricultural research centers in the Far East; the year also marked the first full 12 months of coordi-

nated research by a complete team of senior investigators drawn from the major disciplines of the agricultural sciences, and representing several of the major rice-producing countries. (The trustees of IRRI are drawn from India, Japan, the Philippines, Taiwan, Thailand, and the United States.)

Through the conduct of its own research the institute is also able to fulfill one of its most important functions, the advanced training of scientists from Rice Bowl countries. These research scholars and fellows serve as temporary staff members of the institute and gain experience under the guidance of senior scientists. Most of the 65 scientists in residence during the year were university faculty members or research workers from rice experiment stations of Asian countries. Their training periods vary from one to two months for those acquiring skill in specific techniques, to one year for those obtaining experi-

In their search for improved varieties of rice with high yield and good disease and pest resistance, plant breeders at the International Rice Research Institute conduct a large-scale program of crossing different strains, each having some of the desired characteristics. The first-generation hybrids of 410 such crosses are being grown in this bird-and insect-proof cage.



Photograph Excised Here

ence and training in a general field of research, to two years or more for those working toward a master of science degree. The M.Sc. program requires about one year's course work at the nearby College of Agriculture, University of the Philippines, plus one year of full-time work at the institute, during which scholars complete special research projects and theses for graduate credit toward degrees awarded by the University of the Philippines. To date the institute has accepted 43 research scholars for training periods of one to two years; three of these have already completed their training and returned to their home institutions. Among the countries represented by these scholars are Cambodia, Indonesia, the Philippines, Taiwan, Thailand, and Vietnam. In addition, 13 scientists from India, Japan, the Philippines, and Vietnam conducted advanced research at the institute during 1963.

The fellowship and scholarship plan is a keystone of the institute's international program, as distinct from the research program which is conducted by the institute's own staff. The international program has as its main objective the dissemination of ideas and materials: if the institute's work is to have an impact throughout the rice-growing regions of the world the results of its own research must be tested in many other localities, and other countries must be stimulated to place even greater emphasis on rice research. Much of this stimulation is expected to come from the scholars now in training at Los Baños, who will carry new thoughts and new vigor to already existing programs on their return to their countries.

Another important activity is the organization at Los Baños of international symposia to bring working scientists together for a thorough review of research in a given specialty. The institute sponsored three such events during the year, on rice genetics and cytogenetics; rice blast disease; and agricultural engineering problems. These conferences not only brought together in a common language the significant literature but provided opportunities, frequently for the first time, for many Asian scientists to meet face to face and discuss, across the conference table and informally, their professional activities, concerns, and problems. That the institute is not alone in attaching importance to this activity is partially shown in the fact that the genetics symposium was attended by 102 scientists and students from nine countries; the conference on rice blast, by 49 invited participants and

observers from 32 institutions in 15 countries and by more than 50 local observers; and agricultural engineering, by 27 persons from 17 institutions in Japan, Thailand, Taiwan, the Philippines, the United States, India, Ceylon, and Australia.

An important function of any genuinely international center is helping to devise uniform conditions and standards for research on common problems; the institute has therefore accepted responsibility for leading a project to establish in 15 or more countries some 40 uniform rice blast disease test nurseries, which will continue and expand the FAO Uniform Blast Nursery project. There also is need to determine whether results of research at Los Baños are widely applicable under conditions of climate and topography which vary greatly throughout the Far East, and the institute is therefore assisting a number of cooperative research projects in other countries. Those that are currently active include studies at three institutions in Japan, two in India, and at two also in the Philippines; at five in Taiwan, and others in Hong Kong, Vietnam, and Thailand. Cooperative experiments on climatic factors affecting rice production have been established in Indonesia, Japan, Malaysia, Taiwan, and Thailand.

With the addition of a soil microbiologist and several other specialists in 1963, the scientific staff of the institute has been brought up to the planned level of 17 senior members. The concerted, interdisciplinary attack of these scientists has yielded much information in only two years. The plant physiologists now understand, for example, why only some rice varieties may respond well to the presence of nitrogen in the soil. Plant pathologists have refined their appreciation of the mechanism of rice blast disease and now know that different races of the blast organism can cause disease in different parts of the same rice plant. Some rice varieties also have been found to enjoy consistently high resistance to the stem borer, an insect pest that causes heavy losses, and it may therefore be possible to breed resistance into new varieties. The heart of the institute's breeding plan is its collection — the world's largest — of more than 9,000 rice varieties from over 70 countries. It is from this collection that the institute draws material for the thousands of crosses it is making; other plant breeders around the world eventually will be able to tap this unrivaled bank of genetic material.

Much attention is also being given to the problems of practical rice cultivation. Rice yields in the experimental fields at Los Baños have been consistently high, encouraging the hope that average yields throughout the tropics can be substantially raised. There also are reasons for believing that the nutritive value of the grain may be capable of improvement; this would be of considerable importance in view of the dominant position of rice as a daily dietary staple in the Far East.

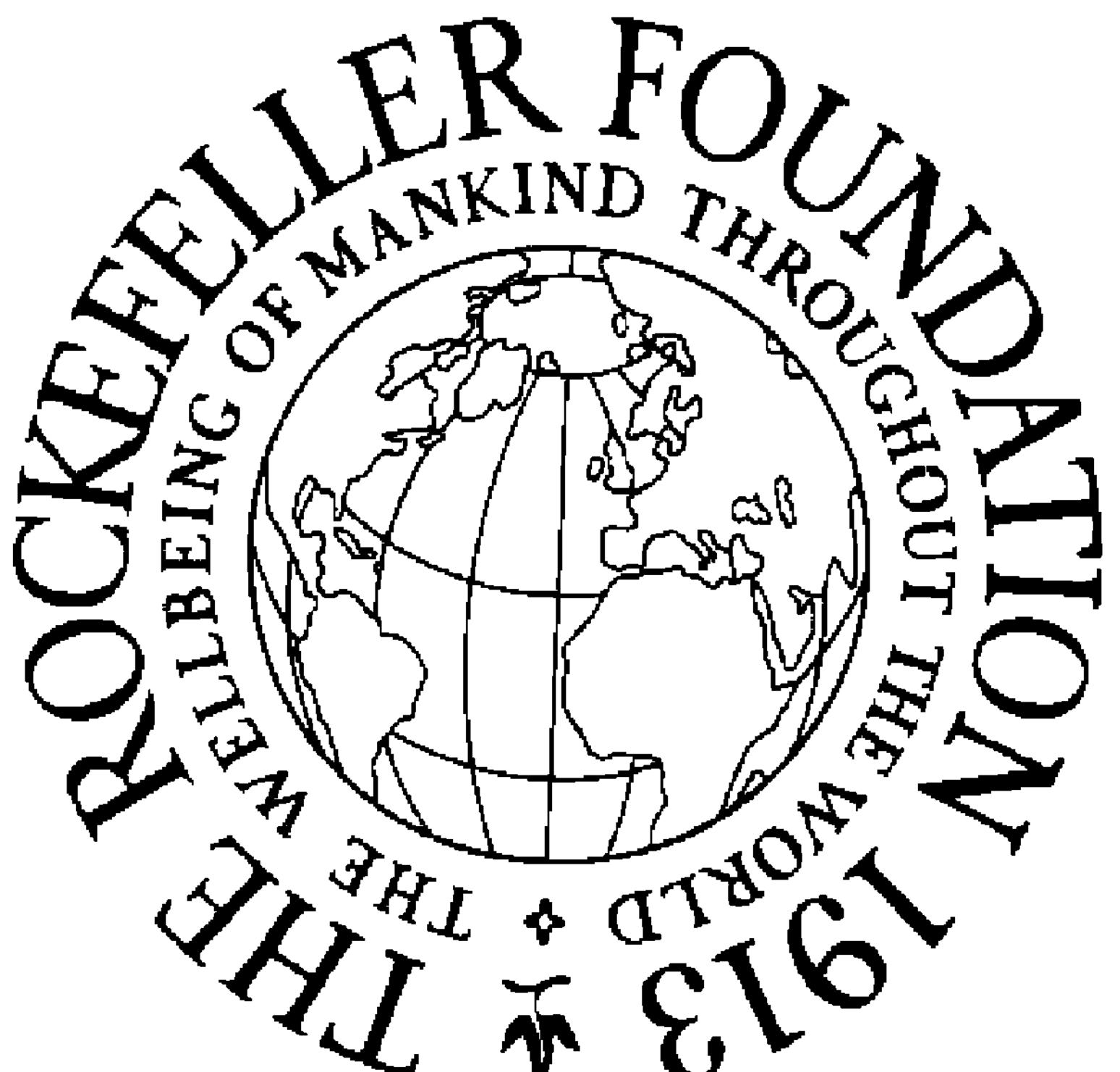
For the expenses of the International Rice Research Institute in 1964 an appropriation of \$625,000 has been made.

Emerging Centers of Learning

In addition to support for individual projects, the Foundation extends continuing and general aid to selected emerging centers of learning. In the Far East this is being applied to the strengthening of institutions in Thailand and the Philippines.

The University of the Philippines was founded in 1908 as a state-supported but autonomous institution; through the years it has attracted substantial numbers of students from other Asian countries and now is serving increasingly as a regional center for education and research. The Foundation's association with the university extends back to 1922, and in 1963 the Foundation endorsed a coordinated plan of support for the university, aimed at the development of advanced research and graduate training in selected fields.

One of the major grants made in 1963 enables the Department of Economics and the Institute of Economic Development and Research to offer one- to two-year graduate scholarships to a number of students from the Philippines and several Southeast Asian countries; funds are also available in support of faculty research and for development of the library. The university has emerged as a leading center for the training of economists and researchers from Southeast Asia. It has succeeded in building up a nucleus of outstanding scholars who are conducting research on important problems vital to the area and training others who have aspirations to establish programs in their own countries. The similarity of the economic and social problems in other Asian countries to those in the Philippines makes it logical that young Asian graduate students in economics should seek their training



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in strong centers such as the one at the University of the Philippines.

The expanding role of the university has meant that in recent years a number of experienced scholars have had to devote more and more time to organizational problems. As more young Philippine scholars are trained some of these senior scholars will be able to return to their fields of primary interest. Opportunities for travel, study, and research are being offered to senior administrators through a special research and travel fund to which the Foundation has contributed with the intention of assisting them to extend their acquaintance with recent developments in overseas centers of learning.

The Foundation is also responsive to the development programs of other departments in the humanities and social sciences. These include English and comparative literature, history, philosophy, political science, and sociology. Each department has prepared a seven-year development program intended to bring it to a point at which it will be fully capable of offering advanced work in a particular discipline. These development plans call for carefully worked out faculty development programming designed to raise the number of faculty holding advanced degrees. The university hopes, as promptly as possible, to increase the proportion of professors and lecturers who hold the Ph.D. and M.A. degrees. There is also provision for faculty research and study in the form of one-year writing and postdoctoral fellowships. Some of the departments have instituted their own M.A. level training programs to help ensure a steady supply of qualified younger faculty members. These departments have approached the recruitment of visiting scholars on an organized and systematic basis, specifying definite and clear-cut plans for visitors who can help the university to begin work in those sectors of each discipline not now provided for in the curriculum.

The College of Agriculture at Los Baños is increasingly becoming a research and training center for all of the Far East, and its close

Long distinguished for the number and quality of its Filipino graduates, the College of Agriculture of the University of the Philippines, at Los Baños, in recent years has been receiving increasingly large groups of undergraduate and graduate students from other countries, especially in Asia. This Pakistani candidate for the Ph.D. degree is taking a soil sample as part of his research.

association with the International Rice Research Institute is a key element in the latter's training program. Since 1909 the college has graduated about 5,000 agricultural scientists and technicians, many from other countries; it currently offers work to the bachelor of science level in agriculture, sugar technology, and home science. The Los Baños campus was virtually destroyed during World War II and was assisted in its rehabilitation by the Point Four Program through a contract with Cornell University. The Rockefeller Foundation's contribution included fellowships to 31 staff members from the college, and aid for construction of student housing.

Plans for long-range development were recommended in 1962 by a special review team. Parts of this plan are already being implemented by the college, with help from Cornell and the Ford and Rockefeller Foundations. This development, and certain crop improvement programs which are being undertaken, has created the need for additional housing for the faculty and groups of visiting scientists; the Foundation has made a three-year grant to help with construction costs.

For these and other projects to strengthen the University of the Philippines, grants totaling \$705,745 have been made in 1963.

In Thailand a group of institutions of higher learning in Bangkok supplies much of the leadership in a country which enjoys a high literacy rate, and whose centralized government school system has, at the lower levels, grown rapidly in recent years. This growth, together with other social changes, has put great pressure on the facilities for higher education and research which, in Bangkok, are principally represented by five universities that function independently in areas of special interest. Recognizing the need for greater cooperation, a number of Thai scholars have become interested in the possibility of achieving more integration in university life. They are also laying plans for advanced research and training throughout the country. As a first step in helping further these plans the Foundation has accepted an invitation to send an experienced biochemist to assist the organization of graduate work in this field; this staff member is assigned as a visiting member of the Faculty of Medical Science at the University of Medical Sciences. For the support of the Foundation's field operations in Bangkok and for several minor grants to institutions in the group,

a total of \$82,955 has been granted in 1963. The Foundation has long had an interest in Thailand: since 1923 it has contributed about \$700,000 to Chulalongkorn University, most of this in the fields of the medical and natural sciences prior to 1929. Since 1955, Kasetsart University has received aid in the agricultural field of around \$300,000, and the University of Medical Sciences has received approximately \$135,000 under the program in the medical sciences. In addition the former International Health Division spent almost \$168,000 on various disease control projects and public health laboratories and surveys. Since 1922, 96 fellowship, scholarship, and training awards have been made to persons in Thailand.

Aid to Research

At the University of Tokyo, Japan, a major reorganization of library facilities and services has been under way for the past three years. The library contains about 2.3 million volumes and is one of the most important repositories in the Far East. With aid from the government of Japan and the university, and also from the Foundation, the central library building has been rebuilt and refurbished; services have been extended through such devices as an expanded microfilm laboratory, the organization of a new interlibrary loan service, and the restocking of the central reference section, and by the compilation of a union catalogue of the entire book holdings of the university. A further grant of \$79,000 has been made for this work in addition to earlier aid of \$156,000. A separate grant of \$150,000 has been made for the improvement of the library of the Faculty of Agriculture; the entire project is expected to be completed in 1964.

GRANTS AND STUDY AWARDS • 1963

GRANTS MADE IN THE UNITED STATES

New England

DARTMOUTH COLLEGE, Hanover, New Hampshire:

Support of an experimental summer school program for talented disadvantaged high school students; \$150,000 for a five-year period;

Research in Europe on the possibilities and limitations of collective security under the auspices of international organizations, by James Barros, assistant professor of government; \$756;

DR. H. JACK GEIGER, Boston City Hospital, Massachusetts: to visit the University of Ibadan, Nigeria, in connection with the development of the rural training and research center at Igbo-ora; \$3,625;

HARVARD UNIVERSITY, Cambridge, Massachusetts:

Development of a Center for Population Studies at the School of Public Health, Boston; \$600,000 for a ten-year period, \$250,000 of which is to be applied to construction costs, conditional upon securing balance of funds required;

For use by its Law School and East Asian Research Center for a joint seminar in Chinese law; \$15,000 for a 15-month period;

Study of voting behavior with respect to public expenditure issues in urban areas, by Professor Edward C. Banfield and Associate Professor James Q. Wilson, Department of Government; \$14,000;

Research and travel expenses for the preparation of a history of Byzantium and the West, by Professor Robert Lee Wolff, Department of History; \$4,000;

Support of an exchange program of hospital residents with the University of Ibadan, Nigeria; \$3,150;

Microfilming of a valuable collection of scientific papers on relativity, under the direction of Professor Gerald Holton, Department of Physics; \$2,750;

MASSACHUSETTS INSTITUTE OF TECHNOLOGY, Cambridge: expansion of its psychology program; \$75,000;

DR. DANIEL R. McCALL, African Studies Program, Boston University, Massachu-

setts: to investigate archival material on Africa at universities, museums, and archives in Europe and North Africa; \$6,000;

NATIONAL THEATRE CONFERENCE, Tufts University, Medford, Massachusetts: completion of an appraisal of contemporary American theatre, by Marston Balch, executive secretary; \$4,000;

UNIVERSITY OF CONNECTICUT, Storrs: study of the small mammals of northern New England; \$1,467;

WILLIAMS COLLEGE, Williamstown, Massachusetts: continuation of a study of professional diplomacy in India, the United States, and Great Britain, by Dr. Warren F. Ilchman, assistant professor of political science; \$10,000 for a two-year period;

YALE UNIVERSITY, New Haven, Connecticut:

Support of its program to encourage and support the completion of important scholarly works by senior faculty members, especially in the humanities; \$200,000 for a six-year period;

Continued support of an advanced training program for African students at the Law School; \$75,000 through June, 1970;

Secretarial and technical assistance and supplies for the development of plans for the Rockefeller Foundation virus program in conjunction with the Department of Epidemiology and Public Health of the School of Medicine; \$10,000;

Council on Southeast Asia Studies; expenses of consultations between American and Indonesian specialists on problems of economic development and international relations; \$5,600 for a three-year period;

William Roger Louis, research fellow, Department of History; to complete research in England, Belgium, Germany, and France for a study entitled "The Great Powers and the Congo, 1876-1919"; \$3,850;

Continued research for a comparative evaluation of the judicial functions of the British House of Lords and the United States Supreme Court, by Professor Robert B. Stevens, Law School; \$3,400;

Translation of a study of the Japanese military administration of Indonesia, by Shigetada Nishijima and Koichi Kishi; \$1,000;

Middle Atlantic

ACTORS STUDIO, INC., New York: experimental work in the Playwrights Unit, and an instructional program in playwriting, acting, and directing; \$56,400;

AFRICAN-AMERICAN INSTITUTE, INC., New York: expenses of one member of a five-

man American team conducting two-week summer workshops in journalism and broadcasting in Ethiopia, Tanganyika, and Nigeria; \$3,250;

AMERICAN COUNCIL OF LEARNED SOCIETIES, New York: to encourage the development of historical studies of Chinese society and culture; \$10,000 for a three-year period;

AMERICAN PHILOSOPHICAL SOCIETY, Philadelphia, Pennsylvania: a study of "The Role of Philanthropy in Western Society"; \$40,000 for a two-year period;

AMERICAN UNIVERSITIES FIELD STAFF, INC., New York: expenses of a conference on nationalism and the alternatives in political development, at the Villa Serbelloni, Bellagio, Italy; \$15,000;

CARNEGIE INSTITUTE OF TECHNOLOGY, Pittsburgh, Pennsylvania: to enable Harold Clurman, drama critic, to observe professional theatre groups and university drama programs outside New York City; \$6,530;

COLUMBIA UNIVERSITY, New York:

To appoint Dr. Charles Glen King as special lecturer and associate director of the Institute of Nutrition Sciences; \$45,000 for a three-year period;

Graduate School of Business; research on the role of the "multinational" corporation in economic development, by Professor Richard Eells; \$10,000 for a two-year period;

To enable Dr. Jovan Djordjevic, dean, Faculty of Law, University of Belgrade, Yugoslavia, to continue research in comparative law in the United States and Western Europe; \$8,000;

To enable Miss Patricia Blake, research associate in the Russian Institute, to continue her research on Isaac Babel; \$7,500;

Research on the history of the Imperial City of Potosí, Viceroyalty of Peru, and consultation with scholars in the humanities program at the University of Valle, Cali, Colombia, by Dr. Lewis U. Hanke, professor of history; \$7,466;

Dr. Joseph F. Schacht, professor of Arabic and Islamics; to visit the University of East Africa and the University of Ankara, Turkey, to assist in development of Islamic Studies programs; \$6,875;

Bureau of Applied Social Research; a study by Dr. William A. Glaser of the International Differences in the Policy Problems of Nursing; \$5,100;

COMMUNITY FUNDS, INC., New York: for use by the Citizens Commission on Voluntary Health and Welfare Agencies in the development of plans for its program; \$10,000;

CONFERENCE OF THE TRAINING of personnel for programs concerned with the

control of population, held at the New York offices of The Rockefeller Foundation; \$1,800;

CORNELL UNIVERSITY, Ithaca, New York:

Dr. Robert Bradfield, research associate, Graduate School of Nutrition; to travel to South America to review and assist in planning research in biochemistry and nutrition at the University of San Marcos, the Agrarian University, and the Agricultural Research and Extension Service, in Lima, Peru, and at the University of São Paulo, Brazil; \$3,825;

Dr. Robert L. Plaisted, associate professor of plant breeding, New York State College of Agriculture; to visit Colombia, Ecuador, and Peru to conduct studies on potatoes; \$1,600;

Dr. Wilson G. Pond, professor of animal husbandry, New York State College of Agriculture; to visit various research institutions in Great Britain and Europe to study progress in production and nutrition of swine and other livestock, and to attend the Sixth International Congress of Nutrition in Edinburgh, Scotland, and the First World Conference on Animal Production in Rome, Italy; \$1,500;

Dr. James H. Gillespie, professor of veterinary bacteriology, New York State Veterinary College; to visit Colombia for the purpose of reviewing the Aftosa problem there; \$1,425;

HENRY HEWES, drama critic, New York: to observe professional theatre productions outside New York City; \$1,950 for a three-year period;

INSTITUTE OF INTERNATIONAL EDUCATION, New York: support of a special seminar in agricultural education, sponsored by the Council on Higher Education in the American Republics; \$10,000;

JAPAN SOCIETY, INC., New York: toward the costs of a meeting to plan an arts exchange program between Japan and the United States; \$5,000;

JESUIT EDUCATIONAL ASSOCIATION, New York: to enable its president, the Reverend Edward B. Rooney, S.J., to consult with officials of institutions of higher education in Asia, Europe, and the United States; \$3,400;

LINCOLN CENTER FOR THE PERFORMING ARTS, INC., New York: a further contribution toward the costs of its construction; \$5,000,000;

LONG ISLAND BIOLOGICAL ASSOCIATION, INC., Cold Spring Harbor, New York: support of a biological research program conducted by the Cold Spring Harbor Laboratory of Quantitative Biology; \$85,000 for a five-year period;

NATIONAL EDUCATIONAL TELEVISION AND RADIO CENTER, New York: toward development of a television film series entitled "The Environmental Revolution"; \$15,000 for a two-year period;

NEW YORK UNIVERSITY, New York:

Preparation of an index for the *Revista de Filología Española*, under the direction of Professor Alice M. Pollin and Mrs. Raquel Kersten, Department of Romance and Slavic Languages and Literatures; \$22,000 for an 18-month period;

Medical Center; to invite Dr. Josef Svejcar, professor of pediatrics, Charles University, Prague, Czechoslovakia, to attend scientific meetings and visit selected pediatrics departments in the United States; \$1,500;

PENNSYLVANIA STATE UNIVERSITY, University Park:

Professor Henry S. Albinski, Department of Political Science; travel expenses while engaged in studies of Australia's relations with modern China; \$2,100;

Dr. Russell Hyre, research pathologist, Buckhout Laboratory, United States Department of Agriculture; to attend the NATO Advanced Study Institute on Epidemiology and Biometeorology of Fungal Diseases of Plants, in Pau, France; \$375;

PRINCETON UNIVERSITY, New Jersey:

Support of an experimental summer school program for talented disadvantaged high school students; \$150,000 for a five-year period;

Support of a program under the direction of Professor Cyril E. Black, chairman, Coordinating Committee on Foreign and International Affairs, to enable scholars to accept special assignments for research and teaching related to university development in Latin America and Africa; \$100,000 for a five-year period;

Study of the office and powers of the Chief Justice of the United States, by Professor Alpheus T. Mason, Department of Politics; \$22,000 through 1964;

Assembly of materials for research in diplomatic history through additions to the John Foster Dulles Collection of state and personal papers; \$15,000;

To enable Miss Jeannette Mirsky, visiting fellow in the Department of Oriental Studies, to prepare a critical biography of Sir Mark Aurel Stein; \$10,000 for a three-year period;

PROTESTANT EPISCOPAL DIOCESE OF NEW YORK: toward the costs of a new program in creative theatre, to be conducted by the American Place Theatre, New York; \$13,025 for an 18-month period;

PURCHASE OF 1,000 COPIES of the revised edition of *Practical Malariaiology*, to be published by the Oxford University Press and distributed by The Rockefeller Foundation in the United States; \$10,513;

PURCHASE AND DISTRIBUTION of 200 copies of the *International Bibliography of Rice Research* to overseas countries; \$5,000 for a two-year period;

RAPKINE FRENCH SCIENTISTS FUND, INC., New York: equipment for research on cell biochemistry at the Radium Institute, Paris, France; \$9,000;

DR. CARROLL E. REYNOLDS, librarian, Maurice and Laura Falk Library of the Health Professions, University of Pittsburgh, Pennsylvania: to visit Nigeria to acquaint himself with medical library problems and to explore the possibility of producing a union list of biological serials; \$2,550;

ST. LUKE'S HOSPITAL, New York: additional physical facilities and equipment for the Nutrition and Metabolic Research Center; \$271,000 available on a matching basis;

SCIENTISTS' COMMITTEE FOR RADIATION INFORMATION, INC., New York: support of the Scientists' Institute for Public Information, Inc.; \$10,000;

SLOAN-KETTERING INSTITUTE FOR CANCER RESEARCH, New York: to appoint Dr. V. R. Khanolkar, director, Indian Cancer Research Centre and vice-chancellor, University of Bombay, as a visiting investigator; \$3,713;

SPECIAL PROJECTS relating to the program of The Rockefeller Foundation, including historical studies, presentations, and appraisals of program; \$228,822;

UNITED HEALTH FOUNDATIONS, INC., New York: toward administrative expenses for 1963; \$10,000;

UNITED NEGRO COLLEGE FUND, INC., New York:

Contribution to its campaign development fund; \$1,000,000;

Further development and strengthening of selected colleges that are members of the fund; \$1,500,000 during a three-year period;

UNIVERSITY OF PENNSYLVANIA, Philadelphia:

Preparation of a book on the design of cities, by Edmund N. Bacon, executive director, City Planning Commission of Philadelphia; \$15,000 for a two-year period;

Support of an underwater archaeological project, directed by George Bass under the auspices of the University Museum; \$10,000;

To appoint Dr. D. R. Gadgil, director, Gokhale Institute of Politics and Economics, Poona, India, as a visiting lecturer; \$8,600;

Expenses of a conference on the protection of the preschool child from malnutrition, held at the Villa Serbelloni, Bellagio, Italy; \$6,000;

UNIVERSITY OF PUERTO RICO, San Juan: development of a university-level program in nursing; \$10,000;

WOODROW WILSON NATIONAL FELLOWSHIP FOUNDATION, Princeton, New Jersey: support of the Woodrow Wilson Teaching Internship Program; \$405,000 for a three-year period;

YOUNG MEN'S AND YOUNG WOMEN'S HEBREW ASSOCIATION, New York: to enable John Simon, drama critic, to observe professional theatre groups and university drama programs outside New York City; \$6,180;

South

AMERICAN POLITICAL SCIENCE ASSOCIATION, Washington, D.C.: support of an experimental program of regional seminars for political science teachers in small colleges; \$10,000 for a two-year period;

ASSOCIATION OF STATE UNIVERSITIES AND LAND-GRANT COLLEGES, Washington, D.C.: toward establishment of an office to assist the association to coordinate the activities of its member colleges with other agencies working in the area of rural development abroad; \$60,000 for a three-year period;

BROOKINGS INSTITUTION, Washington, D.C.:

Costs of a study by Dr. Robert E. Scott, professor of political science at the University of Illinois, Urbana, on the role of universities in Latin American political development; \$12,229;

Research on United States-Cuban relations by its Foreign Policy Studies Division; \$10,000;

DR. GLENN W. BURTON, principal geneticist, Crops Research Division, Georgia Coastal Plain Experiment Station, Tifton: to visit pearl millet and sorghum research centers in Africa, Italy, India, Hong Kong, the Philippines, and California, and to attend the 11th International Congress of Genetics at The Hague, Netherlands; \$5,450;

HENRY CLEPPER, executive secretary, Society of American Foresters, Washington, D.C.: to attend the 12th Session of the Conference of the Food and Agriculture Organization of the United Nations in Rome, Italy, and to serve as nongovernmental adviser for forestry to the United States delegation; \$950;

DUKE UNIVERSITY, Durham, North Carolina:

Support of a student assistance program designed to advance equality in educational opportunity for southern youth, with special attention to Negro youth; \$250,000 through June, 1970;

Toward the costs of a conference on "A Decade of the British Commonwealth," to be held at the Villa Serbelloni, Bellagio, Italy, under the auspices of Duke University with the cooperation of the Institute of Commonwealth Studies, University of London, England; \$15,000;

EMORY UNIVERSITY, Atlanta, Georgia: support of a student assistance program designed to advance equality in educational opportunity for southern youth, with special attention to Negro youth; \$250,000 through June, 1970;

FLORIDA STATE UNIVERSITY, Tallahassee: to enable Dr. Webster C. Cash, associate professor of economics, to serve as visiting senior lecturer in economics at the University College of Rhodesia and Nyasaland, Salisbury, Southern Rhodesia; \$10,000 through 1964;

GEORGE WASHINGTON UNIVERSITY, Washington, D.C.: in-service training for information specialists through work on the production of a 1961 and 1962 supplement to the *International Bibliography of Rice Research*; \$6,000;

HOSPITALITY AND INFORMATION SERVICE, Washington, D.C.: support of a program to assist foreign diplomats stationed in Washington; \$6,000;

JOHNS HOPKINS UNIVERSITY, Baltimore, Maryland:

School of Advanced International Studies, Washington, D.C.; support of annual seminars for young diplomats from developing countries stationed at embassies in Washington; \$15,000 for a three-year period;

School of Advanced International Studies, Washington, D.C.; study of the diplomatic relations of the United States and France with Haiti from 1888 to 1915, by Leslie Manigat, Haitian scholar; \$9,450;

Dr. Warfield M. Firor, associate professor of surgery, School of Medicine; to visit the University of Ibadan, Nigeria, for discussions concerning the position of professor of surgery; \$4,200;

Completion of a history of United States Middle East policy from 1917 to 1928, by Dr. Laurence Evans, research associate, Center for Middle East Studies, Washington, D.C.; \$1,000;

LIBRARY OF CONGRESS, Washington, D.C.: to enable L. Quincy Mumford, Librarian of Congress, to visit the National Diet Library of Japan, Tokyo; \$1,875;

DR. J. LLOYD MECHAM, professor emeritus of government, University of Texas, Austin: to visit libraries in Washington, D.C., in connection with the revision of his book, *Church and State in Latin America*; \$1,200;

MOREHOUSE COLLEGE, Atlanta, Georgia: to enlarge its facilities for the teaching of physics; \$15,000;

NATIONAL ACADEMY OF SCIENCES, Washington, D.C.:

Expenses of foreign participants in connection with the centennial celebration of the academy; \$15,000;

Organizational expenses of the 16th International Congress of Zoology; \$10,000;

NATIONAL ACADEMY OF SCIENCES — NATIONAL RESEARCH COUNCIL, Washington, D.C.: for use by the Agricultural Board of the Division of Biology and Agriculture in stimulating research and development programs in the United States and abroad; \$15,000;

NATIONAL CULTURAL CENTER BUILDING PROGRAM, Washington, D.C.: toward the costs of construction and development of the center (now known as the John F. Kennedy Center for the Performing Arts); \$1,000,000;

OKLAHOMA STATE UNIVERSITY, Stillwater:

Development of the university's agricultural education program in Ethiopia; \$10,000;

Dr. Louis E. Hawkins, director, Agricultural Experiment Station, and Dr. Glenn C. Holm, dean, College of Veterinary Medicine; to visit universities, laboratories, and other research centers in Central and South America in connection with the development of cooperative programs between the university and similar institutions in Latin America; \$3,200;

Dr. Louis E. Hawkins, director, Agricultural Experiment Station, and Dr. Randall J. Jones, dean of resident instruction, College of Agriculture; to study teaching and research programs at the University of San Carlos, Guatemala City, Guatemala, for the development of a cooperative program between the two universities; \$1,350;

OVERSEAS EDUCATION FUND OF THE LEAGUE OF WOMEN VOTERS, Washington, D.C.: support of a training program in citizenship education for women chiefly from Latin American countries; \$50,000 through June, 1965;

PAN AMERICAN SANITARY BUREAU, Washington, D.C.: continued research on the chemical composition and nutritive value of indigenous food crops and forage plants in Central America and Panama, by the Institute of Nutrition of Central America and Panama, Guatemala City, Guatemala; \$5,000;

PRINCE EDWARD FREE SCHOOL ASSOCIATION, Farmville, Virginia: contribution toward an emergency remedial program of free elementary and secondary education in Prince Edward County; \$15,000;

SCIENCE SERVICE, Washington, D.C.: organization and operation of science fairs in Latin America; \$15,000;

DR. FRED L. SOPER, former Rockefeller Foundation officer: to serve as honorary president of the Seventh International Congresses on Tropical Medicine and Malaria in Rio de Janeiro, Brazil; \$1,400;

SOUTHERN REGIONAL COUNCIL, INC., Atlanta, Georgia: contribution toward its general program; \$50,000;

TEXAS A & M UNIVERSITY, College Station: to enable the Texas Agricultural Experiment Station to conduct research on feral oats of Texas and Mexico, under the direction of Dr. I. M. Atkins, small grain section leader; \$15,000 for a three-year period;

TEXAS TECHNOLOGICAL COLLEGE FOUNDATION, Lubbock: to enable Dr. B. L. Allen, professor of soils, to undertake a thin-section study of soils collected in the Sierra Tarascan region of Mexico; \$1,400;

TULANE UNIVERSITY OF LOUISIANA, New Orleans:

Support of a student assistance program designed to advance equality in educational opportunity for southern youth, with special attention to Negro youth; \$250,000 through June, 1970;

Support of a program in Latin American legal and social science research and training; \$68,500 for a four-year period;

To assist the *Tulane Drama Review* in preparing special issues and features on topics in contemporary drama; \$12,000 for a three-year period;

To enable drama critics Richard Gilman and Richard Schechner to observe professional theatre groups and university drama programs outside New York City; \$10,000;

Expenses of epidemiological field studies on mycology in Uganda, under the direction of Dr. Lorraine Friedman, Department of Microbiology, School of Medicine; \$3,695;

UNIVERSITY OF FLORIDA, Gainesville:

Study of political participation and leadership in nonmetropolitan local communities in Florida; \$3,000;

Dr. W. C. Price, Department of Plant Pathology; to attend the Third Conference of the International Organization of Citrus Virologists in Campinas, Brazil; \$760;

Dr. A. C. Tarjan, nematologist, Citrus Experiment Station, Lake Alfred; to attend the annual meetings of the Caribbean Division of the American Phytopathological Society in San José, Costa Rica, and to assist in a limited survey of plant parasitic nematodes in Costa Rica and Panama; \$550;

UNIVERSITY OF HOUSTON, Texas: to enable Professor Louis Brand to teach a course in mathematics at the University of Brazil, Rio de Janeiro; \$3,700;

UNIVERSITY OF MIAMI, Florida: to enable a group of scientists to travel to Lagos, Nigeria, to survey ocean waters of low and high biological productivity; \$10,250;

UNIVERSITY OF NORTH CAROLINA, State College of Agriculture and Engineering, Raleigh; to enable Donald Garth Nikles, assistant, School of Forestry, to collect materials in the Caribbean area; \$2,000 for an 18-month period;

UNIVERSITY OF OKLAHOMA, Norman: research on the adjustment problems of foreign students in Midwestern and Southwestern universities, under the direction of Professor Muzafer Sherif, director, Institute of Group Relations; \$10,000;

UNIVERSITY OF TEXAS, Austin:

For use by its Institute of Latin American Studies in the preparation of Guides to Latin American Historical Sources in the United States and Latin American countries; \$38,000 through July, 1965;

To appoint Professor Daniel Cosío Villegas, Colegio de México, Mexico City, as a visiting lecturer; \$2,770;

VANDERBILT UNIVERSITY, Nashville, Tennessee: support of a student assistance program designed to advance equality in educational opportunity for southern youth, with special attention to Negro youth; \$250,000 through June, 1970;

DR. KENNETH S. WARREN, Laboratory of Parasitic Diseases, National Institutes of Health, Bethesda, Maryland: to visit the East African Institute for Medical Research, Mwanza, Tanganyika, to observe current bilharziasis research; \$1,055;

WEST VIRGINIA UNIVERSITY, Morgantown:

Alderson Fry, librarian, Medical Center Library; to study and advise on library developments in the Far East; \$3,600;

To enable academic leaders of Keio University, Japan, to observe university library management and training in the United States and Europe; \$10,000;

Central West

AMERICAN LIBRARY ASSOCIATION, Chicago, Illinois:

To enable academic leaders of Keio University, Japan, to observe university library management and training in the United States and Europe; \$10,000;

Expenses of members of the Association of Assistant Librarians of Great Britain studying at libraries in Boston, Massachusetts, Washington, D.C., and New York City; \$5,600;

ASSOCIATION OF AMERICAN MEDICAL COLLEGES, Evanston, Illinois: to assist in the establishment and operation of a secretariat for the Pan American Federation of Associations of Medical Schools; \$75,000 for a five-year period;

Roswell C. Blount, Allerton, Iowa: travel to Enugu, Nigeria, to continue the development of a project on agricultural extension and rural sociology at the University of Nigeria; \$2,600 for a three-year period;

Dr. Wesley F. Bucelle, Department of Agricultural Engineering, Iowa State University of Science and Technology, Ames: to study rice production and mechani-

zation at agricultural institutions throughout the world, to visit the Oklahoma State University program at Addis Ababa, Ethiopia, and to attend a conference on agricultural engineering at Los Baños, Philippines; \$2,960;

COLLEGE OF ST. THOMAS, St. Paul, Minnesota: research on the strategy of economic development in Latin America, by Dr. Nino A. Maritano, assistant professor of economics; \$6,600;

INDIANA UNIVERSITY, Bloomington: expenses of a consortium of North American and British universities and scholars concerned with the future custody and use of the Polish Library of Paris, France; \$10,000;

KANSAS STATE UNIVERSITY ENDOWMENT ASSOCIATION, Manhattan: to enable Dr. Reginald H. Painter, professor of entomology, to assist with a project for evaluating the insect resistance of the germ plasm in the Mexican and Colombian corn banks; \$13,300;

MARQUETTE UNIVERSITY SCHOOL OF MEDICINE, Milwaukee, Wisconsin: support of an exchange program with the Department of Experimental Research, Medical University of Budapest, Hungary; \$4,000;

MICHIGAN STATE UNIVERSITY, East Lansing:

Economic research, under the direction of Dr. Dale E. Hathaway, professor of agricultural economics; \$16,500;

Study of land and politics and the changing regime in Hawaii, by Dr. Robert Horwitz, associate professor of political science; \$5,060;

Laboratory equipment for the Department of Agricultural Engineering, College of Agriculture; \$1,500;

oberlin college, Ohio: support of an experimental summer school program for talented disadvantaged high school students; \$150,000 for a five-year period;

OHIO STATE UNIVERSITY, Columbus:

Research in plant pathology, under the direction of Dr. C. C. Allison, College of Agriculture and Home Economics; \$10,000;

Research on the fungal synthesis of microbial protein, under the direction of Dr. William D. Gray, Department of Botany and Plant Pathology, College of Agriculture and Home Economics; \$10,000;

PURDUE UNIVERSITY, Lafayette, Indiana:

Study of technological change and economic growth, and of problems of price fixing in periods of political and military crises, by Dr. Edward Ames, professor of economics; \$9,425;

Dr. Gerald O. Mott, professor of agronomy; to visit forage and livestock research centers in Brazil and Chile, and to review the forage research program of The Rockefeller Foundation's Chilean Agricultural Program; \$1,925;

Dr. Helmut Kohnke, associate professor, Department of Agronomy; to serve as a visiting professor in the Department of Soils, University of Caldas, Manizales, Colombia; \$1,400;

Dr. Arnold J. Ullstrup, professor of plant pathology, and plant pathologist, United States Department of Agriculture; to visit Mexico to observe and study maize diseases; \$1,070;

DR. WALTER R. SCHLESINGER, director, Department of Microbiology, School of Medicine, University of St. Louis, Missouri: to visit Jamaica and Puerto Rico to observe specimens and records from a recent dengue epidemic; \$950;

UNIVERSITY OF CHICAGO, Illinois:

Research in economics, under the direction of Professor Theodore W. Schultz, chairman, Department of Economics; \$175,000 for a six-year period;

Research in selected Middle Eastern and North African countries on the cultural and social gap as a problem in modernization; \$60,000 through 1965;

Research on development and use of international water resources in Africa, by Professor Gilbert F. White, chairman, Department of Geography; \$50,000 for a three-year period;

Partial expenses of Argentine economists studying in the graduate program of economics at the University of Cuyo, Mendoza; \$10,000 for a two-year period;

Analysis of economic forecasting and general economic indicators, by Dr. Martin J. Bailey, associate professor of economics; \$5,000 through September, 1964;

Preparation of a volume on major aspects of Indian literature; \$2,200;

UNIVERSITY OF ILLINOIS, Urbana:

To enable graduates of Uttar Pradesh Agricultural University, Rudrapur, India, to undertake graduate training at the University of Illinois; \$7,500 for a three-year period;

Dr. Robert B. Downs, director, and Dr. Herbert Goldhor, assistant director, Graduate School of Library Science; to visit Medellin, Colombia, to become acquainted with the organization and curriculum of the Inter-American School of Library Science, University of Antioquia; \$2,240;

UNIVERSITY OF MICHIGAN, Ann Arbor:

To enable Professor Henry L. Bretton, Department of Political Science, to serve as visiting professor at the University of Ghana, Legon, Accra; \$15,000 through 1966;

Study of moral and cultural change in America from 1850 to 1870, by Professor John Higham, Department of History; \$7,500;

Survey Research Center; completion of a panel study of relationships among changes in income, income expectations, and decisions respecting saving and investment; \$7,500;

Dr. John B. Burch, curator of mollusks and assistant professor of zoology; to collect snails and observe schistosomiasis research in Southern Rhodesia, Tanganyika, Kenya, and Ethiopia; \$3,000;

UNIVERSITY OF MINNESOTA, Minneapolis: support of a developmental program for advanced creative work in the theatre, and expenses of preliminary studies; \$75,395;

UNIVERSITY OF NEBRASKA, Lincoln:

Research and study on problems of agricultural economics, by Dr. Ismail Sener of Ankara, Turkey; \$10,000;

To enable Dr. Khem M. Shahani, professor of dairy husbandry, College of Agriculture, to visit selected biochemistry laboratories in France, England, the Netherlands, and Sweden to study the characteristics of microbial and milk lipases; \$2,250;

UNIVERSITY OF NOTRE DAME, Indiana: collaborative research on plant virus diseases by Dr. Gerd T. A. Benda, associate professor of biology, and Dr. Alvaro Santos Costa, Institute of Agronomy, São Paulo State Secretariat of Agriculture, Campinas, Brazil; \$14,400;

UNIVERSITY OF WISCONSIN, Madison:

Special appointment of senior staff to universities in Africa; \$100,000 for a three-year period;

Completion of studies of Japanese medical education and a study of medical education in developing countries, by Dr. John Z. Bowers, professor of medicine; \$15,000;

To assist in the establishment of its program in International Theatre; \$10,000;

To enable Dr. Nathan J. Smith, professor of pediatrics, and Dr. Julio Meneghelli, professor of pediatrics, University of Chile, Santiago, to exchange visits to establish a collaborative program; \$8,160;

To appoint Professor Agesilau A. Bilancourt, director, Division of Plant Biology, Institute of Biology, São Paulo State Secretariat of Agriculture, São Paulo, Brazil, as a visiting lecturer; \$4,850;

Research expenses in connection with the preparation of a book on agricultural extension methods; \$3,000;

Dr. Richard Dale Powers, associate professor, Department of Agricultural Journalism; to visit the National Institute of Agricultural Research, Mexico City, Mexico, to study and participate in agricultural communications and education projects; \$2,075;

Dr. James E. Kuntz, associate professor, Department of Plant Pathology; to participate in the work conference of the International Union of Forest Research Organizations and the symposium on Internationally Dangerous Forest Tree Diseases, in Rome, Italy, and to attend the Tenth International Botanical Congress in Edinburgh, Scotland; \$1,230;

WALKER ART CENTER, Minneapolis, Minnesota: support of a program in the performing arts, to be conducted by the Center Arts Council; \$14,250;

WASHINGTON UNIVERSITY, St. Louis, Missouri: study of the urban design process in urban renewal, by Roger Montgomery, associate professor of architecture; \$15,000 for a two-year period;

West

CALIFORNIA INSTITUTE OF TECHNOLOGY, Pasadena: study of the High Commission Territories and their relationships with South Africa, South West Africa, and Southern Rhodesia, by Dr. Edwin S. Munger, professor of geography, Division of Humanities; \$10,000 for a three-year period;

MONTANA STATE COLLEGE, Bozeman: for use by the Department of Plant and Soil Science, to enable Nelson de Barros Barreto to complete requirements for the M.S. degree; \$900;

PROFESSOR MORRIS DAVID MORRIS, Department of Economics, University of Washington, Seattle: to visit universities in Asia on behalf of the Economic History Association; \$875;

OREGON STATE UNIVERSITY, Corvallis:

Research on methods of eliminating infections in seeds, under the direction of Dr. John R. Hardison, research pathologist, Department of Botany and Plant Pathology; \$8,000;

Dr. William Saxon McGuire, Department of Farm Crops; to study pasture establishment, production and management research, and legume nodulation research in Australia and New Zealand; \$4,890;

Mrs. Clara L. Sirmerville, foreign student counselor; to visit Africa, Puerto Rico, Haiti, and Mexico in connection with her responsibilities at the university; \$3,000;

RAND CORPORATION, Santa Monica, California: research on native African agricultural productivity in Northern and Southern Rhodesia; \$15,000;

DR. RALPH C. RICHARDS, associate professor of surgery, University of Utah, Salt Lake City; to visit New York City, Washington, D.C., and Boston, Massachusetts, for discussions concerning the position of professor of surgery at the University of Ibadan, Nigeria; \$650;

STANFORD UNIVERSITY, California:

Graduate research and training in natural product chemistry, collaborative between the Department of Chemistry, under the direction of Dr. Carl Djerassi, and a group of plant product chemists at the University of Brazil, Rio de Janeiro; \$110,000 through September, 1966;

Study of certain crucial aspects of the agricultural economy of Colombia and their impact on economic development, by the Food Research Institute; \$8,300;

Completion of a study of native policy in Southern Rhodesia from 1890 to 1923, by Peter Duignan, executive secretary and curator of the Africa collection, Hoover Institution on War, Revolution, and Peace; \$5,300;

To invite Dr. J. Fajkos of the Czechoslovak Academy of Sciences, Prague, to serve as a visiting investigator; \$3,000;

Dr. WILMOT A. THORNTON, Biology Department, Fort Lewis Agricultural and Mechanical College, Durango, Colorado: to visit the Smithsonian Institution in Washington, D.C., to identify herpetological material collected in Colombia; \$600;

UNIVERSITY OF CALIFORNIA:

Berkeley:

Study of United States-Thai relations by Dr. Donald E. Nuechterlein, assistant research political scientist; \$10,100;

Specialized training in Chinese law for Professor Jerome A. Cohen, School of Law; \$6,000 additional through June, 1964;

Expenses of a symposium on the Genetics of Colonizing Species (grant transferred from the University of Edinburgh, Scotland); \$5,000;

To appoint Professor Jacques Freymond, director, Graduate Institute of International Studies, Geneva, Switzerland, as a visiting lecturer; \$4,675;

Dr. Richard M. Taylor, School of Public Health; to observe current research at virus laboratories in Latin America, and to attend the Seventh International Congresses on Tropical Medicine and Malaria in Rio de Janeiro, Brazil; \$3,000;

Professor Robert A. Scalapino, chairman, Department of Political Science; to visit university departments of political science in Asia and Africa; \$1,500;

Davis:

Dr. R. Merton Love, chairman, Department of Agronomy, College of Agriculture; to confer with plant scientists in Greece, Scotland, and other countries; \$5,800;

Dr. Robert N. Campbell, assistant professor of plant pathology, College of Agriculture; to confer with specialists in plant pathology research in the United Kingdom and on the Continent; \$2,325;

Los Angeles:

Development of personnel for the Television and Radio Division of the Department of Theater Arts, under the direction of Professor Arthur Friedman; \$10,000 for a two-year period;

Stanley W. Driskell, Department of Economics; to serve as a teaching assistant in the Department of Economics, University College of Rhodesia and Nyasaland, Salisbury, Southern Rhodesia; \$4,400 through 1965;

Riverside:

Dr. Cyrus M. McKell, vice-chairman, Department of Agronomy; to observe and confer on grassland agricultural practices in Nigeria and Kenya, and to attend the Tenth International Botanical Congress in Edinburgh, Scotland; \$3,171;

Dr. Lewis G. Weathers, Department of Plant Pathology; to visit citrus research centers in Argentina and Brazil, and to attend the Third Conference of the International Organization of Citrus Virologists in Campinas, Brazil; \$1,800;

Student fees and travel expenses for Jesús Castro Franco, assistant and Ph.D. candidate in the Department of Plant Pathology, College of Agriculture; \$1,320;

UNIVERSITY OF COLORADO, Boulder: expenses of the international activities of the Biological Sciences Curriculum Study; \$10,000;

UNIVERSITY OF SOUTHERN CALIFORNIA, Los Angeles: development of a training program for music critics at the School of Music; \$296,000 through August, 1968;

UNIVERSITY OF WYOMING, Laramie:

Dr. Alan A. Beetle, head, Range Management Section, College of Agriculture; to visit Mexico to study grasses and range management problems; \$590;

Dr. Morton May, associate professor, Range Management Section, College of Agriculture; to visit Mexico to study range and wildlife management problems; \$590.

SPECIAL PROGRAMS

STUDIES IN INTERNATIONAL RELATIONS

ALL SOULS COLLEGE, UNIVERSITY OF OXFORD, England: an investigation of the historical antecedents of Britain's new outlook on her future, by Professor Max Beloff, Fellow of All Souls; \$5,700;

AMERICAN UNIVERSITIES FIELD STAFF, INC., New York: study of Japan's economic, cultural, and political relations with Asia since 1952, by Dr. Lawrence Olson, Japan representative; \$10,000;

BRANDEIS UNIVERSITY, Waltham, Massachusetts: study of the growth of new social groups in West Africa, by Dr. Ruth Schachter Morgenthau, visiting associate professor of politics; \$2,550;

CITY COLLEGE, CITY UNIVERSITY OF NEW YORK: study of the uses of national power in a nuclear age, by Dr. John Herz, professor of political science; \$8,600;

COLUMBIA UNIVERSITY, New York:

Study of the implications of the Sino-Soviet rift for the Asian communist movement, by Dr. Donald S. Zagoria, research fellow; \$10,000;

Study of the socio-political factors affecting relationships among political units, by Dr. Amitai Etzioni, associate professor of sociology and research associate, Institute of War and Peace Studies; \$5,400;

DUKE UNIVERSITY, Durham, North Carolina: study of the role and future prospects of the General Agreement on Tariffs and Trade, by Dr. Herman Walker, visiting professor of political science; \$8,900;

GRADUATE INSTITUTE OF INTERNATIONAL STUDIES, Geneva, Switzerland: study of the impact on its Member States of the supervision and implementation of international treaties by the International Labor Organization, by Ernest A. Landy, counsellor, ILO; \$5,110;

HARVARD UNIVERSITY, Cambridge, Massachusetts: research on Chinese military policy, by Dr. Morton H. Halperin, research associate, Center for International Affairs, while serving as visiting lecturer in strategic studies, University of London, England; \$6,653;

IKUHIKO HATA, special researcher, Economic Institute, Tokyo, Japan: research on the history of the Japanese-American war; \$5,100;

JOHNS HOPKINS UNIVERSITY, Baltimore, Maryland: preparation of a paper on West German concerns about the international organization of strategic deterrence, by Dr. Jeremy Blanchet, research associate, School of Advanced International Studies; \$6,635;

LONDON SCHOOL OF ECONOMICS AND POLITICAL SCIENCE, UNIVERSITY OF LONDON, England: research for a political biography of Pierre Laval, by Geoffrey Warner, research assistant, Royal Institute of International Affairs; \$4,250;

NATIONAL FOUNDATION OF POLITICAL SCIENCES, Paris, France: study of possible changes in international order and their relationship to the evolution of new states, by Pierre Hassner, research associate, Center for the Study of International Relations; \$5,415;

NORTHWESTERN UNIVERSITY, Evanston, Illinois: study of the political development of Algeria since independence, by Dr. Richard M. Brace, professor of modern history; \$8,000;

PRINCETON UNIVERSITY, New Jersey: research on the politics and diplomacy of peacemaking as exemplified by the Paris peace conference, 1918-1920, by Dr. Arno J. Mayer, associate professor of history; \$10,500;

UNIVERSITY OF ANKARA, Turkey: study of the changes in Turko-Russian relations resulting from the Bolshevik revolution, by Professor Akdes Nimet Kurat, Faculty of Letters; \$2,000;

UNIVERSITY OF CALIFORNIA:

Berkeley:

Study of the decline and fall of the nation state, by Dr. Leslie Lipson, professor of political science; \$10,000;

Davis:

Partial support for a study of the military and political theories of Karl von Clausewitz, by Dr. Peter Paret, visiting assistant professor, Department of History; \$1,532;

UNIVERSITY COLLEGE OF SWANSEA, Wales: study of Soviet national behavior in the secretariats of United Nations agencies, by Dr. Roger Pethybridge, lecturer on Soviet political institutions; \$3,525;

UNIVERSITY OF CONNECTICUT, Storrs: biographical study of John Foster Dulles for the series *American Secretaries of State and Their Diplomacy, 1925-1961*, by Professor Louis L. Gerson, Department of Political Science; \$9,960;

UNIVERSITY OF HAWAII, Honolulu: study of the impact of the West, including Russia, on Asia during the late nineteenth and twentieth centuries, by Professor John Albert White, chairman, Department of History; \$7,000;

UNIVERSITY OF MASSACHUSETTS, Amherst:

Inquiry into the origins of modern diplomacy, by Professor Vincent Ilardi, Department of History; \$7,400;

Study of the impact of German nationalism on the problem of German reunification, by Professor Ferenc A. Vali, Department of Government; \$7,291;

UNIVERSITY OF PITTSBURGH, Pennsylvania: research on American participation in the Organization for Economic Cooperation and Development, by Dr. Daniel S. Cheever, associate professor of international affairs and political science, and by Dr. Milton J. Esman, professor of public and international economic affairs; \$10,000;

UNIVERSITY OF TENNESSEE, Knoxville: analysis of *de facto* changes in the Charter of the United Nations, by Professor Salo Engel, Department of Political Science; \$10,000;

UNIVERSITY OF VERMONT, Burlington: research on the relationship of communist doctrine and Soviet domestic and foreign policies, by Dr. Robert V. Daniels, associate professor of history; \$4,623;

UNIVERSITY OF WISCONSIN, Madison: study of the decision-making process illustrated by the agricultural sector within the European Economic Community, by Dr. Leon N. Lindberg, assistant professor of political science; \$9,000;

VANDERBILT UNIVERSITY, Nashville, Tennessee: study of regional integration and cooperation in Southeast Asia, by Dr. Bernard K. Gordon, assistant professor of political science; \$5,000;

WAYNE STATE UNIVERSITY, Detroit, Michigan: analysis of international monetary cooperation and reform, by Dr. Bernard Goodman, associate professor of economics; \$10,000.

STUDIES IN CONSTITUTIONAL DEMOCRACY

AMHERST COLLEGE, Massachusetts: research on the political philosophy of John Stuart Mill, by Dr. George Kateb, assistant professor of political science; \$1,500;

AUSTRALIAN NATIONAL UNIVERSITY, INSTITUTE OF ADVANCED STUDIES, Canberra: study of the philosophic and juristic aspects of lower courts in New York State, by Professor Geoffrey Sawer, head, Department of Law; \$2,000;

CLAREMONT MEN'S COLLEGE, California: study of the fundamental principles of the American constitutional system as revealed in the *Federalist Papers*, by Dr. Martin Diamond, Department of Political Science; \$10,000;

COLUMBIA UNIVERSITY, INSTITUTE OF WAR AND PEACE STUDIES, New York: continuation of a study of political accommodation among the great powers in the nuclear age, by Professor Reinhold Niebuhr, research fellow; \$4,000;

QUEEN'S UNIVERSITY, Kingston, Canada: study of the Canadian General Election of 1962, by Dr. John Meisel, associate professor of political science; \$10,000 for a 16-month period;

SMITH COLLEGE, Northampton, Massachusetts: completion of a study of relations between Roman Catholicism and National Socialism in Germany, by Dr. Guenter Lewy, assistant professor of government; \$8,150;

SWARTHMORE COLLEGE, Pennsylvania: research on democracy and political development, by Professor J. Roland Pennock, chairman, Department of Political Science; \$5,000;

UNIVERSITY OF CALIFORNIA, Santa Barbara: study of the role of political parties in the attempts to maintain government stability in Germany during the past 40 years, by Dr. Peter H. Merkl, assistant professor of political science; \$10,000;

UNIVERSITY OF MARBURG, Germany: comparative study of legislative control of national taxation and expenditure, by Dr. Karl-Heinrich Friauf, research assistant, Faculty of Law and Government; \$5,000;

UNIVERSITY OF OREGON, Eugene: completion of research on the Belgian political system, by Dr. Val R. Lorwin, professor of history; \$10,000;

UNIVERSITY OF ROCHESTER, New York: continuation of research on the appropriations process in the United States House of Representatives, by Dr. Richard E. Fenno, Jr., associate professor of political science; \$10,000;

UNIVERSITY OF WISCONSIN, Madison: research on the nature of political parties in advanced Western democracies, by Professor Leon D. Epstein, chairman, Department of Political Science; \$9,000;

WASHINGTON UNIVERSITY, St. Louis, Missouri: study of the nature of political parties in the evolving American democracy from 1789 to 1964, by Dr. William N. Chambers, professor of political science; \$10,000.

VIRUS RESEARCH PROGRAM

For VIRUS RESEARCH in the United States; \$552,000.

GRANTS MADE IN CANADA

CANADIAN UNIVERSITY SERVICE OVERSEAS, Ottawa: partial expenses of a summer training program for African teachers, under the direction of the Canadian Teachers' Federation; Canadian \$5,000 (about \$4,700);

LAVAL UNIVERSITY, Quebec: to enable Dr. Gerard M. Fritters, professor of political science, to conduct research in Europe, Pakistan, India, and Mongolia; \$5,840;

McGILL UNIVERSITY, Montreal:

Expenses of two consultants on development of a Postgraduate Medical School in Nairobi, Kenya; \$3,060;

Professor Charles P. Leblond, Department of Anatomy; to visit biological research centers in Latin America, and to attend an international symposium on the control of cell division and induction of cancer in Cali, Colombia, and Lima, Peru; \$2,165.

GRANTS MADE IN EUROPE

AUSTRIA

SUPPORT OF Hungarian refugee students and scholars studying the arts and sciences at 12 Austrian institutions of higher learning; 2,750,000 Austrian schillings (about \$110,000);

UNIVERSITY OF VIENNA: research in virology, under the direction of Professor Hans Moritsch; \$8,000;

BULGARIA

BULGARIAN ACADEMY OF SCIENCES, Sofia: research equipment for the Research Institute of Bulgarian Language; \$3,700;

DENMARK

PROFESSOR SVEN HENNINGSSEN, professor of political science, University of Copenhagen: to visit colleges and universities while in West Africa; \$728;

POST-BASIC SCHOOL OF NURSING, AARHUS UNIVERSITY:

Miss Anna Margrethe Bang Christensen, director of public health nursing; to visit nursing schools in the United States to observe programs of postbasic nursing education; \$2,880;

Miss Henriette Elisabeth Larsen, director of the course in administration; to visit nursing schools in the United States to observe programs of postbasic nursing education; \$2,655;

FINLAND

DR. PERTTI ANTERO PESONEN, acting professor of political science, University of Turku: to collect data in the United States and Norway for the completion of a comparative study of voting behavior in Finland; \$1,825;

FRANCE

ECOLE PRATIQUE DES HAUTES ETUDES, Paris: purchase of microfilm and documents connected with archival research in Turkey, Iran, and Afghanistan, by Alexandre Bennigsen and Mrs. C. Lemercier-Quelquejay of its Sixth Section; \$2,000;

INSTITUTE OF APPLIED ECONOMICS, Paris: support of a research program on the impact of industrialization on the rural sector of the economies of selected African countries, to be conducted by the institute's office in Dakar, Senegal, under the general direction of Dr. C. J. van der Vaeren; \$32,000 for a two-year period;

NATIONAL FOUNDATION OF POLITICAL SCIENCES, Paris: support of a program of research and training on Latin America, by the Center for the Study of International Relations; \$37,400 for a three-year period;

GERMANY

GERMAN INSTITUTE FOR ECONOMIC RESEARCH, Berlin: research on East German economic problems, under the direction of Dr. Gerhard Abeken; 50,000 German marks (about \$13,000) through May, 1965;

ITALY

UNIVERSITY OF ROME: support of a study of the role of social science in modern Italian society, by Professor Franco Ferrarotti, director, Institute of Sociology; \$4,800 for a two-year period;

NETHERLANDS

HAGUE ACADEMY OF INTERNATIONAL LAW: support of a series of lectures on international law by scholars from Asia and Africa; \$10,000 for a three-year period;

NETHERLANDS ECONOMIC INSTITUTE, Rotterdam: economic research and analysis for education planning, under the direction of Professor Jan Tinbergen; 83,000 Dutch guilders (about \$23,650) for a two-year period;

UNIVERSITY OF LEIDEN: to enable Professor A. Querido, professor of endocrinology and dean of the Medical Faculty, to serve as visiting professor of medicine at the All India Institute of Medical Sciences, New Delhi; \$9,300;

POLAND

H. DUBNIAK, director, Department of Agricultural and Forestry Studies, Ministry of Higher Education, Warsaw: to visit centers of plant protection research in Europe; \$1,200;

EXPENSES OF A TRAVELING SEMINAR, in England, Denmark, and Finland, of Polish nurses selected by the Ministry of Health and Social Welfare, Warsaw; \$10,000;

INSTITUTE OF SOIL SCIENCE AND PLANT CULTIVATION, Pulawy: research equipment for the Department of Agricultural Microbiology; \$3,100;

DR. ZDZISLAW SUWALA, director, Middle Medical Schools Department, Warsaw: to visit schools of nursing in the United States to observe training programs, particularly in public health nursing, and the administration and organization of schools of nursing; \$3,600;

SPAIN

UNIVERSITY OF MADRID: purchase of research equipment for the Department of Physiology, Faculty of Medicine; \$10,000;

SWITZERLAND

GRADUATE INSTITUTE OF INTERNATIONAL STUDIES, Geneva: administrative needs in connection with its teaching and research programs; \$15,000 for a three-year period;

UNITED KINGDOM

DR. J. B. GOODEY, principal research officer, Nematology Department, Rothamsted Experimental Station, Harpenden: to visit the Indian Agricultural Research Institute, New Delhi, to assist in nematology training courses; \$2,475;

DR. JOHN G. HAWKES, professor of taxonomic botany, Department of Botany, University of Birmingham: to visit Peru and Mexico in connection with studies on potatoes; \$1,935;

MEDICAL RESEARCH COUNCIL, London: a final contribution to its program of fellowships in the medical sciences; \$25,000 through 1964;

ROYAL INSTITUTE OF INTERNATIONAL AFFAIRS, London: research in connection with the series *Islamic Society and the West*; \$20,180 for a five-year period;

UNIVERSITY OF CAMBRIDGE:

Research on the biochemistry of reproduction, under the direction of Dr. T. R. R. Mann, reader in physiology of animal reproduction, School of Veterinary Medicine, and director, Unit of Reproductive Physiology and Biochemistry, British Agricultural Research Council; \$15,000 for a three-year period;

Research on sensory physiology of invertebrate animals in the Department of Zoology; £2,000 (about \$5,700);

Peterhouse; research and conferences, under the auspices of the British Committee on the Theory of International Politics; £1,800 (about \$5,130) through June, 1966;

Professor E. H. Carr, Trinity College; to visit Russian documentary collections in the United States; \$3,500;

Dr. John H. Elliott, university lecturer in history, Trinity College; to visit Latin American studies centers in North and South America; \$2,000;

UNIVERSITY OF GLASGOW:

Dr. W. L. Weipers, director of veterinary education; to confer with veterinary education officials in Kenya and the Sudan; \$1,725;

Dr. Ian McIntyre, professor of veterinary medicine, Faculty of Medicine; to confer with officials of the Faculty of Veterinary Science of the Royal College, University of East Africa, Kabete, Kenya; \$1,640;

UNIVERSITY OF LONDON:

King's College; research equipment for the Department of Biophysics; £21,000 (about \$60,000) for a two-year period;

London School of Economics and Political Science; training and research in political science, with particular reference to strategic studies, by scholars from universities in the Far East, the Middle East, and Africa; £11,075 (about \$31,565) for a three-year period;

Institute of Advanced Legal Studies; research fellowships for Asian and African legal scholars; £8,000 (about \$22,800) through August, 1969;

University College; research in mammalian genetics, under the direction of Professor Hans Grüneberg, Department of Eugenics, Biometry, and Genetics; \$14,000 for a two-year period;

School of Oriental and African Studies; research on contemporary Turkish literature, by Professor Fahir Iz, director, Institute of Turcology, Istanbul University, Turkey; \$7,000 for a three-year period;

Dr. Mark Blaug, director, Research Unit in the Economics of Education, Institute of Education; to undertake research in Africa on "The Role of Education in the Transition from Subsistence to Cash Economies"; \$2,200;

UNIVERSITY OF OXFORD:

St. Antony's College; support of a research and training program in African studies; \$75,000;

J. H. A. Watson, Fellow of Nuffield College; expenses while engaged in research in the United States on the problems of the conduct of foreign policy by newly independent states; \$2,425.

GRANTS MADE IN LATIN AMERICA

ARGENTINA

NATIONAL COUNCIL OF SCIENTIFIC AND TECHNICAL RESEARCH, Buenos Aires: toward expenses of equipment and supplies for research in Argentine universities; \$160,000 for a two-year period;

NATIONAL INSTITUTE OF AGRICULTURAL TECHNOLOGY, Buenos Aires:

Manuel Gutiérrez, director, Agricultural Experiment Station, Presidencia Roque Sáenz Peña; to visit agricultural research centers in the United States; \$5,150;

Ramón Oscar Videla, director, Bordenave Experiment Station, Buenos Aires; to visit wheat, alfalfa, and forage research centers in Mexico, the United States, and Canada; \$3,275;

Benito Petersen, wheat breeder, Buenos Aires; to study wheat breeding at The Rockefeller Foundation's Mexican Agricultural Program; \$2,575;

DR. MARTA SABATTINI, investigator, Institute of Virology, Faculty of Medical Sciences, National University of Córdoba: to observe current research on arthropod-borne viruses at the Belém Virus Laboratory, Brazil; \$1,830;

BRAZIL

BRAZILIAN SOCIETY OF GENETICS, São Paulo:

Promotion of interlaboratory cooperation in Brazil; Cr. 1,860,000 (about \$3,000);

To enable members of the society's Commissions on Vegetable, Animal, and Human Genetics to meet in São Paulo to discuss current research and training programs; \$1,000;

DR. FIRMINO TORRES DE CASTRO, biologist, Institute of Biophysics, University of Brazil, Rio de Janeiro: to accept an appointment as research collaborator at the Center for Nuclear Studies, Saclay, France; \$1,550;

DR. BENJAMIN GILBERT, Section of Plant Chemistry, Institute of Agricultural Chemistry, Rio de Janeiro: to plan a joint research program with Stanford University, California, and to participate in the Gordon Research Conference on the Chemistry of Natural Products; \$1,150;

CARLOS A. KRUG, regional agricultural officer, Food and Agriculture Organization of the United Nations, Regional Office (Eastern Zone), Rio de Janeiro: to attend the American Society of Agronomy meetings in Denver, Colorado; \$1,490;

MUSEUM OF THE DEPARTMENT OF ZOOLOGY, São Paulo State Secretariat of Agriculture, São Paulo: research equipment; \$4,500;

UNIVERSITY OF BAHIA, Salvador: salaries, field operating expenses, and equipment for the Laboratory of Human Genetics, Faculty of Medicine; Cr. 517,000 and \$2,680 (about \$3,300);

UNIVERSITY OF MINAS GERAIS, Belo Horizonte: expenses of research and field operations and the purchase of equipment for the Institute of General Biology, Faculty of Philosophy; \$15,000 for a two-year period;

UNIVERSITY OF PARANA, Curitiba:

Preparation of a catalogue of Neotropical bees, by Professor Jesús S. Moure, head, Department of Zoology; \$25,000 for a three-year period;

Salaries and salary supplements, field operating expenses, and library materials for the Laboratory of Human Genetics, Faculty of Philosophy; Cr. 6,288,000 and \$6,675 (about \$14,221);

UNIVERSITY OF RIO GRANDE DO SUL, Pôrto Alegre:

Laboratory of Molecular Genetics, Faculty of Philosophy; salary supplements, operating expenses, and equipment; \$7,194;

Laboratory of Human Genetics, Faculty of Philosophy; equipment and supplies; \$5,000;

Department of Genetics, Faculty of Philosophy; salary supplements, operating expenses, and supplies; \$1,758;

Faculty of Medicine; purchase and shipment of films for the School of Nursing; \$1,200;

UNIVERSITY OF SAO PAULO:

Institute of Atomic Energy; equipment essential to its operations and its research program in radiochemistry; \$24,000;

Laboratory of Animal Genetics, Faculty of Philosophy, Sciences, and Letters; salary supplements for temporary personnel, equipment, and operating and field expenses; Cr. 10,000,000 (about \$18,000);

Laboratory of Medical Genetics, Faculty of Medicine; operating expenses; Cr. 2,580,000 and \$5,000 (about \$8,096);

To invite Dr. Maynard E. Pullman, Department of Biochemistry, Public Health Research Institute of the City of New York, to serve as visiting professor in the Department of Physiological Chemistry, Faculty of Medicine; \$8,000;

Laboratory of Human Genetics, Faculty of Philosophy, Sciences, and Letters; salary supplements, equipment, and operating expenses; Cr. 3,750,000 and \$1,350 (about \$5,850) for an 18-month period;

To enable Dr. Antonio Brito da Cunha to visit genetics laboratories in Europe and the United States, and to enable Dr. Luiz Edmundo de Magalhães to visit the genetics laboratory of Dr. Ove Frydenberg in Copenhagen, Denmark; \$3,600;

Department of Physiology, Faculty of Medicine; equipment and supplies; \$1,225;

CHILE

CATHOLIC UNIVERSITY OF CHILE, Santiago:

Laboratory and field equipment, a greenhouse, and library materials for the Faculty of Agronomy; \$96,000 through May, 1966;

Equipment and supplies for research in the Laboratory of Physiology, Faculty of Medicine; \$10,000;

Expenses of a visiting professor in sociology; \$6,113;

Dean Carlos Correa Valdes, Faculty of Agronomy; to visit centers of agricultural education and research in Costa Rica, the United States, Mexico, and Peru; \$3,975;

Dr. Patricio Sánchez y Reyes, associate professor, Department of Biology, Medical School; to visit centers of marine biology in the United States and other countries to observe current research; \$2,800;

Alberto Valdes Eguiguren, subdirector, Faculty of Agronomy; to visit centers of agricultural education and research in Costa Rica, the United States, and Mexico; \$2,675;

NATIONAL HEALTH SERVICE, Santiago:

Dr. Gladys Sudzuki Hills, medical director, San Gregorio Health Center; to observe public health and midwifery training programs in Puerto Rico; \$2,050;

Dr. Arturo Baeza Goñi, chief, Infant Program, South Area of Santiago; to visit Puerto Rico and other countries to observe community health programs, particularly those related to child health; \$1,450;

UNIVERSITY OF CHILE, Santiago:

For use by the Research Committee of the Faculty of Medicine in support of selected research projects; \$80,000 available on a matching basis for a two-year period;

Equipment and supplies for research in biochemistry under the direction of Professor Osvaldo Cori, and expenses of Professor Cori's visits to biochemical research centers in the United States; \$15,000;

Library improvement in the Faculty of Agronomy; \$15,000;

Dr. Francesco di Castri, director, Institute of Hygiene and Animal Production; to study current methods of teaching and research in animal ecology at European universities and scientific institutions; \$3,475;

Dr. Danko Bracic, associate professor of general biology, Faculty of Medicine; to observe current research at genetics laboratories in the United States and Colombia; \$2,445;

COLOMBIA

AGRICULTURAL INSTITUTE OF COLOMBIA, Bogotá:

Dr. Fernando Penaranda, director general; to visit centers of agricultural education and research in the United States and Mexico; \$1,450;

Dr. Rafael Samper, member of the board of directors; to visit centers of agricultural education and research in the United States and Mexico; \$1,450;

Dr. VINCENZO BARCO VARGAS, Minister of Agriculture, Bogotá: to visit centers of agricultural education and research in the United States and Mexico; \$2,540;

COLOMBIAN ASSOCIATION OF FACULTIES OF MEDICINE, Bogotá: to assist the organization and implementation of its program; \$10,000;

Miss MARIA TERESA MURILLO, chief, Section of Nursing, Ministry of Public Health, Bogotá: to visit schools of nursing in South America to observe postbasic nursing courses; \$1,600;

DR. ENRIQUE PENALOSA, head, Colombian Institute of Agrarian Reform, Bogotá: to visit centers of agricultural education and research in Mexico; \$1,450;

UNIVERSITY OF THE ANDES, Bogotá:

Study of land economics in the Río Suárez watershed, to be conducted in the Center for Studies of Economic Development; 86,000 Colombian pesos (about \$9,500) for a 15-month period;

To enable graduates of its biology program to accept assistantships and research fellowships in the United States; \$5,000;

UNIVERSITY OF ANTIOQUIA, Medellín:

Establishment of a departmental office and provision of basic teaching equipment for the Department of Surgery, Faculty of Medicine; \$5,000;

To enable Professor Aurelio Cespedes, Department of Biology, to complete his studies at Ohio State University, Columbus; \$4,000 for an 18-month period;

Dr. Francisco Arango, coordinator, General Surgery, Faculty of Medicine; to observe the organization, teaching, and research in departments of surgery at medical schools in the United States; \$2,330;

Dr. Hernan Velez A., head, Section of Nutrition, Department of Internal Medicine, Faculty of Medicine; to present a paper at the Seventh International Congresses on Tropical Medicine and Malaria in Rio de Janeiro, Brazil; \$725;

UNIVERSITY OF CALDAS, Manizales:

Teaching and research equipment, to be used under the direction of Dr. Ferry Aranzazu, chairman of the Department of Medicine, in the hematology laboratory of the Faculty of Medicine; \$10,000;

To enable the Faculty of Medicine to send staff members to the University of Valle, Cali, for further training; \$10,000;

Dr. Hildebrando Velez R., dean, School of Veterinary Medicine; to attend the 17th World Veterinary Congress in Hanover, Germany; \$1,300;

UNIVERSITY OF VALLE, Cali:

Salaries of professional and technical personnel of the university and its hospital; \$262,000;

Toward the costs of visiting appointments; 104,967.34 Colombian pesos and \$115,616 (about \$127,156); for the following persons:

John Stirling Applegarth; instructor in biology;

Dr. S. Cole Blasier, secretary of Colgate University, Hamilton, New York; visiting professor of political science;

Dr. Sergio A. de Castro, professor of economics, Catholic University of Chile, Santiago; visiting professor;

Dr. Jacques Dumont, Food Research Institute, Stanford University, California; visiting professor;

Dr. Philippe Leurquin, Food Research Institute, Stanford University, California; visiting professor;

Dr. Timothy Loeb; visiting assistant professor of biology;

Franklin E. Maiguashca, Food Research Institute, Stanford University, California; visiting professor;

Dr. Robert S. Smith, professor of economics, Duke University, Durham, North Carolina; visiting professor;

John G. Veenstra, head, Library Order Unit, Purdue University, Lafayette, Indiana; visiting professor in the basic college program and acting librarian;

Toward the costs of completing a building for humanities and linguistics; \$50,000;

Library books and equipment for the basic college program; \$40,000 through 1964;

To engage the services of an accounting organization to audit, review, and plan services for the university; \$35,000;

Toward construction of new facilities for the School of Nursing; \$30,000 through 1964;

Expenses of field operations by Rockefeller Foundation staff and special appointees at the university; \$19,400 through 1964;

Equipment, books, and films for the proposed physics-mathematics course in the basic college program; \$17,500;

Teaching materials for the Faculty of Agriculture; \$5,000 through 1964;

Books and teaching materials for the Faculty of Economics; \$5,000 through 1965;

Dr. Julio H. Calonje, associate professor of orthopedics and traumatology, Faculty of Medicine; to observe undergraduate and graduate teaching of orthopedics and traumatology at medical schools in the United States; \$2,500;

To enable Professor Laurence J. deRycke, Department of Economics, Occidental College, Los Angeles, California, to visit the university in connection with development of the Faculty of Economics; \$2,250;

To enable Elbert S. Moore, instructor in English, Linguistic Center, to take special courses in linguistics at Georgetown University, Washington, D. C.; \$2,170;

Dr. Alejandro Jiménez Arango, associate dean, Faculty of Medicine; to visit medical centers in the United States to observe programs in community medicine and to participate in a seminar on medical pedagogy and administration at the State University of New York, Buffalo; \$1,860;

Dr. Carlos A. León, chairman, Department of Psychiatry, Faculty of Medicine; to attend a seminar on medical pedagogy and administration at the State University of New York, Buffalo; \$1,825;

Jaime Cruz Rincon, former dean, and Harold Borrero, dean, Faculty of Architecture; to visit schools of architecture in the United States; \$1,800;

To enable Juan Aníbal Gomez and Julio Quintero, students in the Faculty of Economics, to visit Occidental College, Los Angeles, California, to observe the work of its Department of Economics; \$1,300;

Dean Alberto Ghitis, Faculty of Electromechanical Engineering; to visit schools of industrial management and business administration in the United States; \$1,000;

Dr. Dudley H. Towne, associate professor of physics, Amherst College, Massachusetts; to visit the university in connection with the development of its basic college program; \$775;

Dr. Jacobo Ghitis, associate professor, Department of Internal Medicine, Faculty of Medicine; to present a paper at the Seventh International Congresses on Tropical Medicine and Malaria in Rio de Janeiro, Brazil; \$725;

Luis Fernando Gaviria, resident in psychiatry, Faculty of Medicine; to participate in a special course on group behavior at the University of Puerto Rico, San Juan; \$715;

Miss Beatriz Rueda Suárez, director of nursing, University Hospital; to participate in a special course on group behavior at the University of Puerto Rico, San Juan; \$715;

School of Nursing; support of a Congress of Colombian Nurses, in Cali; \$700;
Sister Sofia Restrepo, director of nursing service, San Isidro Psychiatric Hospital; to participate in a special course in psychiatric nursing at the University of Puerto Rico, San Juan; \$680;

Dr. Alex Cobo, chairman, Department of Surgery, Faculty of Medicine; to visit the University of Florida College of Medicine to observe the organization and administration of operating rooms; \$655;

Dr. T. Edwin Rogers, professor and chairman, Department of Biology, Cornell College, Mount Vernon, Iowa; to observe the development of the university's basic college program; \$650;

MIGUEL VARONA, Technical Division, National Agricultural Commodity Institute, Bogotá: to attend the World Food Congress in Washington, D.C.; \$1,000;

DR. ERNESTO WILLS OLAYA, dean, Faculty of Veterinary Medicine and Animal Husbandry, National University of Colombia, Bogotá: to attend the 17th World Veterinary Congress in Hanover, Germany, and the World Food Congress in Washington, D.C.; \$2,275;

XAVIER UNIVERSITY, Bogotá:

Development of the basic science departments of the Medical School; \$15,000;
Equipment for the Department of Biochemistry, Medical School; \$15,000;

COSTA RICA

INTER-AMERICAN INSTITUTE OF AGRICULTURAL SCIENCES, San José:

Mario Gutiérrez Jiménez, technical editor; to attend the American Society of Agronomy meetings in Denver, Colorado, and to observe techniques of organizing a scientific meeting; \$810;

Armando Samper, director general; to attend the American Society of Agronomy meetings in Denver, Colorado; \$740;

Carlos Luis Arias Segura, publications editor, Scientific Communications Service; to accept an assistantship in the Department of Communications, Michigan State University, East Lansing; \$560;

Luiz Fonseca, training coordinator, Scientific Communications Service; to accept an assistantship at the Land Tenure Center, University of Wisconsin, Madison; \$535;

LATIN AMERICAN ASSOCIATION OF PLANT SCIENCE, San José: support of the sixth symposium of the association in Lima, Peru; \$25,000 for a two-year period;

DOMINICAN REPUBLIC

DR. HECTOR LURZ RODRIGUEZ, dean, Faculty of Veterinary Medicine, University of Santo Domingo, Ciudad Universitaria: to visit centers of veterinary medicine in Guatemala; \$780;

ECUADOR

FABIAN PORTILLA ROCHA, director general, National Institute of Agricultural Research, Quito: to attend the World Food Congress in Washington, D.C., and to visit centers of agricultural education and research in Honduras, Mexico, and the United States; \$1,410;

EL SALVADOR

UNIVERSITY OF EL SALVADOR, San Salvador:

For use by the School of Medicine toward the salary of Visiting Professor Noel David Burleson, Department of Preventive Medicine, and the purchase of equipment for the Department of Pathology; \$25,400 for an 18-month period;

Dr. Fabio Castillo, rector; to visit international organizations in Mexico and the United States; \$930;

GUATEMALA

DR. EUGENIO SCHIEBER H., head, plant pathology department, National Institute of Agriculture and Animal Husbandry, Guatemala City: to consult with Dr. E. J. Wellhausen and Dr. J. S. Niederhauser in Mexico City, Mexico, and to attend the annual meeting of the American Phytopathological Society, in Amherst, Massachusetts, as Councillor of the Caribbean Division; \$630;

HONDURAS

NATIONAL UNIVERSITY OF HONDURAS, Tegucigalpa: materials for the medical library; \$10,000;

MEXICO

COLEGIO DE MEXICO, Mexico City: completion of a history of the Americas, under

the direction of the Commission on History of the Pan American Institute of Geography and History; \$4,000;

ESTABLISHMENT AND OPERATION of an International Center for Corn and Wheat Improvement at Chapingo, by the Ministry of Agriculture in cooperation with The Rockefeller Foundation; \$1,000,000 for a four-year period;

NATIONAL INSTITUTE OF AGRICULTURAL RESEARCH, Mexico City:

Dr. Ignacio Narváez Morales, head, Small Grain Crops Improvement Department; to visit cereal improvement programs at the University of Nebraska, Lincoln, and the United States Department of Agriculture, Beltsville, Maryland, and to attend conferences of barley and spring wheat research workers; \$900;

Horacio Hernández H., cereal chemist; to visit cereal improvement programs and laboratories at the University of Minnesota, St. Paul, and North Dakota State University, Fargo, and to attend conferences of barley and spring wheat research workers; \$770;

Dr. Jacobo Ortego Castro, head, Wheat Improvement Section; to visit cereal improvement programs at state and federal experiment stations in the United States, and to attend a conference of spring wheat research workers; \$660;

Rodolfo Moreno Gálvez, assistant head, Small Grain Crops Improvement Department; to visit cereal improvement programs and laboratories at the University of Minnesota, St. Paul, and North Dakota State University, Fargo, and to attend conferences of barley and spring wheat research workers; \$630;

Dr. Antonio E. Rodríguez V., head, Department of Plant Pathology; to study new techniques being developed at departments of plant pathology of the University of California at Berkeley, Davis, and Riverside, and to attend an international symposium on soil fungi in Berkeley; \$625;

NATIONAL INSTITUTE OF ANTHROPOLOGY AND HISTORY, Mexico City: equipment and technical books for the conservation laboratory of the Department of Pre-historics; \$10,000;

NATIONAL INSTITUTE OF NUTRITION, Mexico City:

Dr. Guillermo Soberón, head, Department of Biochemistry, Hospital for Nutritional Diseases; to observe graduate training programs and current research in biochemistry at medical institutions in Europe; \$2,350;

Dr. Rubén Lisker, research associate, Department of Hematology, Hospital for Nutritional Diseases; to observe current research in hematology at medical centers in the United States, and to participate in an intensive course on human genetics at Bar Harbor, Maine; \$1,500;

NATIONAL POLYTECHNIC INSTITUTE, Center of Investigation and Advanced Studies, Mexico City: advanced training in biochemistry for Dr. Federico Welsch, professor of biochemistry, University of Chihuahua; \$4,000;

NATIONAL SCHOOL OF AGRICULTURE, Chapingo: development of the Graduate School; \$120,000;

NATIONAL UNIVERSITY OF MEXICO, Mexico City:

To assist the Law School with expenses of visiting lecturers and the purchase of research materials in international law, international relations, and political science; \$15,000 for a two-year period;

Purchase of basic source materials in comparative literature; \$5,000;

Dr. Ruy Pérez Tamayo, professor and chairman, Department of Pathology, Medical School; to enable him to serve as visiting professor of pathology at the Harvard Medical School, Boston, Massachusetts; \$4,050;

To enable Juan José Currola I., General Department of Cultural Diffusion, to continue studies of structural problems in theatre architecture at Yale University, New Haven, Connecticut, under the guidance of Felix Candela; \$3,000;

José M. Berruelcos, laboratory assistant, School of Veterinary Medicine and Zootechnics; to visit Purdue University, Lafayette, Indiana, and other agricultural research centers in the United States to observe techniques of teaching genetics; \$930;

To enable Rubén Bonifaz Nuño, director of the university press, and Dr. Carlos Bosch García, director of the university bookstores, to attend the 1963 meeting of the Association of American University Presses in Cambridge, Massachusetts; \$900;

DR. JESUS TAVIZON ARAIZA, director, Faculty of Veterinary Medicine and Animal Husbandry, University of the State of Veracruz: to attend the 17th World Veterinary Congress in Hanover, Germany, and to visit centers of veterinary medicine in the United States; \$2,040;

UNIVERSITY OF GUANAJUATO, León: equipment for the Department of Microbiology, under the direction of Dr. Ramón Velarde, professor and head of the department; \$10,000;

PROFESSOR RAMON XIRAU, subdirector, Mexican Center of Writers, Mexico City: to visit writers and publishing centers in Europe and the United States; \$3,850;

PERU

AGRARIAN UNIVERSITY, La Molina, Lima:

Establishment of a language laboratory; \$5,000;

Dr. Orlando Olcese, rector; to attend the World Food Congress in Washington, D.C., and the annual meetings of the American Society of Agronomy in Denver, Colorado; \$2,315;

DR. ALEXANDER GROBMAN, director, Research Division, Agricultural Research and Extension Service, Lima: to attend the 11th International Congress of Genetics at The Hague, Netherlands; \$240;

DR. JOSE SANTOS MADALENGORTIA, head, Virus Division, National Institute of Health, Lima: to visit the Belém Virus Laboratory, Brazil, to observe techniques in arbovirus research; \$1,940;

NATIONAL UNIVERSITY OF ENGINEERING, Lima: library acquisitions on urban and regional planning for the Planning Institute of Lima; \$4,500;

PERUVIAN UNIVERSITY OF MEDICAL AND BIOLOGICAL SCIENCES, Lima:

Development of the Faculty of Medicine; \$100,000;

Expenses of six visiting professors from South America, and to enable Dr. Vicente Zapata, professor of pharmacology, to observe medical education in the United States as well as teaching and research in pharmacology; \$4,240;

Dr. Carlos Monge C., professor of medicine; to visit the University of São Paulo, Brazil, to undertake research in amphibian renal physiology with Dr. Luis Carlos Junqueira, Department of Histology and Embryology; \$1,650;

UNIVERSITY OF SAN MARCOS, Lima:

Support of an international program of postgraduate training in the Faculty of Veterinary Medicine; \$138,000 for a three-year period;

Dr. Arturo Tello Garust, head, Poultry Pathology Laboratory; to attend a symposium on Newcastle disease virus in Madison, Wisconsin, and to visit poultry disease research centers in the United States; \$2,725;

Dr. Manuel Moro, dean, Faculty of Veterinary Medicine; to visit faculties of veterinary medicine in the United States and Colombia; \$2,705;

Dr. Teodoro Ramos Saco, Faculty of Veterinary Medicine; to attend the 17th World Veterinary Congress in Hanover, Germany, and to visit centers of veterinary medicine in Scotland and faculties of veterinary medicine and research institutions in Brazil; \$1,865;

Dr. Augusto Vallenas, Faculty of Veterinary Medicine; to work in the Laboratory of Physiology, University of Pennsylvania, Philadelphia, in techniques and equipment use for cardiovascular studies; \$1,350;

URUGUAY

MANUEL ORESTES DIAZ RIVARA, fellow, Department of Cytogenetics, Research Institute of Biological Sciences, Ministry of Public Instruction and Social Welfare, Montevideo: to observe current research on chromosome physiology in the Department of Biology, University of São Paulo, Brazil; \$2,050;

WEST INDIES

Jamaica

UNIVERSITY OF THE WEST INDIES, Mona:

Establishment of the deanship of the Faculty of Medicine as a full-time position; \$5,700;

Bertie Bernard Griffiths, assistant microbiologist, Department of Microbiology, Faculty of Medicine; to observe techniques in the survey of arthropod-borne viruses at virus laboratories in Trinidad and Brazil; \$2,440;

Trinidad

DR. LESLIE PERCIVAL SPENCE, director, Trinidad Regional Virus Laboratory, University of the West Indies, Port-of-Spain: to attend the Seventh International Congresses on Tropical Medicine and Malaria in Rio de Janeiro, Brazil; \$855.

COOPERATIVE AGRICULTURAL PROGRAMS

FOR PROGRAMS in Chile, Colombia, and Mexico; \$590,000.

VIRUS RESEARCH PROGRAMS

FOR VIRUS RESEARCH in Brazil and Colombia; \$57,970.

GRANTS MADE IN AFRICA

CONGO

LOVANIUM UNIVERSITY, Leopoldville: support of special projects in the Medical School and School of Agriculture; \$133,570 for a two-year period;

ETHIOPIA

HAILE SELASSIE I UNIVERSITY, Addis Ababa:

Equipment and supplies for a new office and laboratory building at the Central Agricultural Experiment Station, Debre Zeit; \$50,000 for a two-year period;

To increase the teaching facilities of the library building of the College of Agriculture, Alemaya; \$10,000;

To assist in development of a basic reference library in the public health and clinical fields for the Public Health College and Training Center at Gondar; \$5,000;

GHANA

S. T. QUANSAH, director, West African Cocoa Research Institute, Tafo: to attend the World Food Congress in Washington, D.C.; \$1,450;

UNIVERSITY OF GHANA, Legon, Accra:

Study of economic growth in the Lower Volta, under the direction of Dr. Rowena Lawson, lecturer in economics; \$15,000 for a two-year period;

Work in African music, under the direction of Professor J. H. Nketia, and expenses of the research program of the Institute of African Studies; \$8,140;

Professor William B. Harvey, dean, Faculty of Law; to visit centers of legal education and research in Africa; \$2,200;

IVORY COAST

PURCHASE OF A COLLECTION of basic French-language works in international relations for the Ministry of Foreign Affairs, Abidjan; \$4,500 for a two-year period;

KENYA

EAST AFRICAN COMMON SERVICES ORGANIZATION, Nairobi:

East African Agriculture and Forestry Research Organization; support of its sorghum research program at Soroti, Uganda; \$100,000 for a four-year period;

Periodicals, books and other printed matter, and microfilm equipment and supplies for the Muguga Library, Kikuyu; \$15,000;

Study of wild and domestic ruminants in East Africa, by Norman Smith; \$10,000;

EGERTON COLLEGE, Njoro: support of its expanded program; \$75,000 for a three-year period;

DR. NEVILLE REX EDWARDS FENDALL, director of medical services, Ministry of Health and Housing, Nairobi: to visit Montreal, Canada, and New York for discussions concerning medical education programs in Kenya; \$930;

PLANT BREEDING STATION, Ministry of Agriculture, Animal Husbandry, and Water Resources, Njoro: support of a program of maize improvement research and training; \$86,000 for a three-year period;

PURCHASE OF A COLLECTION of basic works in international relations for the External Affairs Branch, Office of the Prime Minister, Nairobi; \$4,500;

ROYAL COLLEGE, UNIVERSITY OF EAST AFRICA, Nairobi:

Support of research and teaching in economics; \$74,240 through 1966;

Basic texts and journals for the library of the Faculty of Veterinary Science, Kabete; \$10,000 through June, 1966;

Provision of stipends for African supernumerary staff; \$10,000;

Library acquisitions in African literature; \$3,000 for a two-year period;

Dr. John B. Polding, dean, Faculty of Veterinary Science, Kabete; to confer with veterinary scientists in Germany; \$1,635;

Dr. Reinhold R. Hofmann, reader in anatomy and head, Department of Veterinary Anatomy; to attend the 50th annual meeting of the Anatomical Society in Vienna, Austria; \$1,460;

Toward the expenses of advanced training of a potential faculty member in economics; \$365 through September, 1964;

LIBERIA

UNIVERSITY OF LIBERIA, Monrovia: to recruit a horticulturist to serve on the faculty of the College of Agriculture to institute teaching and research in the field of vegetable crops; \$15,000;

NIGERIA

FEDERAL EXPERIMENT STATION, MOOR PLANTATION, Ibadan: study of plant nematode distribution in Nigeria, under the direction of Dr. Fields Caveness; \$8,700;

MOHAMMET LAWAN, permanent secretary, Ministry of Agriculture, Northern Region, Kaduna: to attend the World Food Congress in Washington, D.C.; \$2,230;

E. A. MACIVER SLOWE, registrar, University of Lagos Medical School: to observe current administrative practices at medical schools in the United States and Canada; \$3,840;

UNIVERSITY OF IBADAN, Nigeria:

Establishment of a Department of Psychiatry, Neurosurgery, and Neurology, and development of a rural training and teaching center at Igbo-ora; Nigerian £99,463 (about \$283,470) through July, 1964;

Development of a virology unit in the Faculty of Medicine; \$170,000 for a three-year period;

Construction of staff housing; Nigerian £26,761 and \$69,280 (about \$145,548);

Expenses in connection with the teaching and research programs of the Faculties of Agriculture and Veterinary Science; \$100,000 through June, 1968;

Expenses of field operations by Rockefeller Foundation staff and special appointees at the university; \$59,075 through 1965;

Toward the costs of visiting appointments; \$39,600; for the following persons:

Dr. Morton S. Baratz, associate professor of economics, Bryn Mawr College, Pennsylvania; visiting professor;

Dr. Ralph C. Richards, associate professor of surgery, University of Utah, Salt Lake City; professor and head of the Department of Surgery;

Support of the work of the Department of Arabic and Islamic Studies; \$20,000 through 1964;

Establishment of a cooperative program with the University of Dakar, Senegal, for the training of teachers of French and English; \$13,000 through September, 1964;

Dr. Ojetunji Aboyade, lecturer in economics; to serve as visiting lecturer and research fellow at the University of Michigan, Ann Arbor, and to visit other centers of economic research in the United States, England, and France; \$5,700 through October, 1964;

H. T. E. Smith, senior lecturer in agricultural extension education, Faculty of Agriculture; to confer with specialists in agricultural extension education in the United States; \$4,920;

To enable Dr. Kenneth O. Dike, vice-chancellor, to visit New York to confer with Rockefeller Foundation officers; \$3,770;

N. K. Adamolekun, registrar; to study administrative practices and organization of universities in the United States; \$3,000;

O. O. Akpata, students' officer; to study administrative practices of universities in the United States in regard to student affairs; \$3,000;

Dr. Scott G. Cowper, associate professor of parasitology, Department of Bacteriology; to observe current work in parasitology at medical centers in the United States; \$2,125;

Dr. Theophilus Oladipo Ogunlesi, associate professor, Department of Medicine; to observe programs of research and teaching in endemic diseases and rural medicine at medical centers in Finland and Yugoslavia; \$1,520;

UNIVERSITY OF IFE, Ibadan: books and periodicals for the Faculty of Agriculture; \$3,000;

SENEGAL

UNIVERSITY OF DAKAR:

Establishment of a cooperative program with the University of Ibadan, Nigeria, for the training of teachers of French and English; \$17,000 through September, 1964;

Equipment and other research expenses of historical field investigations, under the direction of Professor Jean Devisse, Faculty of Letters and Humanistic Sciences; \$10,000;

SOUTH AFRICA

SOUTH AFRICAN INSTITUTE FOR MEDICAL RESEARCH, Johannesburg: research equipment and supplies for the Arbor Virus Research Unit; \$4,000;

SOUTHERN RHODESIA

AGRICULTURAL RESEARCH COUNCIL OF RHODESIA AND NYASALAND, Salisbury: recruitment of a soil microbiologist to concentrate on critical legume nitrogen aspects of the work at the Soil Productivity Laboratory, Marandellas; \$13,700;

RHODESIAN ACADEMY OF MUSIC, Bulawayo: continued support of a program in African music; £1,500 (about \$4,275) for a 22-month period;

UNIVERSITY COLLEGE OF RHODESIA AND NYASALAND, Salisbury:

Purchase for the college library of the Doke collection of Bantu books; £2,500 (about \$7,125);

Preparation of basic teaching and research materials in government and administration, under the direction of Professor F. M. G. Willson, Department of Government; \$6,000 through May, 1964;

Research on African history, by Richard Brown, lecturer, Department of History; £715 (about \$2,145);

To enable Dr. David J. Murray, lecturer in government, to visit West Africa to undertake research and collect teaching materials on government and politics; £453 (about \$1,290);

Comparative study of the contributions made by manufacturing industry to the economic development of Southern Rhodesia and of Uganda, by D. S. Pearson, lecturer, Department of Economics; £400 (about \$1,200);

SUDAN

UNIVERSITY OF KHARTOUM:

Dr. Ali Khogali, Faculty of Medicine; to visit physiology departments of medical centers in the United States; \$3,075;

Dr. Mansouri Ali Haseeb, Faculty of Medicine; to visit medical schools in the United States; \$2,450;

TANGANYIKA

DR. PETER JORDAN, director, East African Institute for Medical Research, Mwanza: to visit medical centers in the United States, while en route from Rio de Janeiro to London, to observe current bilharziasis research; \$680;

MEDICAL TRAINING CENTER, Ministry of Health, Dar es Salaam: development of a training program for rural physicians; \$3,000 through 1967;

RESEARCH DIVISION, Ministry of Agriculture, Dar es Salaam: assistants, equipment, and binding for the library; \$10,000 for a two-year period;

UNIVERSITY COLLEGE, UNIVERSITY OF EAST AFRICA, Dar es Salaam:

William L. Twining, senior lecturer in law; to visit the University of Chicago, Illinois, and other centers in the United States in connection with teaching and research in the field of legal development in Africa; \$4,440;

Training of two photographers for the library; \$3,867 through September, 1965;

Appointment of two assistant cataloguers; \$2,350 for a 30-month period;

Harold Holdsworth, librarian; to observe cooperative arrangements between units of university library systems, library training and education, services and equipment, and Africana collections at libraries in the United States; \$2,260;

UGANDA

COMMONWEALTH INSTITUTE OF BIOLOGICAL CONTROL, Kampala: to assist in the establishment of a biological control station at the Kawanda Research Station; \$10,000 for a three-year period;

MAKERERE UNIVERSITY COLLEGE, UNIVERSITY OF EAST AFRICA, Kampala:

East African Institute of Social Research; research on economic development problems of East Africa; \$185,220 through 1967;

Support of teaching and research in the Faculty of Agriculture; \$40,000 through 1965;

Expenses of a teaching post in international relations; \$25,000 through 1967;

Expenses of a research program in the politics of resource allocation; \$23,550 through 1966;

To continue the appointment of Robert A. England as cataloguer; \$14,800;

Expenses of the supernumerary appointments of Ali Darwish to the Margaret Trowell School of Fine Art, and Mathias Mosha to the Department of Sociology; \$10,000;

Research on bilharziasis in the Department of Pathology, under the direction of P. J. Fripp; \$10,000;

Expenses of a conference to develop plans for the library training of African students; \$6,500;

Dr. Pararajasingham Mahadevan, reader in animal husbandry; to visit centers of animal husbandry research and teaching in the United States and Jamaica; \$4,200;

Professor Aidan W. Southall, dean, Faculty of Social Sciences; to visit West Africa and the United States in connection with the development of the faculty's program in African studies; \$2,195;

Eric John Belton, librarian; to observe cooperative arrangements between units of university library systems, library training and education, services and equipment, and Africana collections at libraries in the United States; \$1,960;

Dr. David Allbrook, head, Department of Anatomy; to recruit staff for his department in England and the United States; \$1,860;

Appointment of an assistant cataloguer; \$650;

UGANDA MUSEUM, Kampala: in-service training for Charles Sekintu, curator trainee; 21,140 East African shillings (about \$3,170) for an 18-month period;

UNIVERSITY OF EAST AFRICA, Entebbe: support of the Council for Agricultural Education, the Council for Medical Education, the Council for Veterinary Education, and the Social Science Research Council; \$6,000.

GRANTS MADE IN THE MIDDLE EAST

ISRAEL

DR. DAN ATSMON, research associate, Plant Genetics Section, Weizmann Institute of Science, Rehovoth: to visit plant science research centers in the United States and United Kingdom, and on the Continent; \$5,800;

LEBANON

AMERICAN UNIVERSITY OF BEIRUT:

Support of a documentary and chronological research project in the international relations of the Arab countries, under the direction of Professor Walid Khalidi, Department of Political Studies; \$12,400;

To enable Dr. Joseph Asmar to complete studies for a Ph.D. degree in comparative pathology at the University of California, Davis; \$7,500;

Histochemical research, under the direction of Dr. Amal K. Kurban, assistant professor, Department of Medicine; \$3,500;

TURKEY

MISS YILDIZ KENTER AND MUSFIK KENTER, director-actors, Kent Players Theater, Istanbul: to visit theatrical centers in Europe, the United States, and Canada; \$7,255;

UNIVERSITY OF ANKARA:

Books, periodicals, and equipment for the Center for Soviet Studies, Institute of International Relations, under the direction of Dr. Ahmet Sükrü Esmer; \$10,000 for a two-year period;

To enable Dr. Gündüz Okcün, Faculty of Political Science, to continue comparative research on conflict of laws, at King's College, University of London, England; \$4,200.

GRANTS MADE IN INDIA

DR. ABRAHAM ABRAHAM, professor of genetics and dean, Faculty of Science, Kerala University, Trivandrum: to visit selected centers of genetics research in Europe and the United States, and to attend the 11th International Congress of Genetics at The Hague, Netherlands; \$4,425;

ALL INDIA INSTITUTE OF MEDICAL SCIENCES, New Delhi:

Equipment and supplies for the basic science departments and clinical research laboratories; \$200,000 through March, 1966;

Dr. Achyutananda Sinha, associate professor of otolaryngology; to visit medical centers in Europe, North America, and Japan to observe recent developments in otology and medical education in general; \$4,675;

DR. AVINASH CHANDRA DAS, reader in anatomy, King George's Medical College, University of Lucknow, Uttar Pradesh: to observe current teaching and research in anatomy at medical centers in Europe, the United States, Thailand, Canada, and Japan; \$3,825;

DR. S. N. DAS GUPTA, vice-chancellor, Kalyani University, Calcutta, West Bengal: to visit land-grant colleges and research institutions in the United States, France, and Japan, and to attend the World Food Congress in Washington, D.C.; \$3,960;

DR. RAJAMMAL P. DEVADAS, principal, Sri Avinashilingam Home Science College, Coimbatore, Madras: to visit home economics research institutions in Japan, the United States, and Europe, and to attend the Tenth International Congress of Home Economics, Paris, France, and the World Food Congress, Washington, D.C.; \$4,925;

INDIAN AGRICULTURAL RESEARCH INSTITUTE, New Delhi:

Dr. Atmaram Bhairav Joshi, dean, Post Graduate School; to visit universities and agricultural research institutions concerned with plant genetics and breeding in the United States, Mexico, Japan, and the Philippines, and to attend the World Food Congress in Washington, D. C.; \$4,100;

Dr. H. K. Jain, Botany Division; to participate in the 11th International Congress of Genetics at The Hague, Netherlands, and to visit the laboratory of Professor C. D. Darlington at the University of Oxford, England; \$1,500;

KAZUYOSHI KAWATA, sanitary engineer, Christian Medical College, Ludhiana, Punjab: to observe teaching and research projects in rural health at public health centers in the Middle East and North Africa while en route from India to the United States; \$1,900;

DR. ABRAR M. KHAN, Department of Botany, Aligarh Muslim University, Uttar Pradesh: to visit nematological laboratories in Europe and the United States; \$4,500;

DR. PANCHANAN MAHESHWARI, Department of Botany, University of Delhi: to observe work in tissue culture and economic botany at research centers in the United States, and to attend the Tenth International Botanical Conference in Edinburgh, Scotland; \$3,930;

MEDICAL COLLEGE, Pondicherry, Madras: equipment and supplies for research in virology, under the direction of Dr. Hardas Singh and Dr. M. Balasubrahmanyam; \$10,000;

MEDICAL COLLEGE, Trivandrum, Kerala: scholarships in the School of Nursing and expenses in connection with the B.Sc. program; \$15,000 for a three-year period;

PUNJAB AGRICULTURAL UNIVERSITY, Ludhiana:

Development of agricultural experiment station facilities on lands of the university, and the purchase of books, periodicals, and laboratory equipment; \$320,000 for a five-year period;

Prem Nath Thapar, vice-chancellor; additional expenses in connection with his visit to colleges in the United States, Europe, and the Far East to observe administrative organization, teaching, and research; \$3,975;

DR. PUSHKARNATH, director, Central Potato Research Institute, Simla, Himachal Pradesh: to visit centers of potato research and development projects in Europe, the United States, Latin America, and Japan to observe potato breeding, processing, and utilization; \$4,825;

DR. PADMANABHA RAGHAVAN, professor and director of medicine, Seth Gordhandas Sunderdas Medical College, Bombay, Maharashtra: to observe developments in internal medicine and medical education in the United States; \$4,100;

HARISH CHANDRA SAXENA, Farrukhabad, Uttar Pradesh: to visit institutes of research in avian biology and nutrition in the United States and Europe; \$4,160.

COOPERATIVE AGRICULTURAL PROGRAM

INDIAN AGRICULTURAL PROGRAM; \$290,000.

VIRUS RESEARCH PROGRAM

FOR VIRUS RESEARCH IN INDIA; \$62,460.

GRANTS MADE IN THE FAR EAST

AUSTRALIA

COMMONWEALTH SCIENTIFIC AND INDUSTRIAL RESEARCH ORGANIZATION:

Equipment for use by the Division of Soils, Adelaide, in research on the interactions of plant roots and microorganisms, by Dr. A. D. Rovira; \$15,000;

To enable Dr. D. J. Cosgrove, senior research officer, Division of Plant Industry, Canberra, to visit and study with Professor C. E. Ballou, Department of Biochemistry, University of California, Berkeley, and to visit other laboratories and institutions in the United States; \$1,500;

FORESTS COMMISSION, Melbourne: equipment for the Forests Pathology Laboratory, Division of Forestry, Education, and Research; \$4,000;

UNIVERSITY OF ADELAIDE:

Dr. K. W. Finlay, Waite Agricultural Research Institute; to visit agricultural institutions in the United States, Mexico, and Colombia, and to attend the annual meetings of the American Society of Agronomy in Denver, Colorado; \$3,500;

Research on the adaptation of the British parliamentary system in selected Commonwealth countries, by Dr. Gordon S. Reid, senior lecturer in government and public administration; \$1,775;

DR. I. A. WATSON, professor of agricultural botany, Department of Agriculture, University of Sydney: to visit centers of wheat rust research in Portugal, Kenya, and India; \$5,500;

CEYLON

V. E. A. WIKRAMANAYAKE, lecturer in agricultural engineering, University of Ceylon, Peradeniya: to visit selected agricultural institutions in Taiwan and Japan to study mechanization of rice production; \$5,750;

FIJI ISLANDS

DR. THOMAS GUY HAWLEY, lecturer in social and preventive medicine, Fiji School of Medicine, Suva: to observe the teaching of preventive medicine at medical centers in Puerto Rico, Jamaica, and Colombia while en route from the United Kingdom to Fiji; \$1,500;

INDONESIA

CEREAL RESEARCH INSTITUTE, Department of Agriculture and Agrarian Affairs, Bogor: equipment and materials for its corn research program; \$10,000 for a three-year period;

UNIVERSITY OF INDONESIA, Djakarta: to enable Dr. Djaeni Sediaoetama, Faculty of Medicine, to continue his studies at the Institute of Nutrition Sciences, Columbia University, New York; \$8,000 for a 17-month period;

JAPAN

KEIO UNIVERSITY, Tokyo:

Equipment for research in neurophysiology in the School of Medicine, under the direction of Dr. Hiroshi Nakahama, assistant professor of physiology; \$10,000;

Equipment for research in respiratory physiology in the School of Medicine, under the direction of Dr. Toshio Toyama, professor of preventive medicine and public health; \$10,000;

KYOTO UNIVERSITY: continued research on revolutionary thought in Russia's historical development from 1870 to the early 20th century, by Dr. Kichitaro Katsuda, Law School; \$1,750;

KYUSHU UNIVERSITY, Fukuoka:

Research in virology in the Faculty of Medicine; \$15,000;

Equipment for research in electrophysiology, under the direction of Dr. Michiko Ogata, instructor in physiology; \$4,200;

NAGOYA UNIVERSITY: equipment for research in the Faculty of Science on bioluminescence, under the direction of Dr. Osamu Shimomura; \$10,000;

NATIONAL INSTITUTE OF GENETICS, Misima: to enable Dr. Hitoshi Kihara, director, to visit genetics research centers in the United States; \$2,800;

OKAYAMA UNIVERSITY: equipment for research in cellular chemistry in the School of Medicine, under the direction of Dr. Takuzo Oda, assistant professor of pathology; \$11,000;

OSAKA CITY UNIVERSITY: equipment for neurophysiological research in the Medical School, under the direction of Dr. Hiroshi Asanuma, lecturer in physiology; \$8,000;

DR. Y. TAKAMATSU, chief of extension, Nippon Institute for Biological Science, Tokyo: to study diagnostic procedures for fowl and hog diseases at veterinary

institutions in the United States, and to attend a symposium on Newcastle disease virus, in Madison, Wisconsin; \$2,975;

DR. HIROSHI TAMUYA, Tokugawa Institute for Biological Research, Tokyo: to visit scientific institutions in the Far East and South Asia; \$2,600;

TOKYO UNIVERSITY OF AGRICULTURE AND TECHNOLOGY: study of the biologic specialization in *Piricularia oryzae* Cav., under the direction of Dr. Hashio Suzuki, Faculty of Agriculture; \$8,400 for a three-year period;

DR. NOBUO UI, Institute of Endocrinology, School of Medicine, Gunma University, Maebashi: to observe current research in hormones and protein chemistry at laboratories while in the United States; \$2,300;

UNIVERSITY OF TOKYO:

Improvement of the library of the Faculty of Agriculture; \$150,000 through 1964;

Improvement of the university library; \$79,000 through 1964;

Research on nucleic acid chemistry in the Institute for Infectious Diseases, under the direction of Dr. Toru Tsumita; \$8,200;

DR. MORIMATSU WATANABE, chief, Second Research Division, National Institute of Animal Health, Tokyo: to observe changes in livestock and poultry virus disease research at agricultural institutes and laboratories in the United States, Europe, and the United Arab Republic; \$4,100;

YOKOHAMA CITY UNIVERSITY: equipment and supplies for research in virology in the School of Medicine, under the direction of Dr. Kamesaburo Yoshino, professor of bacteriology; \$6,000;

MALAYSIA

UNIVERSITY OF SINGAPORE: research equipment for the Department of Pharmaceuticals, Faculty of Medicine; \$10,000;

NEW ZEALAND

DEPARTMENT OF SCIENTIFIC AND INDUSTRIAL RESEARCH, Wellington: to enable D. E. Yen, principal scientific officer, to visit Easter Island and the United States in connection with research on sweet potatoes in the Pacific Islands; \$1,600;

UNIVERSITY OF AUCKLAND: equipment for investigations of plant products of New Zealand, under the direction of Dr. L. H. Briggs, professor of chemistry; \$5,000;

UNIVERSITY OF OTAGO: research on the ecology of arthropod-borne viruses, by Dr. J. A. R. Miles and Dr. Donald D. Stamm; \$5,000;

PHILIPPINES

MISS REGINA B. TALON, home economics program supervisor, Bureau of Agricultural Extension, Department of Agriculture and Natural Resources, Quezon City: return travel from postgraduate studies at the University of Wisconsin, Madison; \$650;

UNIVERSITY OF THE PHILIPPINES:

Los Baños:

Construction of 10 to 12 faculty houses and expenses of miscellaneous installations at the College of Agriculture; \$220,000 through March, 1966;

Dr. Maria Salome del Rosario, research assistant professor, Department of Plant Pathology, College of Agriculture; to attend the Third Conference of the International Organization of Citrus Virologists, in Campinas and São Paulo, Brazil, and to study plant serology and recent techniques in plant virology at plant pathology laboratories in the United States and Japan; \$6,150;

Manila:

To enable a three-man study group to visit foreign medical centers in connection with planning for the university's new medical center; \$17,700;

Quezon City:

Construction of six faculty houses; \$150,000 through 1965;

Strengthening of graduate training and research in the Department of Economics and the Institute of Economic Development and Research; \$125,000 through June, 1968;

Faculty research in the Departments of English and Comparative Literature, History, Political Science, and Sociology; \$89,400 for a four-year period;

Strengthening of the administration of the university through staff travel, consultation, and study; \$25,000 for a three-year period;

Expenses related to faculty housing and development of Humanities and Social Sciences facilities; \$20,000 for a two-year period;

Advanced training for potential faculty members in the Departments of History, Political Science, and Sociology; \$18,775 for a four-year period;

To enable Dr. K. William Kapp, professor of economics, Brooklyn College, New York, to serve as visiting professor; \$17,720;

Expenses of field operations by Rockefeller Foundation staff members and special appointees at the university; \$16,600;

THAILAND

DEPARTMENT OF AGRICULTURE, Bangkok:

Phaderm Titatarn, first grade official and senior agronomist; to observe research and extension programs relating to soil fertility and fertilizer uses at institutes and laboratories in the United States, Europe, Mexico, Costa Rica, and Japan; \$5,000;

Prince M. C. Chakrabandhu, director; to observe research on sugar cane and other crops at agricultural institutions in Denmark, the United States, Mexico, and Japan, and to attend the World Food Congress in Washington, D. C.; \$2,965;

Ariyant Manjikul, senior entomologist; to visit the Lac Research Station at Nam Kum, Ranchi, India, to observe techniques of mass production of parasites on predators important in yield reduction of the lac insect in Thailand; \$900;

EXPENSES INVOLVED in the development of the Foundation's cooperative research and training program at the University of Medical Sciences, Bangkok, under the direction of Dr. James S. Dinning; \$45,000;

KASETSART UNIVERSITY, Bangkok:

Chote Suvatti, director of research and dean, College of Fisheries; to observe scientific research, administration, and teaching methods at agricultural institutions in India, Israel, Europe, the United States, Tahiti, New Zealand, Australia, the Philippines, and Vietnam; \$6,150;

Insee Chandrastitya, rector; to observe administration, management, student activities, libraries, and experiment stations at agricultural institutions in India, Israel, Europe, the United States, Tahiti, New Zealand, Australia, the Philippines, and Vietnam, and to attend the World Food Congress in Washington, D.C.; \$6,100;

Prani Changchenkit, acting head, Department of Agricultural Engineering; to study recent developments in agricultural implements at educational institutions in the Philippines, Taiwan, Japan, Europe, and Israel, and to attend the Agricultural Engineering Conference at Los Baños, Philippines; \$5,450;

Porn Resanontha, lecturer, Department of Extension Education, Faculty of Agriculture; to observe agricultural extension teaching methods and extension educational broadcasting at institutions in Malaysia, Japan, the Philippines, the United States, and Denmark; \$5,107;

Purchase of books for the Faculty of Veterinary Science; \$4,500;

DR. KEYES D. METCALF, specialist in library planning; to advise Kasetsart University, Bangkok, and the University of the Philippines, Los Baños, on library development; \$2,200;

SULAKSANA SIVARAKSA, editor of the Social Science Association Press of Thailand,

Bangkok: to visit centers of academic publishing in the United States, Europe, and Asia; \$2,300;

TOWARD EXPENSES of field operations by Rockefeller Foundation staff and special appointees at universities in Bangkok; \$17,175;

UNIVERSITY OF MEDICAL SCIENCES, Bangkok:

Equipment for research in tropical medicine in the School of Tropical Medicine, under the direction of Dr. Chamlong Harinasuta, director; \$10,000;

Construction of a two-story wing to connect the virus laboratory to the main building of the Faculty of Public Health; \$10,000;

Miss Uthai Dhutiyabhodhi, chief librarian; to observe the organization and administration of medical libraries while in the United States; \$780.

COOPERATIVE AGRICULTURAL PROGRAM

INTERNATIONAL RICE RESEARCH INSTITUTE, Los Baños, Philippines: operating costs; \$625,000.

STUDY AWARDS

*F: Fellow; S: Scholar; MNS: Medical and Natural Sciences;
AS: Agricultural Sciences; HSS: Humanities and Social Sciences;
BMRC: British Medical Research Council*

ARGENTINA

ENRIQUE FRANCISCO ANTONELLI Ing.Agr., Univ. of Buenos Aires 1959. Plant Science—Pathology. Appointed from Natl. Inst. of Agric. Tech., Castelar. Place of study: U.S.A., 1963-. s-AS

MARIANO ROQUE COCIMANO Ing.Agr., Natl. Univ. of La Plata 1957. Plant Science—Agronomy. Appointed from Natl. Inst. of Agric. and Livestock Tech., Esquel. Place of study: Australia, 1963-. s-AS

JOAQUIN ESPADA B.Sc., Univ. of Cuyo, Mendoza, 1957. Biochemistry. Appointed from Univ. of Cuyo. Place of study: U.S.A., 1963-. s-MNS

FELIX CARLOS LA RED Ing.Agr., Univ. of Cuyo, Mendoza, 1960. Plant Science—Pathology. Appointed from Natl. Inst. of Agric. and Livestock Tech., Mendoza. Place of study: U.S.A., 1963-. s-AS

JOSE ALBERTO PEREZ Ing.Agr., Natl. Univ. of La Plata 1952. Plant Science—Agronomy. Appointed from Agric. Exper. Station, Anguil, La Pampa. Place of study: U.S.A., 1963-. s-AS

EDUARDO LUCIANO RODRIGUEZ-ECHANDIA M.D., Univ. of Cuyo, Mendoza, 1961. Cell Biology. Appointed from Univ. of Cuyo. Place of study: U.S.A., 1963-. F-MNS

SERGIO ARMANDO VERNIER C.P.A., Univ. of Cuyo, Mendoza, 1948. Economics. Appointed from Univ. of Cuyo. Place of study: U.S.A., 1963-. s-HSS

AUSTRALIA

CEDRIC ARTHUR CHETWYND MIMS M.B., B.S., Middlesex Hosp. Med. School, London, England, 1952. Virus Diseases. Appointed from Australian Natl. Univ., Canberra. Places of study: England, U.S.A., 1963-. F-MNS

JOHN HEBDEN POPE Ph.D., Univ. of Queensland, Brisbane, 1963. Virology. Appointed from Queensland Inst. of Med. Research, Brisbane. Place of study: U.S.A., 1963-. F-MNS

KENNETH DOUGLAS SHORTMAN Ph.D., Univ. of Melbourne 1961. Biochemistry. Appointed from Walter and Eliza Hall Inst. of Med. Research, Melbourne. Place of study: U.S.A., 1963-. S-AS

BELGIUM

KAREL ALBRECHT MARIA MERTENS Lic.Econ., Univ. of Louvain 1960. Economics. Appointed from Univ. of Louvain. Place of study: U.S.A., 1963-. F-HSS

BOLIVIA

ANICETO URQUIDI TERRAZAS Agron., Univ. of San Simón, Cochabamba, 1946. Farm Management. Appointed from Univ. of San Simón. Place of study: Colombia, 1963-. S-AS

BRAZIL

ALDO ALVES Eng.Agr., Univ. of São Paulo, Piracicaba, 1949. Plant Science—Agronomy. Appointed from São Paulo State Secretariat of Agric., Campinas. Place of study: U.S.A., 1963-. S-AS

JAYR DE PAIVA CAMPOLLO Chem.Eng., Univ. of Paraná, Curitiba, 1959. Organic Chemistry. Appointed from Univ. of Paraná. Place of study: U.S.A., 1963-. S-MNS

CLAUDIO ANTONIO FERRAZ DE CARVALHO M.D., Univ. of São Paulo 1958. Anatomy. Appointed from Univ. of São Paulo. Place of study: Germany, 1963-. F-MNS

CELIA GALVAO DIAS COELHO Dipl., Univ. of Bahia, Salvador, 1958. Nursing Education. Appointed from Univ. of Bahia. Place of study: U.S.A., 1963-. S-MNS

LINEU FREIRE MAIA M.D., Univ. of Minas Gerais, Belo Horizonte, 1959. Physiology. Appointed from Univ. of Minas Gerais. Place of study: U.S.A., 1963-. F-MNS

EUGENIO HOINACKI Indust.Chem., Univ. of Rio Grande do Sul, Pôrto Alegre, 1957. Organic Chemistry. Appointed from Univ. of Rio Grande do Sul. Place of study: U.S.A., 1963-. F-MNS

FUAD NAUFEL B.S., Univ. of São Paulo 1956. Animal Science—Animal Husbandry. Appointed from São Paulo State Secretariat of Agric., São Paulo. Place of study: U.S.A., 1963—. S—AS

JOSE VICENTE SILVEIRA PEDREIRA Eng.Agr., Univ. of São Paulo 1956. Plant Science—Agronomy. Appointed from São Paulo State Secretariat of Agric., São Paulo. Place of study: England, 1963—. S—AS

JOAO Bosco GUEDES PINTO M.A., Univ. of Montreal, Canada, 1958. Rural Sociology. Appointed from Univ. of Minas Gerais, Viçosa. Place of study: U.S.A., 1963—. S—HSS

RENATO SANT'ANNA B.S., Univ. of Minas Gerais, Belo Horizonte, 1954. Chemistry. Appointed from Univ. of Minas Gerais. Place of study: U.S.A., 1963—. S—AS

CARLOS ALMEIDA SANTA ROSA D.V.M., Agric. Univ., Rio de Janeiro, 1948. Animal Science—Veterinary Science. Appointed from São Paulo State Secretariat of Agric., São Paulo. Place of study: U.S.A., 1963—. F—AS

MARINA AMELIA PINTO VIEGAS DA SILVEIRA SANTOS B.S., Univ. of São Paulo 1957. Electron Microscopy. Appointed from Univ. of São Paulo. Place of study: U.S.A., 1963—. S—MNS

MAYER SNITCOVSKY M.D., Paulista School of Med., São Paulo, 1961. Psychiatry. Appointed from Paulista School of Med. Place of study: Colombia, 1963—. F—MNS

MARIO TANNHAUSER M.D., Univ. of Rio Grande do Sul, Pôrto Alegre, 1957. Pharmacology. Appointed from Univ. of Rio Grande do Sul. Place of study: U.S.A., 1963—. F—MNS

GABRIEL AZAMBUJA DE BRITO VELHO B.A., Univ. of Rio Grande do Sul, Pôrto Alegre, 1962. Philosophy. Appointed from Univ. of Rio Grande do Sul. Place of study: Belgium, 1963—. S—HSS

GERALDO VICENTINI D.Sc., Univ. of São Paulo 1957. Chemistry. Appointed from Univ. of São Paulo. Place of study: U.S.A., 1963—. F—MNS

CHILE

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ROBERTO T. A. CHADWICK Lic., Univ. of Chile, Santiago, 1962. Economics. Appointed from Univ. of Chile. Place of study: Great Britain, 1963-. S-HSS

MARIO CORRALES AVILA M.D., Catholic Univ. of Chile, Santiago, 1957. Neuro-radiology. Appointed from Catholic Univ. of Chile. Place of study: Uruguay, 1963-. F-MNS

ROMILO H. ESPEJO B.S., Univ. of Chile, Santiago, 1962. Biophysics. Appointed from Univ. of Chile. Place of study: U.S.A., 1963-. S-MNS

NORBERTO W. FRITSCH FONCK Agron., Univ. of Chile, Santiago, 1955. Soil Science. Appointed from Min. of Agric., Santiago. Place of study: U.S.A., 1963-. S-AS

HERNAN GACITUA LOWICK-RUSSELL M.S., Iowa State Coll. of Agric. and Mech. Arts 1946. Plant Science—Genetics and Breeding. Appointed from Catholic Univ. of Chile, Santiago. Place of study: U.S.A., 1963-. S-AS

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GONZALO FELIPE GIL Ing.Agr., Catholic Univ. of Chile, Santiago, 1960. Plant Science—Horticulture. Appointed from Catholic Univ. of Chile. Place of study: U.S.A., 1963-. S-AS

LUIS ALBERTO HEIREMANS M.D., Univ. of Chile, Santiago, 1954. Drama. Appointed from Catholic Univ. of Chile, Santiago. Place of study: U.S.A., 1963-. F-HSS

JUAN E. HERRERA Comm.Eng., Univ. of Chile, Santiago, 1962. Economics. Appointed from Univ. of Chile. Place of study: England, 1963-. S-HSS

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LUIS MUXICA HEVIA Lic., Univ. of Chile, Santiago, 1955. Economics. Appointed from Univ. of Concepción. Place of study: Austria, 1963-. s-HSS

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CARLOS E. SEPULVEDA Comm.Eng., Univ. of Chile, Santiago, 1962. Economics. Appointed from Univ. of Chile. Place of study: U.S.A., 1963-. s-HSS

GERARDO SUAREZ MALDONADO M.D., Univ. of Chile, Santiago, 1960. Biochemistry. Appointed from Univ. of Chile. Place of study: U.S.A., 1963-. F-MNS

COLOMBIA

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JAIME ARANGO GUTIERREZ M.D., Univ. of Valle, Cali, 1961. Psychiatry. Appointed from Univ. of Valle. Place of study: U.S.A., 1963-. F-MNS

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JOSE FABIO HEREDIA B.S., Normal Univ., Bogotá, 1950. Biology. Appointed from Univ. of Valle, Cali. Place of study: U.S.A., 1963-. S-MNS

MAGDALENA LEON GOMEZ Lic., Natl. Univ. of Colombia, Bogotá, 1962. Sociology. Appointed from Natl. Univ. of Colombia. Place of study: U.S.A., 1963-. S-HSS

LUIS ALFREDO LEON SARMIENTO B.Sc., Natl. Univ. of Colombia, Bogotá, 1952. Soil Science. Appointed from Min. of Agric., Palmira. Place of study: U.S.A., 1963-. S-AS

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EDELBERTO MULETT CHAVEZ D.V.M., Univ. of Caldas, Manizales, 1961. Animal Science—Veterinary Science. Appointed from Univ. of Caldas. Place of study: U.S.A., 1963-. S-AS

ANTONIO NAVARRETE Lic., Univ. of Ed. and Tech., Boyacá, 1957. Intercultural Understanding. Appointed from Univ. of Valle, Cali. Place of study: U.S.A., 1963-. S-HSS

ARTURO ORREGO M.D., Univ. of Antioquia, Medellín, 1957. Basic Medical Sciences. Appointed from Univ. of Antioquia. Place of study: U.S.A., 1963-. F-MNS

DANIEL PACHECO PEREZ D.V.M., Natl. Univ. of Colombia, Bogotá, 1935. Animal Science. Appointed from Natl. Univ. of Colombia. Place of study: U.S.A., 1963-. S-AS

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NOHRA PENARANDA GONZALEZ B.S., Univ. of Valle, Cali, 1962. Economics. Appointed from Univ. of Valle. Place of study: U.S.A., 1963-. S-HSS

CESAR AUGUSTO PEREZ FIGUEROA M.F., Yale Univ. 1956. Forestry. Appointed from Natl. Univ. of Colombia, Medellín. Place of study: Germany, 1963-. S-AS

JAIME QUEVEDO CAICEDO M.D., Univ. of Valle, Cali, 1961. Public Health. Appointed from Univ. of Valle. Place of study: U.S.A., 1963-. F-MNS

REINALDO REYES NUNEZ Ing.Agr., Natl. Univ. of Colombia, Palmira, 1954. Plant Science—Agronomy. Appointed from Min. of Agric., Bogotá. Place of study: U.S.A., 1963-. s-AS

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MAX RODRIGUEZ F. B.S., Univ. of the Andes, Bogotá, 1962. Economics. Appointed from Univ. of the Andes. Place of study: U.S.A., 1963-. s-HSS

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DOLORES ROMO R.N., Natl. Univ. of Colombia, Bogotá, 1955. Nursing Education. Appointed from Univ. of Valle, Cali. Place of study: Brazil, 1963-. s-MNS

MARIO RUIZ MEDINA D.V.M., Natl. Univ. of Colombia, Bogotá, 1959. Animal Science—Veterinary Science. Appointed from Natl. Univ. of Colombia. Place of study: U.S.A., 1963-. s-AS

JUAN JOSE SALAZAR CRUZ B.S., Natl. Univ. of Colombia, Bogotá, 1962. Animal Science—Genetics and Breeding. Appointed from Min. of Agric., Bogotá. Place of study: U.S.A., 1963-. s-AS

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JUAN MANUEL TORRES Economista, Univ. of the Andes, Bogotá, 1962. Economics. Appointed from Univ. of Valle, Cali. Place of study: U.S.A., 1963-. s-HSS

ANTONIO JOSE URDINOLA URIBE Economista, Univ. of the Andes, Bogotá, 1962. Economics. Appointed from Univ. of Valle, Cali. Place of study: U.S.A., 1963-. s-HSS

MICUEL URRUTIA B.A., Harvard Univ. 1961. Economics. Appointed from Univ. of the Andes, Bogotá. Place of study: U.S.A., 1963-. s-HSS

GUILLEMO VARELA VELASQUEZ Lic., Natl. Univ. of Colombia, Bogotá, 1962. Sociology. Appointed from Natl. Univ. of Colombia. Place of study: U.S.A., 1963-. s-HSS

INES VIVEROS R.N., Natl. Univ. of Colombia, Bogotá, 1948. Public Health Nursing. Appointed from Univ. of Valle, Cali. Place of study: Puerto Rico, 1963-. F-MNS

CONGO

CHRISTIAN ALEXANDRE GUSTAVE FRANÇOIS LL.D., Univ. of Louvain, Belgium, 1959. Economics. Appointed from Lovanium Univ., Leopoldville. Place of study: U.S.A., 1963-. s-HSS

COSTA RICA

HERACLIO ARTEMIO LOMBARDO OLMO M.S., Univ. of Arkansas 1955. Agricultural Economics. Appointed from Inter-American Inst. of Agric. Sciences, San José. Place of study: U.S.A., 1963-. s-HSS

LUIS ARTURO MONTOYA ARMAS M.S., Inter-American Inst. of Agric. Sciences, San José, 1958. Plant Science—Horticulture. Appointed from Inter-American Inst. of Agric. Sciences. Place of study: U.S.A., 1963-. s-AS

GERARDO E. NARANJO MENESSES M.S., Inter-American Inst. of Agric. Sciences, Turrialba, 1963. Economics and Sociology. Appointed from Inter-American Inst. of Agric. Sciences, San José. Place of study: U.S.A., 1963-. s-AS

SHERMAN THOMAS JACKSON B.S., Univ. of Costa Rica, San José, 1962. Inorganic Chemistry. Appointed from Univ. of Costa Rica. Place of study: U.S.A., 1963-. s-MNS

DENMARK

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ECUADOR

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JULIO CABRERA Ing.Agr., Central Univ., Quito, 1959. Plant Science—Genetics and Breeding. Appointed from Natl. Inst. of Agric. and Livestock Research, Quito. Place of study: U.S.A., 1963-. s-AS

GERMAN GONZALEZ BAHAMONDE Ing.Agr., Central Univ., Quito. Plant Science--Agronomy. Appointed from Natl. Inst. of Agric. and Livestock Research, Quito. Place of study: U.S.A., 1963-. S-AS

ETHIOPIA

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FRANCE

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ANDRE DOREMUS Agrégé, Univ. of Paris 1958. Political Science. Appointed from National Center of Scientific Research, Paris. Place of study: U.S.A., 1963-. S-HES

GUY MARCHIS-MOUREN Ph.D., Univ. of Aix-Marseilles 1959. Biochemistry. Appointed from National Center of Scientific Research, Marseilles. Place of study: U.S.A., 1963-. F-MNS

GERMANY

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GHANA

STEPHEN Kojo ADDAE M.B., B.S., Univ. of Ibadan, Nigeria, 1962. Physiology. Appointed from Ghana Acad. of Sciences, Accra. Place of study: U.S.A., 1964-. F-MNS

GUATEMALA

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ANTONIO SANDOVAL Ing.Agr., Univ. of San Carlos, Guatemala City, 1962. Plant Science. Appointed from Natl. Inst. of Agric. and Animal Husbandry, Guatemala City. Place of study: Mexico, 1963-. S-AS

HONDURAS

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INDIA

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SHER SINGH BAINS Ph.D., Univ. of Bombay 1960. Soil Science. Appointed from Indian Agric. Research Inst., New Delhi. Place of study: U.S.A., 1963-. F-AS

ANANTHA SHANTI FENN M.S., Christian Med. Coll., Vellore, 1958. Surgery. Appointed from Christian Med. Coll. Place of study: U.S.A., 1963-. F-MNS

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INDONESIA

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HARUTAKA TANAKA D.Sc., Kyoto Univ. 1959. Electron Microscopic Cytology. Appointed from Kyoto Univ. Place of study: U.S.A., 1963-. F-MNS

SABURO YAMADA Ph.D., Univ. of Tokyo 1962. Economics. Appointed from Univ. of Tokyo. Place of study: U.S.A., 1963-. F-HSS

EIJI YOKOYAMA M.D., Univ. of Tokyo 1955. Environmental Physiology. Appointed from Inst. of Public Health, Tokyo. Place of study: U.S.A., 1963-. F-MNS

KENYA

YAKOBO MABINGO BOSA Dipl. (Vet. Sci.), Makerere Coll., Kampala, Uganda, 1944. Animal Science—Veterinary Science. Appointed from Royal Coll., Nairobi. Place of study: U.S.A., 1963-. S-AS

WASHINGTON AGGREY JALANGO OKUMU B.A., Harvard Univ. 1962. Economics. Appointed from Royal Coll., Nairobi. Place of study: England, 1963-. S-HSS

MEXICO

OMAR AGUNDIS M.S., Ohio State Univ. 1960. Plant Science—Agronomy. Appointed from Natl. Inst. of Agric. Research, Mexico City. Place of study: U.S.A., 1963-. S-AS

HERMILIO HUGO ANGELES ARRIETA M.S., Univ. of Nebraska 1960. Plant Science—Genetics and Breeding. Appointed from Natl. Inst. of Agric. Research, Mexico City. Place of study: U.S.A., 1963-. S-AS

SABINO CHAVEZ RUIZ M.S., Oklahoma State Univ. 1960. Agronomy. Appointed from Natl. Inst. of Agric. Research, Mexico City. Place of study: U.S.A., 1963-. S-AS

MANUEL CUCA GARCIA M.S., Washington State Univ. 1960. Animal Science—Poultry Husbandry. Appointed from Min. of Agric., Mexico City. Place of study: U.S.A., 1963-. S-AS

SANTIAGO DELGADO SANCHEZ M.S., Univ. of California, Davis, 1960. Plant Science—Pathology. Appointed from Natl. Inst. of Agric. Research, Mexico City. Place of study: U.S.A., 1963-. S-AS

GABRIEL DIAZ CASTRO M.S., Univ. of Nebraska 1963. Entomology. Appointed from Natl. Inst. of Agric. Research, Mexico City. Place of study: U.S.A., 1963-. S-AS

RAMON FERNANDEZ GONZALEZ M.S., Univ. of California, Davis, 1958. Soil Science. Appointed from Natl. School of Agric., Chapingo. Place of study: U.S.A., 1963-. S-AS

SANTIAGO FUENTES FUENTES M.S., Univ. of Minnesota 1958. Plant Science—Pathology. Appointed from Natl. Inst. of Agric. Research, Mexico City. Place of study: U.S.A., 1963-. S-AS

RICARDO GARCIA-LACOS M.S., Univ. of North Carolina 1960. Soil Science—Soil Physics. Appointed from Inst. for the Improvement of Sugar Cane Production, Mexico City. Place of study: U.S.A., 1963-. S-AS

CELSO GARCIA MARTELL Ing.Agr., Natl. School of Agric., Chapingo, 1956. Entomology. Appointed from Natl. School of Agric. Place of study: U.S.A., 1963-. S-AS

JOSE ALBERTO DE LA GARZA CABELLO Ing.Agr., Univ. of Coahuila, Saltillo, 1956. Agricultural Engineering. Appointed from Univ. of Coahuila. Place of study: U.S.A., 1963-. S-AS

RAUL GARZA CHAPA M.S., Natl. School of Agric., Chapingo, 1961. Plant Science—Pathology. Appointed from Natl. School of Agric. Place of study: U.S.A., 1963-. S-AS

JAVIER GIL FLORES M.S., Purdue Univ. 1960. Plant Science—Agronomy. Appointed from Natl. Inst. of Agric. Research, Mexico City. Place of study: U.S.A., 1963-. S-AS

ROQUE GONZALEZ-SALAZAR M.A., Univ. of Nuevo León, Monterrey, 1954. Political Science. Appointed from Colegio de México, Mexico City. Place of study: Great Britain, 1963-. F-HSS

MARCO ANTONIO HIDALGO MENDOZA D.V.M., Natl. Univ. of Mexico, Mexico City, 1960. Animal Science—Veterinary Science. Appointed from Natl. Center for Animal Research, Palo Alto. Place of study: U.S.A., 1963-. S-AS

ANTONIO MARINO AMBROSIO M.S., Univ. of Minnesota 1947. Plant Science—Botany. Appointed from Natl. Inst. of Agric. Research, Mexico City. Place of study: U.S.A., 1963-. S-AS

JEAN MARIO MATHIEU VEILLARD M.S., Univ. of Illinois 1960. Entomology. Appointed from Tech. Inst. and School of Advanced Studies, Monterrey. Place of study: U.S.A., 1963-. S-AS

MARIA ELENA OTA MISHIMA M.A., Natl. Univ. of Mexico, Mexico City, 1962. History. Appointed from Colegio de México, Mexico City. Place of study: Japan, 1963-. S-HSS

CARLOS ALEJANDRO TELLO M.S., Columbia Univ. 1959. Economics. Appointed from Colegio de México, Mexico City. Places of study: Mexico, Argentina, Chile, 1963-. S-HSS

SALVADOR VALADEZ ALVAREZ Pasante, School of Agric., Ciudad Juárez, 1959. Animal Science—Nutrition and Physiology. Appointed from Natl. Center for Animal Research, Palo Alto. Place of study: U.S.A., 1963-. S-AS

FELIPE VAZQUEZ MANCINAS Agron., School of Agric., Ciudad Juárez, 1958. Soil Science. Appointed from Univ. of Chihuahua. Place of study: U.S.A., 1963-. S-AS

MARCIAL VELASCO M.S., Oklahoma State Univ. 1961. Animal Science—Nutrition and Physiology. Appointed from Natl. Inst. for Animal Research, Chihuahua. Place of study: U.S.A., 1963-. S-AS

NETHERLANDS

PIET BORST M.D., Univ. of Amsterdam 1961. Biochemistry. Appointed from Univ. of Leiden. Place of study: U.S.A., 1963-. F-MNS

NIGERIA

ANTHONY AFOLABI ADEGBOLA M.S., Rutgers, the State Univ. of New Jersey, 1961. Plant Science—Agronomy. Appointed from Univ. of Ife, Ibadan. Place of study: U.S.A., 1963-. S-AS

QUIRINO BANDELE OLATUNJI ANTHONIO Dipl. (Agr. Econ.), Univ. of Oxford, England, 1959. Economics—Sociology. Appointed from Univ. of Ibadan. Place of study: U.S.A., 1963-. S-AS

AYODELE BABAJIDE OLUKOYA DESALU Ch.B., Univ. of Bristol, England, 1961. Anatomy. Appointed from Univ. of Ibadan. Place of study: U.S.A., 1963-. F-MNS

EDET UDO ESENAM B.S., Univ. of Durham, Newcastle upon Tyne, England, 1959.
Plant Science—Pathology. Appointed from Univ. of Ife, Ibadan. Place of study:
U.S.A., 1963—. s-AS

MOSES OKECHUKU ILO M.B., B.S., Univ. of Ibadan 1962. Psychiatric Epidemiology. Appointed from Univ. of Ibadan. Place of study: England, 1963—. F-MNS

FOLORUNSO EBUN AKINBOYE LESI L.R.C.P., Royal Coll. of Surgeons, Dublin, Ireland, 1959. Pediatrics. Appointed from Univ. of Ibadan. Place of study: Ireland, 1963—. F-MNS

ADETOKUNBO OLUMIDE OLUWOLE LUCAS M.B., Univ. of Durham, Newcastle upon Tyne, England, 1956. Social and Preventive Medicine. Appointed from Univ. Coll. Hosp., Ibadan. Place of study: U.S.A., 1963—. F-MNS

CHUKUEDU NWOKOLO M.R.C.P., Univ. of Edinburgh, Scotland, 1953. Gastro-enterology and Internal Medicine. Appointed from Univ. of Ibadan. Place of study: U.S.A., 1963—. F-MNS

CHRISTOPHER BOLAJI OGUNKOYA B.S., Oregon State Coll. 1959. Engineering. Appointed from Min. of Agric. and Nat. Res., Ibadan. Place of study: U.S.A., 1963—. s-AS

SAMUEL N. C. OKONKWO B.Sc., Univ. Coll., Ibadan, 1960. Plant Science—Botany. Appointed from Univ. of Ibadan. Place of study: U.S.A., 1963—. s-AS

EMMANUEL GLADSTONE OLAWALE ROTIMI B.F.A. Boston Univ. 1963. Drama. Appointed from Univ. of Ibadan. Place of study: U.S.A., 1963—. s-HSS

SAUDIQ KOLAWOLE TAIWO WILLIAMS M.S., Cornell Univ. 1961. Economics and Sociology. Appointed from Min. of Agric. and Nat. Res., Ibadan. Place of study: U.S.A., 1963—. s-AS

NORWAY

SVEIN MARTINUS NORDBOTTEN Cand.Econ., Univ. of Oslo 1952. Economics. Appointed from Central Bureau of Statistics, Oslo. Place of study: U.S.A., 1963—. F-HSS

PAKISTAN

SYED ABU NASR ALI ASHRAF M.A., Univ. of Dacca 1946. Literature. Appointed from Univ. of Karachi. Place of study: England, 1963—. s-HSS

M. MAHFUZAL HUQ LL.B., Univ. of Dacca 1957. Political Science. Appointed from Univ. of Dacca. Place of study: U.S.A., 1963—. s-HSS

PERU

MANUEL NORBERTO ARCA BIELICK M.S., Univ. of North Carolina 1958. Soil Science. Appointed from Agrarian Univ., La Molina, Lima. Place of study: U.S.A., 1963-. S-AS

HERNAN F. BARRETO B. B.S., Agrarian Univ., La Molina, Lima, 1961. Food Science—Nutrition. Appointed from Agrarian Univ. Place of study: U.S.A., 1963-. S-AS

GUILLERMO BURGO Ing.Agr., Natl. School of Agric., La Molina, Lima, 1959. Poultry Science. Appointed from Agrarian Univ., La Molina, Lima. Place of study: U.S.A., 1963-. S-AS

ALFONSO CERRATE VALENZUELA M.S., Iowa State Coll. of Agric. and Mech. Arts 1955. Plant Science—Genetics and Breeding. Appointed from Agrarian Univ., La Molina, Lima. Place of study: U.S.A., 1963-. S-AS

FAUSTO HUMBERTO CISNEROS Ing.Agr., Natl. School of Agric., La Molina, Lima, 1959. Entomology. Appointed from Agrarian Univ., La Molina, Lima. Place of study: U.S.A., 1963-. S-AS

GABRIEL ESCOBAR M. M.A., Natl. Univ. of Cuzco 1961. Sociology. Appointed from Univ. of Huamanga, Ayacucho. Place of study: U.S.A., 1963-. S-HSS

ABRAHAM E. FEBRES CRUZ Agron., Agrarian Univ., La Molina, Lima, 1961. Economics. Appointed from Agrarian Univ. Place of study: U.S.A., 1963-. S-HSS

GUILLERMO GOMEZ GARCIA Ing.Agr., Natl. School of Agric., La Molina, Lima, 1956. Animal Science—Nutrition and Physiology. Appointed from Agrarian Univ., La Molina, Lima. Place of study: U.S.A., 1963-. S-AS

CARLOS KRUMDIECK BOIT M.D., Univ. of San Marcos, Lima, 1958. Biochemistry. Appointed from Peruvian Univ. of Med. and Biol. Sciences, Lima. Place of study: U.S.A., 1963-. F-MNS

PEDRO LOPEZ CAMARENA Ing.Agr., Natl. School of Agric., La Molina, Lima, 1958. Plant Science—Genetics and Breeding. Appointed from Min. of Agric., Lima. Place of study: Mexico, 1963-. S-AS

ABNER MONTALVO VIDAL B.A., Univ. of San Marcos, Lima, 1954. Sociology. Appointed while a student at Cornell Univ. Place of study: U.S.A., 1963-. S-HSS

FERNANDO PORTURAS PLAZA M.D., Univ. of San Marcos, Lima, 1955. Histology. Appointed from Peruvian Univ. of Med. and Biol. Sciences, Lima. Place of study: Brazil, 1963-. F-MNS

FELIX E. QUEVEDO Ing.Agr., Agrarian Univ., La Molina, Lima, 1961. Soil Science. Appointed from Min. of Agric., Lima. Place of study: U.S.A., 1963-. S-AS

FRIEDRICH SCHEUCH HERNANDEZ M.S., Iowa State Coll. of Agric. and Mech. Arts 1957. Plant Science—Agronomy. Appointed from Agrarian Univ., La Molina, Lima. Place of study: U.S.A., 1963-. S-AS

RICARDO SEVILLA PANIZO Ing.Agr., Agrarian Univ., La Molina, Lima, 1960. Plant Science—Genetics and Breeding. Appointed from Agrarian Univ. Place of study: U.S.A., 1963-. S-AS

JOSE VALLE-RIESTRA SALAZAR Ing.Agr., Agrarian Univ., La Molina, Lima, 1961. Animal Science—Nutrition and Physiology. Appointed from Agrarian Univ. Place of study: U.S.A., 1963-. S-AS

OSWALDO FLAVIO VARGAS GONZALES M.S., Univ. of North Carolina 1960. Plant Science—Pathology. Appointed from Min. of Agric., Tingo Maria. Place of study: U.S.A., 1963-. S-AS

PHILIPPINES

ARMANDO BONIFACIO B.A., Univ. of the Philippines, Quezon City, 1953. Philosophy. Appointed from Univ. of the Philippines. Place of study: U.S.A., 1963-. S-HSS

BENJAMIN L. CARIOSA M.S., Oklahoma State Univ. 1960. Entomology. Appointed from Univ. of the Philippines, Los Baños. Place of study: U.S.A., 1963-. S-AS

NAPOLEON JIMENEZ CASAMBRE M.A., Cornell Univ. 1958. History. Appointed from Univ. of the Philippines, Quezon City. Place of study: U.S.A., 1963-. S-HSS

SILVINO V. EPISTOLA A.B., Univ. of the Philippines, Quezon City, 1952. History. Appointed from Univ. of the Philippines. Place of study: U.S.A., 1963-. S-HSS

VIRGILIO CRUZ ESQUERRA D.V.M., Univ. of the Philippines, Quezon City, 1954. Animal Science—Veterinary Science. Appointed from Univ. of the Philippines. Place of study: U.S.A., 1963-. S-AS

WINIFREDA A. EVANGELISTA M.A., Univ. of California, Los Angeles, 1961. Literature. Appointed from Univ. of the Philippines, Quezon City. Place of study: U.S.A., 1963-. S-HSS

ALEJANDRO M. FERNANDEZ M.A., Cornell Univ. 1955. Political Science. Appointed from Univ. of the Philippines, Quezon City. Place of study: U.S.A., 1963-. S-HSS

ARTURO ABIANG GOMEZ M.S., Univ. of the Philippines, Los Baños, 1961. Plant Science—Genetics and Breeding. Appointed from Univ. of the Philippines. Place of study: U.S.A., 1963-. s-AS

RAYMUNDO ESTRADA JOVELLANOS B.S.A., Univ. of the Philippines, Quezon City, 1950. Agricultural Engineering. Appointed from Central Luzon Agric. Coll., Nueva Ecija. Place of study: U.S.A., 1963-. s-AS

PERLA D. LIMCANGO-LOPEZ M.S., Univ. of Florida 1959. Animal Science—Nutrition and Physiology. Appointed from Univ. of the Philippines, Los Baños. Place of study: U.S.A., 1963-. s-AS

RESTITUTO RAMOS LOPEZ B.S., Univ. of the Philippines, Los Baños, 1948. Plant Science—Agronomy. Appointed from Dept. of Agric. and Nat. Res., Los Baños. Place of study: U.S.A., 1963-. s-AS

ELVIRA BATAYON MANZANILLA M.S., Univ. of the Philippines, Los Baños, 1956. Chemistry. Appointed from Univ. of the Philippines. Place of study: U.S.A., 1963-. s-AS

MELITON NAPARAN NOVILLA D.V.M., Univ. of the Philippines, Quezon City, 1960. Animal Science—Veterinary Science. Appointed from Univ. of the Philippines. Place of study: U.S.A., 1963-. s-AS

FLORENDO C. QUEBRAL M.S., Univ. of the Philippines, Los Baños, 1963. Plant Science—Pathology. Appointed from Univ. of the Philippines. Place of study: U.S.A., 1963-. s-AS

NORA CRUZ QUEBRAL M.S., Univ. of Wisconsin 1957. Economics—Sociology. Appointed from Univ. of the Philippines, Los Baños. Place of study: U.S.A., 1963-. s-AS

EDILBERTO D. REYES M.S., Univ. of the Philippines, Los Baños, 1956. Soil Science. Appointed from Univ. of the Philippines. Place of study: U.S.A., 1963-. s-AS

AMPARO GOSECO RIGOR M.S., Univ. of Wisconsin 1959. Home Economics. Appointed from Univ. of the Philippines, Los Baños. Place of study: U.S.A., 1963-. s-AS

TITO JURALBAL RIMANDO M.S., Cornell Univ. 1962. Plant Science—Physiology. Appointed from Univ. of the Philippines, Los Baños. Place of study: U.S.A., 1963-. s-AS

BONIFACIO S. SALAMANCO M.A., Yale Univ. 1956. History. Appointed from Univ. of the Philippines, Quezon City. Place of study: U.S.A., 1963-. s-HSS

EPIFANIO SAN JUAN, JR. M.A., Harvard Univ. 1962. English. Appointed while studying at Harvard Univ. Place of study: U.S.A., 1963-. s-HSS

SEVERINO R. SANTOS, JR. M.S., Cornell Univ. 1959. Economics and Sociology. Appointed from Univ. of the Philippines, Los Baños. Place of study: U.S.A., 1963-. s-AS

JESUSA TORATO TALEON M.S., Univ. of Missouri 1961. Engineering. Appointed from Univ. of the Philippines, Los Baños. Place of study: U.S.A., 1963-. s-AS

MILAGROS C. ZAMORA B.A., Univ. of the Philippines, Quezon City, 1957. Library Science. Appointed from International Rice Research Inst., Los Baños. Place of study: U.S.A., 1963-. s-AS

POLAND

TADEUSZ BACIA M.D., 2nd Moscow Med. Inst., Union of Soviet Socialist Republics, 1955. Clinical Electrophysiology. Appointed from Acad. of Med., Warsaw. Place of study: Canada, 1963-. F-MNS

JULIA DANUTA BARTKIEWICZ Dipl., Nurses' Training School, Warsaw, 1951. Nursing Service Administration. Appointed from Polyclinic of the Central Council of Trade Unions, Warsaw. Place of study: U.S.A., 1963-. s-MNS

IRENA CHROMINSKA Dipl., Nurses' Training School, Warsaw, 1951. Nursing Service Administration. Appointed from Municipal General Hosp., Warsaw. Place of study: U.S.A., 1963-. s-MNS

HENRYK DUNIEC D.Ag., Jagiellonian Univ., Cracow, 1960. Animal Science—Genetics and Breeding. Appointed from Inst. of Animal Husbandry, Cracow. Place of study: U.S.A., 1963-. F-AS

JERZY GEORGIADES M.D., Acad. of Med., Gdansk, 1960. Biology. Appointed from Acad. of Med., Cracow. Place of study: U.S.A., 1963-. F-MNS

KRYSTYNA MARIA GUMOWSKA Dipl., School of Nursing, Kielce, 1955; Dipl., Teachers' Coll., Warsaw, 1960. Nursing Service Administration. Appointed from School of Nursing. Place of study: U.S.A., 1963-. s-MNS

MARIAN HIEROWSKI M.D., Acad. of Med., Poznan, 1957. Biochemistry—Proteins. Appointed from Acad. of Med. Place of study: U.S.A., 1963-. F-MNS

CATHERINE JANCEWICZ Dipl., Nurses' Training School, Warsaw, 1952. Nursing Service Administration. Appointed from Warsaw District Hosp. Place of study: U.S.A., 1963-. s-MNS

STANISLAWA MAGDON Dipl., Univ. School for Nurses and Midwives, Cracow, 1951. Nursing Service Administration. Appointed from Municipal General Hosp., Warsaw. Place of study: U.S.A., 1963-. s-MNS

OLGIERD NARKIEWICZ M.D., Acad. of Med., Gdansk, 1951. Neuroanatomy. Appointed from Acad. of Med. Place of study: U.S.A., 1963-. F-MNS

JERZY RYCHLEWSKI D.Sc., Jagiellonian Univ., Cracow, 1961. Plant Cytology and Cytogenetics. Appointed from Jagiellonian Univ. Place of study: U.S.A., 1963-. F-MNS

MARTA SZIBERL Dipl., Univ. School for Nurses and Midwives, Cracow, 1939. Nursing. Appointed from Municipal Hosp., Chorzow. Place of study: U.S.A., 1963-. s-MNS

BARBARA SZUBINSKA Ph.D., Jagiellonian Univ., Cracow, 1961. Biology. Appointed from Jagiellonian Univ. Place of study: U.S.A., 1963-. F-MNS

SENEGAL

JOHN BOSCO ADOTEVI Univ. of Dakar 1963. Journalism. Appointed from *Afrique Nouvelle*, Dakar. Place of study: U.S.A., 1963-. s-HSS

SUDAN

SAYED MOHAMED OMER BESHIR B.Sc., Queen's Univ. of Belfast, Northern Ireland, 1956. Education. Appointed from Univ. of Khartoum. Place of study: England, 1963-. s-HSS

THAILAND

SUJIN JINAIYON M.S., Iowa State Univ. 1960. Plant Science—Genetics and Breeding. Appointed from Kasetsart Univ., Bangkok. Place of study: U.S.A., 1963-. s-AS

SOTIORN PRASERTPHION M.S., Univ. of California, Berkeley, 1962. Entomology. Appointed from Dept. of Agric., Bangkok. Place of study: U.S.A., 1963-. s-AS

RABIN RUTTANAPHANI D.V.M., Kasetsart Univ., Bangkok, 1962. Animal Science—Veterinary Science. Appointed from Kasetsart Univ. Place of study: U.S.A., 1963-. s-AS

PRASERT SAISITHI M.S., Univ. of Washington 1959. Food Science. Appointed from Kasetsart Univ., Bangkok. Place of study: U.S.A., 1963-. s-AS

PRAMUAN SATARATH B.S., Univ. of Florida 1960. Soil Science. Appointed from Dept. of Agric., Bangkok. Place of study: U.S.A., 1963-. s-as

PHINTT SIMASATHIEN M.D., Univ. of Med. Sciences, Bangkok, 1959. Epidemiology. Appointed from Univ. of Med. Sciences. Place of study: U.S.A., 1963-. F-MNS

SAM-ARNG SRINILTA B.S., Univ. of the Philippines, Los Baños, 1959. Soil Science. Appointed from Kasetsart Univ., Bangkok. Place of study: U.S.A., 1963-. s-as

WATNA STIENSWAT M.S., Utah State Univ. 1958. Plant Science—Horticulture. Appointed from Kasetsart Univ., Bangkok. Place of study: U.S.A., 1963-. s-as

TURKEY

DENIZ BAYKAL Ph.D., Univ. of Ankara 1963. Political Science. Appointed from Univ. of Ankara. Place of study: U.S.A., 1963-. F-HSS

HALUK CILLOV Ph.D., Univ. of Istanbul 1949. Economics. Appointed from Univ. of Istanbul. Place of study: U.S.A., 1963-. F-HSS

BILGE KARASU Univ. of Istanbul 1953. Literature. Appointed from Ankara. Places of study: United Kingdom and on the Continent, 1963-. F-HSS

UCUR KORUM Ph.D., Univ. of Ankara 1963. Statistics. Appointed from Univ. of Ankara. Place of study: U.S.A., 1963-. F-HSS

ERGUN OZBUDUN Ph.D., Univ. of Ankara 1962. Political Science. Appointed from Univ. of Ankara. Place of study: U.S.A., 1963-. F-HSS

MEHMET SELIK Ph.D., Univ. of Istanbul 1960. Economics. Appointed from Univ. of Ankara. Place of study: England, 1963-. F-HSS

ORULAN TURKAY Ph.D., Univ. of Ankara 1962. Economics. Appointed from Univ. of Ankara. Place of study: U.S.A., 1963-. F-HSS

UGANDA

OKOT BWANGAMOI D.V.M., Makerere Univ. Coll., Kampala, 1962. Animal Science—Veterinary Science. Appointed from Animal Health Research Centre, Entebbe. Place of study: U.S.A., 1963-. s-as

NIMROD ODUNDO BWIBO L.M.S., Makerere Univ. Coll., Kampala, 1960. Pediatrics and Child Health. Appointed from Makerere Univ. Coll. Place of study: U.S.A., 1963-. F-MNS

SAID HAMDUN B.A., School of Oriental and African Studies, Univ. of London, England, 1959. Islamic Studies. Appointed from Makerere Univ. Coll., Kampala. Places of study: Canada, U.S.A., Europe, 1963-. s-HSS

UNITED ARAB REPUBLIC

KAMAL MOHAMED HAGRAS M.A., Univ. of Paris, France, 1955. International Relations. Appointed from Min. of Foreign Affairs, Cairo. Place of study: U.S.A., 1963-. s-HSS

UNITED KINGDOM

MICHAEL ELLIS ABRAMS M.B., Univ. of Birmingham 1956. Cardiovascular Diseases. Appointed from Guy's Hosp. Med. School, London. Place of study: U.S.A., 1963-. F-BMRC

WILLIAM ROSS CATTLE M.B., Univ. of Edinburgh 1951. Renal Physiology. Appointed from St. Bartholomew's Hosp., London. Place of study: U.S.A., 1963-. F-BMRC

IAN CAMPBELL CREE M.D., Univ. Coll. Hosp. Med. School, London, 1954. Immunology. Appointed from Charing Cross Hosp. Group, London. Place of study: U.S.A., 1963-. F-BMRC

MALCOLM EDWARD DAVIES Ph.D., Univ. of Birmingham 1957. Biology-Plant Physiology. Appointed from Univ. of Birmingham. Place of study: U.S.A., 1963-. F-MNS

NORMAN FIELDING JONES M.B., St. Thomas' Hosp. Med. School, London, 1956. Physiology. Appointed from St. Thomas' Hosp. Place of study: U.S.A., 1963-. F-BMRC

JOHN PHILIP KNOWLES M.B., Univ. Coll. Hosp. Med. School, London, 1956. Biochemistry. Appointed from Univ. Coll. Hosp. Place of study: U.S.A., 1963-. F-BMRC

MICHAEL LIPTON B.A., Univ. of Oxford 1960. Economics. Appointed from Univ. of Sussex, Brighton. Place of study: U.S.A., 1963-. F-HSS

CLIFFORD MAWDSLEY M.B., Victoria Univ. of Manchester 1953. Neurology. Appointed from Manchester Royal Infirmary. Place of study: U.S.A., 1963-. F-BMRC

UNITED STATES

Roy EDWARD BROWN M.D., Columbia Univ. 1956. Tropical Pediatrics. Appointed while studying at London School of Hygiene and Trop. Med. under a United States Public Health Service grant. Place of study: Uganda, 1963-. F-MNS

JOHN G. MERSELIS, JR. M.D., Johns Hopkins Univ. 1957. Infectious Diseases. Appointed from New York Hospital-Cornell Medical Center. Place of study: Uganda, 1963-. F-MNS

GEORGE VAN HORN MOSELEY, III M.A., Yale Univ. 1960. History. Appointed from Council on Foreign Relations, New York. Place of study: U.S.A., 1963-. F-HSS

EUGENE BERTRAM SKOLNIKOFF M.A., Univ. of Oxford, England, 1952. Political Science. Appointed from staff of Special Assistant for Science and Tech., The White House, Washington, D.C. Place of study: U.S.A., 1963-. S-HSS

WILFRED CANTWELL SMITH Ph.D., Princeton Univ. 1948. Religion. Appointed from Harvard Univ. Place of study: India, 1963-. F-HSS

WEST INDIES

Jamaica

DOUGLAS GORDON HALL Ph.D., Univ. of London, England, 1954. History. Appointed from Univ. of the West Indies, Mona. Place of study: U.S.A., 1963-. F-HSS

Trinidad

JEFFERS ANDREW HENRY Siegurd Leeder School of Dance, London, England, 1961. Dance. Appointed from Little Carib Theatre, Port-of-Spain. Place of study: U.S.A., 1963-. F-HSS

WORLD HEALTH ORGANIZATION

JARL KENRICK FORSS M.D., Univ. of Helsingfors, Finland, 1956. Public Health. Appointed from World Health Organization. Place of study: England, 1963-. F-MNS

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SUMMARY

In 1963 the Trustees of The Rockefeller Foundation appropriated over \$37 million as compared with \$30 million in 1962. Income on investments exceeded \$26 million, an increase of \$1.8 million over 1962; whereas expenditures of \$35.3 million were \$5.8 million more than in 1962.

Net appropriations (\$37 million less \$3.3 million of unexpended appropriations which lapsed) were approximately \$8 million in excess of income. The excess was charged to the Principal Fund, leaving a balance of approximately \$171 million at December 31, 1963. The market value of the Principal Fund was \$683 million at the end of the year.

Expenditures, which exceeded current appropriations by \$1.5 million, reduced the balance of appropriations still to be paid from \$62.8 to \$61.3 million.

Further diversification of investments was accomplished by exchanges with The Ford Foundation of 89,058 shares of Standard Oil Company (New Jersey) capital stock for 122,045 shares of Ford Motor Company common stock. Three other stock issues in the Foundation's portfolio were sold for approximately \$5 million and the proceeds were invested in other equities, and additional stock purchases of \$5.1 million were financed by withdrawals from savings deposits.

The financial statements, together with the opinion of Haskins & Sells, independent public accountants, are presented in the following pages. Marketable securities are stated on the balance sheet at the cost or market value at date of gift or receipt. Property is carried at nominal or depreciated amount: two pieces of real estate (Girardot, Colombia, and Bellagio, Italy) used in connection with Foundation programs are included at nominal value, while office equipment and furniture are carried at cost less accumulated depreciation.

ACCOUNTANTS' OPINION

HASKINS & SELLS

CERTIFIED PUBLIC ACCOUNTANTS

TWO BROADWAY
NEW YORK 10004

February 25, 1964

Board of Trustees,
The Rockefeller Foundation,
111 West 50th Street,
New York.

Dear Sirs:

We have examined the balance sheet of The Rockefeller Foundation, including the schedule of marketable securities, as of December 31, 1963 and the related statement of income and appropriations, statement of principal fund, summary of appropriations and payments, and summary of transactions in marketable securities 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 financial statements and schedule present fairly the financial position of the Foundation at December 31, 1963 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.

Yours truly,

Haskins & Sells.

BALANCE SHEET · DECEMBER 31, 1963

A S S E T S

INVESTMENTS:

Marketable securities—principally at cost or market value at date of gift or receipt (quoted market value, \$720,608,796)	\$207,896,503
Interest-bearing cash deposits	21,662,349
	<hr/>
	229,558,852

CASH ON HAND AND ON DEPOSIT	2,787,088
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ADVANCES UNDER APPROPRIATIONS TO BE ACCOUNTED FOR, ACCOUNTS RECEIVABLE AND DEFERRED CHARGES	565,957
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PROPERTY—at nominal or depreciated amount	227,642
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TOTAL	<hr/> <u>\$233,139,539</u>
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F U N D S A N D O B L I G A T I O N S

PRINCIPAL FUND	\$170,867,559
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UNPAID APPROPRIATIONS	61,335,285
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ACCOUNTS PAYABLE	709,053
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PROPERTY FUND	227,642
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TOTAL	<hr/> <u>\$233,139,539</u>
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STATEMENT OF INCOME AND APPROPRIATIONS

FOR THE YEAR ENDED DECEMBER 31, 1963

INCOME:

Income on investments:	
Dividends	\$22,628,631
Interest on bonds	2,146,282
Interest on cash deposits	1,264,890
	<hr/>
	26,039,803
Refunds of appropriations paid in prior years	27,157
	<hr/>
	26,066,960

APPROPRIATIONS:

During the year	\$37,146,072
Less unexpended balances of appropriations lapsed	3,286,529
EXCESS OF APPROPRIATIONS OVER INCOME FOR THE YEAR CHARGED TO PRINCIPAL FUND	<hr/> <u>33,859,543</u>

STATEMENT OF PRINCIPAL FUND

FOR THE YEAR ENDED DECEMBER 31, 1963

BALANCE, JANUARY 1, 1963 \$178,523,728

ADD:

Excess of market value of 122,045 shares of Ford Motor Company common stock received over the ledger amount of 89,058 shares of Standard Oil Company (New Jersey) capital stock exchanged therefor	4,942,370
Excess of proceeds from sales of securities over ledger amount	179,044
Contribution received	15,000

DEDUCT: Excess of appropriations over income for the year

BALANCE, DECEMBER 31, 1963 \$170,867,559

**SUMMARY OF APPROPRIATIONS AND PAYMENTS
FOR THE YEAR ENDED DECEMBER 31, 1963**

UNPAID APPROPRIATIONS, JANUARY 1, 1963	\$62,818,340
APPROPRIATIONS DURING THE YEAR:	
Agricultural Sciences	\$ 7,871,750
Humanities and Social Sciences	10,323,936
Medical and Natural Sciences	6,318,220
General	9,446,356
Administration and Supporting Services	3,685,810
	<hr/>
	37,146,072
Less unexpended balances of appropriations lapsed	3,286,529
	<hr/>
	33,859,543
	<hr/>
PAYMENTS DURING THE YEAR	96,677,883
UNPAID APPROPRIATIONS, DECEMBER 31, 1963	<u>35,342,598</u>
	<hr/>
	<u>\$61,335,285</u>

**SUMMARY OF TRANSACTIONS IN
MARKETABLE SECURITIES**

FOR THE YEAR ENDED DECEMBER 31, 1963

Ledger Amount of Securities, January 1, 1963	\$204,757,584
Purchased	\$28,430,653
Otherwise Acquired	17,411,708
Transfer Taxes and Expenses—Incurred for securities exchanged	10,004
	<hr/>
	45,852,365
Sold	21,398,839
Redeemed at Maturity	9,433,450
Otherwise Disposed Of	11,864,333
Amortization of Bond Premiums	16,824
	<hr/>
Ledger Amount of Securities, December 31, 1963	\$207,896,503
	<hr/>

**SUMMARY OF TRANSACTIONS IN
MARKETABLE SECURITIES *continued***
FOR THE YEAR ENDED DECEMBER 31, 1963

PURCHASED:		LEDGER AMOUNT
\$13,500,000	United States of America Treasury Bills	\$ 18,398,275
5,000,000	United States of America 3½% Treasury Notes due February 15, 1967	4,996,875
10,000	shares Christiana Securities Co. Common (Par \$1.25)	2,121,600
34,700	" Consumers Power Co. Common (No Par)	1,651,630
8,500	" General Motors Corp. Common (Par \$1½)	668,079
2,010	" Hanna Mining Co. Common (Par \$1)	246,565
56,300	" Hooker Chemical Corp. Common (Par \$5)	2,129,640
41,600	" McGraw-Edison Co. Common (Par \$1)	1,635,791
11,100	" Minnesota Mining & Manufacturing Co. Common (No Par)	719,043
500	" Monsanto Chemical Co. Common (Par \$2)	27,660
4,300	" Scott Paper Co. Common (No Par)	160,399
20,100	" Weyerhaeuser Co. Common (Par \$7.50)	675,096
		<hr/> <u>\$ 28,430,853</u>

OTHERWISE ACQUIRED:

\$10,000,000	United States of America 3½% Treasury Notes due February 15, 1967 received in exchange for \$4,000,000 3½% Treasury Certificates of Indebtedness due August 15, 1963 and \$6,000,000 2½% Treasury Bonds due August 15, 1963, less \$20,000 cash received therefor	\$ 9,949,622
25,200	shares Cities Service Co. \$2.25 Cumulative Convertible Preference (No Par) received under Plan of Reorganization in exchange for 28,000 shares Tennessee Corporation Common (Par \$1.25)	1,438,865
1,008	" Dow Chemical Co. Common (Par \$5) received as a stock dividend on 50,440 shares of Common (Par \$5) owned of record 3/20/63	—
122,045	" Ford Motor Co. Common (Par \$2.50) received in exchange for 89,058 shares of Standard Oil Co. (New Jersey) Capital (Par \$7). Recorded at market price of shares received	5,398,216
2,000	" Hartford Fire Insurance Co. Capital (Par \$5) received as a stock dividend on 100,000 shares of Capital (Par \$5) owned of record 9/3/63	—

**SUMMARY OF TRANSACTIONS IN
MARKETABLE SECURITIES *continued***
FOR THE YEAR ENDED DECEMBER 31, 1963

OTHERWISE ACQUIRED — *concl'd*

LEDGER AMOUNT

860	shares Hooker Chemical Corp. Common (Par \$5) received as a stock dividend on 43,000 shares of Common (Par \$5) owned of record 11/4/63	—
4,635	" International Paper Co. Common (Par \$2.50) received as a stock dividend on 231,767 shares of Common (Par \$2.50) owned of record 11/22/63	—
4,161	" Marathon Oil Co. Common (No Par) received as a stock dividend on 208,080 shares of Common (No Par) owned of record 5/17/63	—
683	" Monsanto Chemical Co. Common (Par \$2) received as a stock dividend on 34,170 shares of Common (Par \$2) owned of record 11/4/63	—
1,100	" Philips Gloeilampenfabrieken Common (Par Nfl 25) received as a stock dividend on 22,000 shares of Common (Par Nfl 25) owned of record 4/25/63	—
800	" Pittsburgh Plate Glass Co. Common (Par \$10) received as a stock dividend on 40,000 shares of Common (Par \$10) owned of record 11/30/62	—
1,332	" Security First National Bank of Los Angeles Common (Par \$12.50) received as a stock dividend on 22,000 shares of Common (Par \$12.50) owned of record 2/8/63	—
10,500	" Standard Oil Co. of California Capital (Par \$6.25) received as a stock dividend on 210,000 shares of Capital (Par \$6.25) owned of record 12/20/62	—
8,695	" 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 10/31/63. Proceeds of sale credited to income	\$ 625,005
		<u>\$ 17,411,708</u>

SOLD:		PROCEEDS	LEDGER AMOUNT
\$ 4,500,000	United States of America Treasury Bills	\$ 4,466,854*	\$ 4,466,854
5,000,000	United States of America 3½% Treasury Bonds due November 15, 1966	4,989,063	4,972,980
480,000	United States of America 3¼% Treasury Notes due May 15, 1963	480,525	480,000

* Proceeds of U. S. A. Treasury Bills sold or redeemed were augmented by the sum of \$86,643, which was appropriately credited to income.

**SUMMARY OF TRANSACTIONS IN
MARKETABLE SECURITIES *concluded***
FOR THE YEAR ENDED DECEMBER 31, 1963

SOLD - <i>concl'd</i>		PROCEEDS	LEDGER AMOUNT
\$ 1,000,000	United States of America 4½% Treasury Notes due November 15, 1963	\$ 1,007,344	\$ 999,500
5,000,000	United States of America 4½% Treasury Notes due November 15, 1964	5,073,438	4,987,500
9,000	shares Cities Service Co. \$2.25 Cumulative Convertible Preference (No Par)	573,634	513,880
90,000	" Freeport Sulphur Co. Common (Par \$10)	2,202,136	2,231,878
30,000	" National Lead Co. Common (Par \$5)	2,153,694	2,121,118
8,695	" Standard Oil Co. (New Jersey) Capital (Par \$7)	625,005	625,005
	Fractional shares	190	124
		<u>\$ 21,571,883</u>	<u>\$ 21,398,839</u>
REDEEMED AT MATURITY:			
\$ 9,500,000	United States of America Treasury Bills	<u>\$ 9,433,450*</u>	<u>\$ 9,433,450</u>
OTHERWISE DISPOSED OF:			
\$ 6,000,000	United States of America 2½% Treasury Bonds due August 15, 1963 exchanged for a like amount of 3½% Treasury Notes due February 15, 1967	\$ 5,973,575	\$ 5,967,575
4,000,000	United States of America 3½% Treasury Certificates of Indebtedness due August 15, 1963 exchanged for a like amount of 3½% Treasury Notes due February 15, 1967	4,002,047	4,002,047
89,058	shares Standard Oil Co. (New Jersey) Capital (Par \$7) exchanged for 122,045 shares Ford Motor Co. Common (Par \$2.50)	5,398,216	455,846
28,000	" Tennessee Corporation Common (Par \$1.25) exchanged under Plan of Reorganization for 25,200 shares Cities Service Co. \$2.25 Cumulative Convertible Preference (No Par)	1,438,865	1,438,865
		<u>\$ 16,812,703</u>	<u>\$ 11,864,333</u>

* Proceeds of U. S. A. Treasury Bills sold or redeemed were augmented by the sum of \$86,643, which was appropriately credited to income.

SCHEDULE OF MARKETABLE SECURITIES

DECEMBER 31, 1963

BONDS	PAR	LEDGER AMOUNT	MARKET VALUE
<i>United States Government Obligations:</i>			
Treasury Bills:			
January 9, 1964	\$ 1,000,000	\$ 997,390	\$ 997,390
March 12, 1964	5,000,000	4,955,406	4,955,406
Treasury Bonds:			
2½%-June 15, 1962-67	11,200,000	11,058,763	10,738,000
3½%-May 15, 1968	1,000,000	995,000	992,812
2½%-December 15, 1964-69	12,000,000	11,556,562	11,047,500
Treasury Notes:			
3½%-November 15, 1965	2,000,000	2,000,000	1,984,375
4%-August 15, 1966	7,800,000	7,829,384	7,809,750
3½%-February 15, 1967	15,000,000	14,946,497	14,812,500
	<u>55,000,000</u>	<u>54,339,002</u>	<u>53,337,733</u>
<i>Other Bonds:</i>			
American Telephone & Telegraph Co. 3½% 34 yr. Deb. July 1, 1990	2,000,000	2,043,737	1,830,000
Dallas Power & Light Co. 4¼% 1st Mtge. December 1, 1986	500,000	503,253	485,000
General Motors Acceptance Corp. 5% 20 yr. Deb. August 15, 1977	1,000,000	975,000	1,053,750
Illinois Bell Telephone Co. 4¼% 1st Mtge. Series "E" March 1, 1988	1,000,000	1,011,066	975,000
International Bank for Reconstruction and Development 3½% October 15, 1971	1,000,000	980,000	952,500
Michigan Bell Telephone Co. 4¾% 35 yr. Deb. December 1, 1991	1,000,000	1,018,143	970,000
The Mountain States Telephone & Telegraph Co. 4¾% 31 yr. Deb. February 1, 1988	1,000,000	1,010,096	992,500
Pacific Gas & Electric Co. 4½% 1st and Ref. Mtge. "AA" December 1, 1986	1,000,000	1,011,509	1,010,000
Public Service Electric & Gas Company 4¾% 1st and Ref. Mtge. November 1, 1986	1,000,000	1,009,655	992,500
	<u>9,500,000</u>	<u>9,562,459</u>	<u>9,261,250</u>
Total Bonds	<u>\$64,500,000</u>	<u>\$ 63,901,461</u>	<u>\$ 62,598,983</u>

SCHEDULE OF MARKETABLE SECURITIES *continued*

DECEMBER 31, 1963

STOCKS	SHARES	LEDGER AMOUNT	MARKET VALUE
American Electric Power Co., Inc. (Par \$6.50)	128,536	\$ 1,074,602	\$ 5,189,641
American Smelting & Refining Co. (No Par)	33,000	1,894,808	2,772,000
American Telephone & Telegraph Co. Cap. (Par \$33½)	74,250	3,178,621	10,839,813
Christiana Securities Co. (Par \$1.25)	30,000	3,922,045	6,570,000
Cities Service Co. \$2.25 Cum. Conv. Pref. (No Par)	16,200	924,985	929,475
Consolidated Natural Gas Co. Cap. (Par \$10)	300,000	4,800,180	19,050,000
Consumers Power Co. (No Par)	34,700	1,651,630	1,574,512
Continental Insurance Co. Cap. (Par \$5)	28,875	914,713	1,595,344
Continental Oil Co. Cap. (Par \$5)	300,000	2,015,418	18,150,000
Corning Glass Works (Par \$5)	30,000	3,704,042	6,315,000
Crown Zellerbach Corporation (Par \$5)	24,750	591,168	1,355,062
Dow Chemical Co. (Par \$5)	51,448	2,527,734	3,549,912
First National Bank of Chicago (Par \$20)	50,250	1,169,896	3,731,063
Ford Motor Co. (Par \$2.50)	352,045	15,448,216	17,558,245
General Electric Co. (Par \$5)	72,000	2,059,165	6,273,000
General Motors Corp. (Par \$1½)	48,166	2,676,522	3,787,052
Goodrich, B. F. Co. (Par \$10)	50,000	1,839,893	2,587,500
Hanna Mining Co. (Par \$1)	2,010	246,585	241,200
Hartford Fire Insurance Co. Cap. (Par \$5)	102,000	2,178,528	6,744,750
Hooker Chemical Corp. (Par \$5)	57,160	2,129,640	2,122,065
Inland Steel Co. (No Par)	30,000	749,508	1,327,500
Insurance Company of North America Cap. (Par \$5)	50,000	2,411,908	4,650,000
International Business Machines Corp. (Par \$5)	13,050	671,546	6,616,350
International Nickel Co. of Canada, Ltd. (No Par)	110,000	2,289,970	7,548,750
International Paper Co. (Par \$2.50)	236,402	2,360,350	7,594,425
Kennecott Copper Corporation (No Par)	30,000	1,756,180	2,163,750
Marathon Oil Co. (No Par)	212,241	3,458,384	11,938,556
McGraw-Edison Company (Par \$1)	41,600	1,635,791	1,549,600
Minnesota Mining & Mfg. Co. (No Par)	11,100	719,043	717,337
Monsanto Chemical Co. (Par \$2)	35,353	792,466	2,213,982
National Steel Corp. (Par \$5)	50,000	1,983,371	2,425,000
National Union Fire Insurance Co. (Par \$5)	32,000	1,374,434	1,376,000
Peoples Gas Light & Coke Co. (No Par)	67,200	1,057,374	3,477,600
Phelps Dodge Corporation Cap. (Par \$12.50)	45,000	1,186,128	2,761,875

SCHEDULE OF MARKETABLE SECURITIES *concluded*

DECEMBER 31, 1963

STOCKS - <i>concl'd</i>	SHARES	LEDGER AMOUNT	MARKET VALUE
Philips Gloeilampenfabrieken (Par Nf 25)	23,100	\$ 921,375	\$ 935,550
Pittsburgh Plate Glass Co. (Par \$10)	40,800	2,503,536	2,335,800
Scott Paper Co. (No Par)	43,300	1,189,479	1,612,925
Security First National Bank (Los Angeles) (Par \$12.50)	23,332	1,655,686	1,898,641
Socony Mobil Oil Co., Inc. Cap. (Par \$15)	300,000	7,778,152	21,712,500
The Southern Company (Par \$5)	26,000	1,016,586	1,426,750
Standard Oil Co. of California Cap. (Par \$6.25)	220,500	1,893,562	13,119,750
Standard Oil Co. (Indiana) Cap. (Par \$25)	1,000,000	14,184,718	63,875,000
Standard Oil Co. (New Jersey) Cap. (Par \$7)	4,619,638	23,126,811	351,092,488
Travelers Insurance Co. Cap. (Par \$5)	25,000	856,385	5,050,000
Union Carbide Corporation (No Par)	30,000	2,973,773	3,615,000
Union Tank Car Co. Cap. (No Par)	100,000	593,187	3,487,500
United States Steel Corporation (Par \$16 $\frac{2}{3}$)	20,000	822,293	1,062,500
Upjohn Company (Par \$1)	30,000	1,387,148	1,590,000
Western Bancorporation Cap. (Par \$2)	45,000	1,424,420	1,743,750
Westinghouse Electric Corporation (Par \$6.25)	60,000	1,998,423	2,032,500
Weyerhaeuser Co. (Par \$7.50)	140,100	2,279,684	4,623,300
Total Stocks		\$143,995,042	\$658,009,813

S U M M A R Y

Bonds:	LEDGER AMOUNT	MARKET VALUE
U.S. Government Obligations	\$ 54,339,002	\$ 53,337,733
Other Bonds	9,562,459	9,261,250
	<hr/> 63,901,461	<hr/> 62,598,983
Stocks	143,995,042	658,009,813
	<hr/> \$207,896,503	<hr/> \$720,608,796

APPROPRIATIONS AND PAYMENTS

Amounts in the first column marked () are allocations and grants in aid from prior year appropriations*

<i>Medical and Natural Sciences</i>	APPROPRIATED OR ALLOCATED DURING 1963	BALANCE FROM PRIOR YEAR APPROPRIATIONS	1963 PAYMENTS
ARGENTINA			
Buenos Aires, University of			
Faculties of Medical Sciences, Pharmacy and Chemistry, and Natural and Exact Sciences	\$ —	\$ 1,594	\$ 1,594
Córdoba, National University of			
Institute of Pharmacology	—	19,000	12,489
Cuyo, University of			
Faculty of Medical Sciences	—	88,166	71,018
National Council of Scientific and Technical Research			
Research in Argentine universities	180,000	—	80,000
AUSTRALIA			
Australian National University			
Department of Microbiology of the John Curtin School of Medical Research	—	5,301	4,557
Melbourne, University of			
Department of Zoology	—	200	—
Physiology building	—	400	—
Sydney, University of			
Electron microscopy	—	22,600	4,622
Walter and Eliza Hall Institute of Medical Research			
Research program	—	8,704	8,704
AUSTRIA			
Vienna, University of			
Faculty of Medicine	—	579	—
Institute of Biochemistry	—	1,506	—
BELGIUM			
Brussels, University of			
Neurophysiology	—	4,279	3,210

APPROPRIATIONS AND PAYMENTS

<i>Medical and Natural Sciences</i>	APPROPRIATED OR ALLOCATED DURING 1963	BALANCE FROM PRIOR YEAR APPROPRIATIONS	1963 PAYMENTS
BRAZIL			
Bahia, University of			
Human genetics	\$ —	\$ 2,474	\$ 2,363
Biology Institute of Bahia			
Animal virology	—	5,862	4,374
Brazil, University of			
Institute of Biophysics	—	8,474	6,681
Institute of Microbiology	—	23,840	11,530
Brazilian Institute of Education, Science, and Culture			
Science Development Program at the University of São Paulo	—	7,559	2,732
Campaign for the Improvement of Higher Education Personnel			
Support of research	—	70,236	24,434
Faculty of Philosophy, Sciences, and Letters of Rio Claro			
Zoology and genetics	—	380	61
Genetics Research in Brazil	67,419	—	21,086
Institute of Biology and Technological Research, Curitiba			
General support	—	11,697	11,663
Minas Gerais, University of			
Faculty of Medicine	—	170,316	81,595
Institute of General Biology	15,000	—	—
Paraná, University of			
Catalogue of Neotropical bees	25,000	—	7,577
Institute of Biochemistry	—	308	—
Paulista School of Medicine			
General development	—	25,020	1,166
Recife, University of			
Faculty of Medicine	—	39,095	—
Rio Grande do Sul, University of			
Department of Therapeutics	—	1,341	—
Faculty of Medicine and Institute of Natural Sciences	—	65,944	40,235

APPROPRIATIONS AND PAYMENTS

<i>Medical and Natural Sciences</i>	APPROPRIATED OR ALLOCATED DURING 1963	BALANCE FROM PRIOR YEAR APPROPRIATIONS	1963 PAYMENTS
Faculty of Philosophy	\$ —	\$ 2,090	\$ 452
Human genetics	—	5,341	1,810
São Paulo, University of			
Biochemistry of chromosomes	—	30,582	11,124
Cell physiology	—	11,522	5,557
Drosophila population genetics	—	1,863	1,863
Faculty of Medicine, Ribeirão Preto	—	96,817	38,344
Faculty of Philosophy, Sciences, and Letters	—	6,403	—
Human genetics	—	6,021	6,021
Institute of Atomic Energy	24,000	—	23,832
Laboratory of Electron Microscopy	—	2,737	1,242
Population genetics	—	3,752	—
Special Public Health Service Foundation			
Evandro Chagas Institute	—	11,248	11,248
CANADA			
McGill University			
Biochemistry	—	941	—
CEYLON			
Ceylon, University of			
Faculty of Medicine	—	6,237	—
CHILE			
Catholic University of Chile			
Science and medicine	—	53,609	21,871
Chile, University of			
Faculty of Medicine	80,000	22,932	33,985
Interuniversity Commission of Faculties of Medicine	—	6,388	1,340
Virus laboratory	—	50,000	45,708
COLOMBIA			
University of the Andes			
School of Sciences	—	523,891	154,765
Cell physiology	—	3,900	3,900

APPROPRIATIONS AND PAYMENTS

<i>Medical and Natural Sciences</i>	APPROPRIATED OR ALLOCATED DURING 1963	BALANCE FROM PRIOR YEAR APPROPRIATIONS	1963 PAYMENTS
CONGO			
Lovanium University			
Medical School	\$ —	\$ 25,000	\$ 25,000
Medical School and School of Agriculture	138,570	—	—
Medical School and University Hospital	—	9,776	—
School of Nursing	—	25,000	25,000
DENMARK			
Carlsberg Foundation			
Biochemistry	—	9,471	7,888
Copenhagen, University of			
Genetics	—	1,041	—
EL SALVADOR			
El Salvador, University of			
Departments of Preventive Medicine and Pathology	25,400	—	13,513
Faculty of Medicine	—	21,767	11,945
FINLAND			
Helsinki, University of			
Electron microscope	—	2,463	602
Virology	—	34,777	11,408
Turku, University of			
Medical School	—	10,800	5,670
FRANCE			
Aix-Marseilles, University of			
Institute of Biological Chemistry	—	12,679	822
National Center of Scientific Research			
Laboratory of Physiological Genetics	—	22,937	11,326
GERMANY			
Munich, University of			
Animal behavior	—	7,875	3,689

APPROPRIATIONS AND PAYMENTS

<i>Medical and Natural Sciences</i>	APPROPRIATED OR ALLOCATED DURING 1968	BALANCE FROM PRIOR YEAR APPROPRIATIONS	1968 PAYMENTS
INDIA			
All India Institute of Medical Sciences			
Basic science departments and clinical research laboratories	\$ 200,000	\$ —	\$ 19,974
Preclinical and clinical departments	—	12,910	11,852
Scholarship program	—	18,159	18,159
Teaching hospital	—	500,000	103,085
Calcutta School of Tropical Medicine			
Virology	—	1,471	518
Christian Medical College, Vellore			
Training program	—	10,438	2,622
Council of Scientific and Industrial Research			
National Chemical Laboratory	—	39,070	38,998
Indian Cancer Research Centre			
Biophysics	—	16,650	—
Scientific equipment and supplies	—	2,972	2,377
Indian Council of Medical Research			
Fellowships	—	12,843	—
Nutrition Research Laboratories	—	569	569
Indian Institute of Science, Bangalore			
Department of Biochemistry	—	6,480	6,446
Departments of Biochemistry and Pharmacology	—	1,061	665
Lucknow, University of			
King George's Medical College and the Faculty of Science	—	98,887	25,466
Library of King George's Medical College	—	38	—
Residency program at King George's Medical College	—	32,968	18,422
Seth Gordhandas Sunderdas Medical College			
General development	—	10,748	10,568
ISRAEL			
Government Hospital, Tel Hashomer			
Human genetics	—	1,447	1,447

APPROPRIATIONS AND PAYMENTS

<i>Medical and Natural Sciences</i>	APPROPRIATED OR ALLOCATED DURING 1963	BALANCE FROM PRIOR YEAR APPROPRIATIONS	1963 PAYMENTS
Hebrew University of Jerusalem	\$ —	\$ 14,560	\$ 9,678
Arthropod-borne viruses	\$ —	\$ 14,560	\$ 9,678
ITALY			
Bari, University of			
Experimental embryology and histology	—	162	—
Milan, University of			
Institute of Genetics	—	12,015	5,800
Padua, University of			
Institute of Organic Chemistry	—	372	372
Palermo, University of			
Experimental embryology and developmental physiology	—	242	—
Institutes of Zoology and Comparative Anatomy	—	26,720	9,847
Parma, University of			
Biology	—	253	—
Human genetics	—	15,000	8,250
Pisa, University of			
Institute of Physiology	—	21,778	5,762
Rome, University of			
Institute of Biological Chemistry	—	19,069	1,780
Institute of Genetics	—	26,000	6,500
Institute of Pharmaceutical Chemistry and Toxicology	—	11,257	5,439
Turin, University of			
Human genetics	—	59,113	8,801
JAMAICA			
West Indies, University of the			
Department of Chemistry	—	150,705	57,602
JAPAN			
Keio University			
Department of Biochemistry	—	75,000	35,631
Japan Library School	—	30,770	15,567
Kyoto University			
Faculty of Medicine — behavioral study of Indian monkeys	—	2,370	2,370

APPROPRIATIONS AND PAYMENTS

	APPROPRIATED OR ALLOCATED DURING 1963	BALANCE FROM PRIOR YEAR APPROPRIATIONS	1963 PAYMENTS
<i>Medical and Natural Sciences</i>			
Department of Medical Chemistry	\$ —	\$ 2,480	\$ 1,751
National Institute of Genetics, Misima			
Human genetics	—	22,444	15,813
National Institute of Health, Misima			
Department of Virology and Rickettsiology	—	11,306	8,825
Osaka University			
Institute for Protein Research	—	11,025	4,635
Tokyo, University of			
Institute of Applied Microbiology	—	49	—
KENYA			
Ministry of Health			
Rural health demonstration and training center	—	18,083	—
MALAYSIA			
Singapore, University of			
Department of Bacteriology	—	50,870	8,120
MEXICO			
Children's Hospital, Mexico City			
Medical education and research	—	98,000	46,000
Guadalajara, University of			
Faculty of Medicine	—	103,367	39,467
Mexico, National University of			
Department of Biochemistry	—	37,861	18,948
Department of Pathology	—	29,520	27,992
Institute of Chemistry	—	18,645	17,591
National Institute of Cardiology			
Experimental medicine	—	25,034	25,000
National Institute of Nutrition			
Biochemistry and nutrition	—	18,743	18,613
Hospital for Nutritional Diseases	—	107,866	36,065
San Luis Potosí, University of			
School of Medicine	—	14,776	8,117

APPROPRIATIONS AND PAYMENTS

<i>Medical and Natural Sciences</i>	APPROPRIATED OR ALLOCATED DURING 1963	BALANCE FROM PRIOR YEAR APPROPRIATIONS	1963 PAYMENTS
NEW ZEALAND			
Auckland, University of			
Biochemistry	\$ 5,000	\$ —	\$ —
NORWAY			
Oslo, University of			
Laboratory of Human Genetics	—	2,108	—
PAKISTAN			
Dacca, University of			
Biochemistry	—	16,000	9,870
PERU			
Peruvian University of Medical and			
Biological Sciences			
Faculty of Medicine	100,000*	33,127	88,405
University of San Marcos			
Faculty of Medicine	—	55,300	10,729
POLAND			
Polish Academy of Sciences			
Nencki Institute of Experimental Biology	—	17,580	14,819
SOUTH AFRICA			
South African Institute for Medical			
Research			
Arthropod-borne Virus Research Unit	4,000	9,208	2,466
SOUTHERN RHODESIA			
Rhodesia and Nyasaland, University			
College of			
Department of Zoology	—	148,088	54,500
SWEDEN			
Karolinska Institute			
Department of Biochemistry	—	18,844	15,200
Neurophysiology	—	6,000	6,000

APPROPRIATIONS AND PAYMENTS

<i>Medical and Natural Sciences</i>	APPROPRIATED OR ALLOCATED DURING 1963	BALANCE FROM PRIOR YEAR APPROPRIATIONS	1963 PAYMENTS
Lund, University of Institute of Genetics	\$ —	\$ 18,250	\$ 12,750
SWITZERLAND			
Geneva, University of Human genetics	—	779	—
TANGANYIKA			
Ministry of Health and Labour Training program for rural physicians	3,000	152,000	87,177
TRINIDAD			
West Indies, University of the Trinidad Regional Virus Laboratory	—	275,000	90,573
TURKEY			
Ankara, University of Research Institute of Child Health	—	20,779	6,731
School of Nursing and Health Sciences	—	80,876	75,406
UNITED KINGDOM			
Association for the Study of Medical Education, London General support	—	6,054	5,603
Cambridge, University of Biochemistry of reproduction	15,000	6,367	11,367
Biologically important molecules	—	11,075	7,500
Department of Zoology	—	66,500	20,165
Psychological Laboratory	—	6,146	—
Edinburgh, University of Graduate medical education	—	5,225	(—224)
London, University of Bilharziasis research	—	103,091	25,209
Biochemical genetics research at King's College	—	333	—
Department of Biophysics of King's College	60,000	15,053	15,053

APPROPRIATIONS AND PAYMENTS

<i>Medical and Natural Sciences</i>	APPROPRIATED OR ALLOCATED DURING 1963	BALANCE FROM PRIOR YEAR APPROPRIATIONS	1963 PAYMENTS
London, University of (cont'd)			
Department of Botany of the Imperial College of Science and Technology	\$ —	\$ 475	\$ —
Human genetics research at University College	—	27,392	7,642
Mammalian genetics research at University College	14,000	4,673	11,000
Nutrition studies at the London School of Hygiene and Tropical Medicine	—	15,380	18,368
Marine Biological Association of the United Kingdom			
Equipment	—	1,197	1,197
Medical Research Council			
Fellowships	25,000	32,291	31,701
Molecular biology	—	14,378	3,629
North Wales, University College of Department of Zoology	—	22	—
Oxford, University of			
Biochemistry	—	18,204	9,160
Biologically important compounds	—	8,405	7,245
Laboratory of Chemical Crystallography	—	5,819	5,296
Neurohistology	—	1,617	1,309
South West Metropolitan Regional Hospital Board			
Neuropsychiatry	—	2,005	(—279)
Strangeways Research Laboratory			
Experimental biology	—	12,500	12,500
Victoria University of Manchester			
Department of Organic Chemistry	—	5,015	3,462
Welsh Regional Hospital Board			
Neuropsychiatry	—	3,271	—
UNITED STATES			
Association of American Medical Colleges			
Division of International Medical Education	—	175,000	49,152
Secretariat	75,000	—	15,000

APPROPRIATIONS AND PAYMENTS

	APPROPRIATED OR ALLOCATED DURING 1963	BALANCE FROM PRIOR YEAR APPROPRIATIONS	1963 PAYMENTS
<i>Medical and Natural Sciences</i>			
California, University of, Berkeley	\$ —	\$ 8,595	\$ —
Virus Laboratory	\$ —	\$ 8,595	\$ —
California College of Medicine	—	200,000	50,000
General development	—	200,000	50,000
Chicago, University of	—	—	—
Experimental ecology	—	1,526	—
Section of Nuclear Medicine	—	300,745	65,722
Columbia University	—	—	—
Institute of Nutrition Sciences	45,000	—	7,500
Cornell University	—	—	—
Biochemistry	—	19,387	—
Orientation course for foreign medical fellows	—	77,044	25,000
Duke University	—	—	—
School of Nursing	—	35,000	25,000
Harvard University	—	—	—
Center for Population Studies	600,000	—	—
Department of Dermatology	—	15,251	15,000
Family medical care	—	17,883	—
Medical care	—	16,700	16,700
Nutritional diseases	—	30,000	30,000
Radiological health	—	277,600	194,950
Haverford College	—	—	—
Biology	—	175,000	175,000
Johns Hopkins University	—	—	—
Hospital obstetrical care	—	90,000	20,975
Long Island Biological Association, Inc.	—	—	—
Annual symposia	—	2,390	(-159)
Biology	85,000	—	17,000
Marine Biological Laboratory, Woods Hole	—	—	—
General support	—	35,000	—
Massachusetts Institute of Technology	—	—	—
Psychology	75,000	—	75,000
National Academy of Sciences – National Research Council	—	—	—
Genetics research in Japan	—	27,440	—

APPROPRIATIONS AND PAYMENTS

<i>Medical and Natural Sciences</i>	APPROPRIATED OR ALLOCATED DURING 1963	BALANCE FROM PRIOR YEAR APPROPRIATIONS	1963 PAYMENTS
National Research Council			
Committee for Research in Problems of Sex	\$ —	\$ 5,115	\$ (—1,052)
Nutrition	—	48,679	46,726
New York Botanical Garden			
Basic plant biochemistry	—	7,000	—
New York University — Bellevue Medical Center			
Industrial and public health aspects of radiation hazards	—	381,982	34,434
Pittsburgh, University of Radiation health	—	304,692	38,955
Population Council, Inc.			
Population problems	—	175,000	75,894
Puerto Rico, Department of Health of Regionalization of medical and public health facilities	—	38,855	—
Puerto Rico, University of School of Medicine	—	60,000	40,000
St. Luke's Hospital			
Nutrition and Metabolic Research Center	271,000	—	271,000
Society of the New York Hospital			
Study of public health nursing	—	3,899	—
Stanford University			
Natural product chemistry	110,000	55,000	19,606
School of Medicine	—	2,772,600	1,178,364
Tennessee, University of			
Exchange program with the Faculty of Medicine, University of Valle, Colombia	—	37,500	12,500
Tulane University of Louisiana			
Chemical pathology studies in the School of Medicine	—	64	(—255)
Studies of basic natural and biological sciences, in the School of Medicine	—	162,000	28,425
Utah, University of			
Enzyme chemistry	—	177	—
Yale University			
Department of Epidemiology and Public Health — building	—	1,500,000	—

APPROPRIATIONS AND PAYMENTS

<i>Medical and Natural Sciences</i>	APPROPRIATED OR ALLOCATED DURING 1963	BALANCE FROM PRIOR YEAR APPROPRIATIONS	1963 PAYMENTS
URUGUAY			
Research Institute of Biological Sciences			
Fellowships and equipment	\$ —	\$ 19,243	\$ 6,822
University of the Republic			
Obstetrical physiology	—	13,895	11,547
YUGOSLAVIA			
Ljubljana, University of			
Institute of Microbiology	—	30	—
Yugoslav Academy of Sciences and Arts			
Institute for Medical Research, and School of Public Health of the University of Zagreb	—	191	—
Other Appropriations for Later Release	232,581	998,000	—
SPECIAL PROGRAMS			
Cooperative Virus Research Program			
Field staff	470,150	557,137	469,499
California laboratory	35,500	49,255	30,449
New York Virus Laboratories	516,500	503,367	394,885
Trinidad Regional Virus Laboratory	—	82,819	41,928
Belém (Brazil) Virus Laboratory	30,000	50,327	40,940
Cali (Colombia) Virus Laboratory	27,970	78,984	40,636
Poona (India) Virus Research Centre	62,460	138,546	83,399
General Development			
Field staff	617,400	278,271	225,117
Rio de Janeiro office	—	41,436	5,584
Cali (Colombia) office	72,820	118,864	60,095
Ballabgarh (India) office	108,000	—	—
New Delhi office	42,450	52,577	37,671
Contingent Fund	65,000	74,000	—
Fellowships and Scholarships			
Administered by The Rockefeller Foundation	—	2,047,373	818,847
Appropriated for 1964 allocation	1,000,000	—	—

APPROPRIATIONS AND PAYMENTS

<i>Medical and Natural Sciences</i>	APPROPRIATED OR ALLOCATED DURING 1963	BALANCE FROM PRIOR YEAR APPROPRIATIONS	1963 PAYMENTS
Grants in Aid			
Regular and special programs	\$ 680,620*	\$ 950,504	\$ 704,036
Appropriated for 1964 allocation	750,000	—	—
TOTAL — Medical and Natural Sciences	\$ 6,928,840	\$17,750,351	\$ 7,752,514

Agricultural Sciences

BOLIVIA

University of San Simón

Faculty of Agronomy	\$ —	\$ 22,042	\$ 19,582
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BRAZIL

Minas Gerais, University of

School of Economics	—	10,000	10,000
School of Veterinary Medicine	—	4,651	4,039

Rio Grande do Sul, University of

Research on forage crops	—	15,648	—
School of Agronomy and Veterinary Medicine	—	6,314	6,041

São Paulo, University of

Luiz de Queiroz College of Agriculture	—	34,209	17,167
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São Paulo State Secretariat of Agriculture

Animal Nutrition Research Center	—	57,358	3,064
Biological Institute	—	4,380	3,664
Plant virus research at the Institute of Agronomy	—	473	384
Research equipment and materials for the Institute of Agronomy	—	69,771	17,897

CHILE

Catholic University of Chile

Faculty of Agronomy	96,000	20,759	12,684
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Concepción, University of

Faculty of Agronomy	—	85,000	15,060
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Ministry of Agriculture

Central Library	—	688	85
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APPROPRIATIONS AND PAYMENTS

	APPROPRIATED OR ALLOCATED DURING 1963	BALANCE FROM PRIOR YEAR APPROPRIATIONS	1963 PAYMENTS
Agricultural Sciences			
COLOMBIA			
Colombia, National University of			
Diagnostic and research laboratory	\$ —	\$ 133,940	\$ 443
Faculty of Agronomy	—	3,814	57
Faculty of Veterinary Medicine	—	290	—
Ministry of Agriculture			
Department of Agricultural Research	—	44,536	—
CONGO			
Lovanium University			
Institute of Agriculture	—	13,150	12,701
COSTA RICA			
Inter-American Institute of Agricultural Sciences			
Graduate studies in animal husbandry	—	32	—
Secretariat for the Latin American Association of Plant Science	—	27,500	11,000
Latin American Association of Plant Science			
Support of the sixth symposium of the association	25,000	—	5,691
ECUADOR			
Central University			
Faculty of Agronomy and Veterinary Medicine	—	17,000	3,875
National Institute of Agricultural Research			
Support	—	273,000	73,563
ETHIOPIA			
Haile Sellassie I University			
Central Agricultural Experiment Station	50,000	—	—
GHANA			
Kwame Nkrumah University of Science and Technology			
School of Agriculture	—	38,750	—

APPROPRIATIONS AND PAYMENTS

<i>Agricultural Sciences</i>	APPROPRIATED OR ALLOCATED DURING 1963	BALANCE FROM PRIOR YEAR APPROPRIATIONS	1963 PAYMENTS
GUATEMALA			
National Agricultural Institute			
Development	\$ —	\$ 30,650	\$ 2,025
University of San Carlos			
Institute of Animal Husbandry	—	203,395	122,119
HONDURAS			
Pan American Agricultural School			
Development	—	29,204	24,596
INDIA			
Agricultural College and Research Institute, Coimbatore			
Equipment	—	46,568	7,831
Central Rice Research Institute			
Equipment and library materials	—	1,616	1,575
Indian Agricultural Research Institute			
Library	—	39,557	4,586
Ministry of Agriculture of West Bengal			
West Bengal State College and Agricultural Research Institute	—	26,131	25,326
Ministry of Food and Agriculture			
Central Potato Research Institute	—	12,385	1,919
Punjab Agricultural University			
Support	320,000	—	105,100
Uttar Pradesh Agricultural University			
Agricultural Experiment Station	—	166,327	71,519
INDONESIA			
Indonesia, University of			
Faculty of Veterinary Science	—	4,150	3,967
ISRAEL			
Hebrew University of Jerusalem			
Department of Botany	—	64,136	—
National Physical Laboratory			
Research in solar energy	—	27,584	27,527

APPROPRIATIONS AND PAYMENTS

<i>Agricultural Sciences</i>	APPROPRIATED OR ALLOCATED DURING 1963	BALANCE FROM PRIOR YEAR APPROPRIATIONS	1963 PAYMENTS
ITALY			
Catholic University of the Sacred Heart			
Institute of Plant Genetics	\$ —	\$ 2,475	\$ 2,475
Food and Agriculture Organization of the United Nations			
Training awards for Middle East scientists	—	92,033	48,000
JAPAN			
Hokkaido University			
Faculty of Agriculture	—	28,700	21,706
Japan Women's University			
Graduate School in home economics	—	7,443	7,443
Kyoto University			
Faculty of Agriculture	—	25,140	12,580
Ministry of Agriculture and Forestry			
Research on the use of upland soils	—	20,065	20,065
Nagoya University			
Department of Agricultural Chemistry	—	19,155	18,241
National Institute of Genetics, Misima			
Studies on the origin of cultivated rice	—	43,038	20,508
Obihiro Zootechnical University			
Research in forage crop management and animal nutrition	—	114	—
Tohoku University			
Faculty of Agriculture	—	24,121	11,162
Tokugawa Institute of Biological Research			
Mass cultivation of algae	—	5,000	5,000
Tokyo, University of			
Faculty of Agriculture	—	649	—
KENYA			
East African Common Services Organization			
East African Agriculture and Forestry Research Organization	100,000	38,925	17,189
Muguga Library	15,000	—	15,000

APPROPRIATIONS AND PAYMENTS

<i>Agricultural Sciences</i>	APPROPRIATED OR ALLOCATED DURING 1963	BALANCE FROM PRIOR YEAR APPROPRIATIONS	1963 PAYMENTS
Egerton College			
General development	\$ 75,000	\$ —	\$ 39,968
Ministry of Agriculture, Animal Husbandry, and Water Resources			
Plant Breeding Station	86,000	54,015	40,411
Siriba Training College	—	29,960	28,200
MEXICO			
Mexico, National University of			
School of Veterinary Medicine	—	16,717	13,883
National School of Agriculture			
Graduate School	120,000*	9,224	127,182
Sonora, University of			
School of Agriculture and Animal Husbandry	—	7,102	7,102
State of Veracruz, University of the			
Faculty of Veterinary Medicine and Animal Husbandry	—	42,000	5,874
Technological Institute and School of Advanced Studies of Monterrey			
School of Agriculture	—	50,553	37,032
NATIONAL REPUBLIC OF CHINA, TAIWAN			
National Taiwan University			
College of Agriculture	—	7	—
NIGERIA			
Ahmadu Bello University			
Cereal research program	—	330,000	123,000
PERU			
Agrarian University			
Postgraduate instruction and research	—	48,048	28,124
Ministry of Agriculture			
Potato improvement	—	15,151	5,151

APPROPRIATIONS AND PAYMENTS

<i>Agricultural Sciences</i>	APPROPRIATED OR ALLOCATED DURING 1963	BALANCE FROM PRIOR YEAR APPROPRIATIONS	1963 PAYMENTS
University of San Marcos			
Buildings for the Faculty of Veterinary Medicine	\$ —	\$ 16,309	\$ 10,455
Postgraduate training in veterinary medicine	138,000	—	1,622
Radiobiology laboratory and housing	—	814	—
Toward salaries in the Faculty of Veterinary Medicine	—	7,451	—
PHILIPPINES			
International Rice Research Institute			
Operating costs	625,000	—	—
POLAND			
College of Agriculture, Cracow			
Research in plant and animal science	—	22,513	—
Institute of Plant Protection, Poznan			
Equipment for the virus laboratory	—	1,307	279
Veterinary Institute of Pulawy			
Equipment for virus research	—	27,545	—
SOUTHERN RHODESIA			
Rhodesia and Nyasaland, University			
College of			
Department of Agriculture	—	39,379	—
SUDAN			
Khartoum, University of			
Faculties of Agriculture, Science, and Veterinary Science	—	26,963	7,129
TRINIDAD			
West Indies, University of the			
Faculty of Agriculture	—	75,000	—
UNITED KINGDOM			
London, University of			
Imperial College of Science and Technology	—	3,131	—

APPROPRIATIONS AND PAYMENTS

<i>Agricultural Sciences</i>	APPROPRIATED OR ALLOCATED DURING 1963	BALANCE FROM PRIOR YEAR APPROPRIATIONS	1963 PAYMENTS
Rothamsted Experimental Station	\$ —	\$ 6,605	\$ 6,605
Research in protein extraction	\$ —	\$ 6,605	\$ 6,605
UNITED STATES			
Alaska, University of			
Alaska Agricultural Experiment Station	—	13,000	13,000
Association of State Universities and Land-Grant Colleges			
Establishment of a coordinating office	60,000	—	18,418
California Institute of Technology			
Earhart Laboratory for Plant Research	—	45,000	30,000
Cornell University			
New York State College of Agriculture	—	40,000	10,000
Duke University			
School of Forestry	—	36,027	12,006
Harvard University			
Department of Biology	—	14,707	14,707
Hawaii, University of			
Scholarships	—	15,768	10,227
Kansas State University of Agriculture and Applied Science			
Department of Flour and Feed Milling Industries	—	480	—
Louisiana State University			
Department of Agronomy	—	12,000	—
Minnesota, University of			
Institute of Agriculture	—	5,481	—
National Academy of Sciences – National Research Council			
Division of Biology and Agriculture	15,000	—	7,500
Nebraska, University of			
College of Agriculture	—	44,872	5,400
North Carolina, University of			
Institute of Statistics	—	25,001	15,000
State College of Agriculture and Engineering	—	75,000	25,000

APPROPRIATIONS AND PAYMENTS

<i>Agricultural Sciences</i>	APPROPRIATED OR ALLOCATED DURING 1963	BALANCE FROM PRIOR YEAR APPROPRIATIONS	1963 PAYMENTS
Pan American Sanitary Bureau			
Institute of Nutrition of Central America and Panama	\$ 5,000	\$ 12,500	\$ 17,490
Texas A & M University			
Department of Animal Husbandry	—	48,600	21,684
Training program for foreign students	—	271	(—93)
Wisconsin, University of			
Solar Energy Laboratory	—	106,119	47,101
Special appointment of senior staff to African universities	50,000	—	—
Other Appropriations for Later Release	—	1,755,000	—

SPECIAL PROGRAMS

Conference on the organization of scientific research in Africa	—	4,439	(—1,075)
Documentary film of the cooperative program in Agricultural Sciences	—	12,088	2,823
Cooperative Programs			
Field staff	1,819,300	1,844,168	1,428,819
International Food Crop Improvement Program	—	179,117	153,442
International Center for Corn and Wheat Improvement	1,000,000	—	—
Mexican Agricultural Program	245,000	364,313	276,565
State of México extension program	—	11,009	8,422
Chilean Agricultural Program	145,000	313,635	202,932
Chilean research stations	—	146,027	26,048
Colombian Agricultural Program	200,000	317,853	183,151
Indian Agricultural Program	290,000	353,862	242,048
New Delhi office	42,450	52,577	37,705
Contingent Fund	35,000	5,000	—
Fellowships and Scholarships			
Administered by The Rockefeller Foundation	—	2,525,458	1,296,951
Appropriated for 1964 allocation	1,500,000	—	—

APPROPRIATIONS AND PAYMENTS

<i>Agricultural Sciences</i>	APPROPRIATED OR ALLOCATED DURING 1963	BALANCE FROM PRIOR YEAR APPROPRIATIONS	1963 PAYMENTS
Grants in Aid			
Regular and special programs	\$ 587,498*	\$ 475,974	\$ 571,706
Appropriated for 1964 allocation	500,000	—	—
TOTAL — Agricultural Sciences	\$ 8,094,248	\$11,527,006	\$ 5,973,400

Humanities and Social Sciences

ARGENTINA

Buenos Aires, University of

 Research and training seminar on social
 and intellectual history \$ — \$ 13,668 \$ 7,000

Torcuato Di Tella Institute

 International Center for Comparative
 Social Research — 87,000 29,000

 Latin American Center for Advanced
 Music Composition — 156,000 88,777

BRAZIL

Bahia, University of

 Drama School — 266 —

Getulio Vargas Foundation

 Advanced training for Brazilian
 economists — 19,695 10,200

Rio Grande do Sul, University of

 Faculty of Economic Sciences — 21,778 6,801

CANADA

National Ballet Guild of Canada

 National Ballet Company of Canada — 6,131 5,022

CEYLON

Ceylon, University of

 Language teaching — 46,477 3,266

CHILE

Catholic University of Chile

 Economic Research Center — 10,160 4,060

APPROPRIATIONS AND PAYMENTS

<i>Humanities and Social Sciences</i>	APPROPRIATED OR ALLOCATED DURING 1963	BALANCE FROM PRIOR YEAR APPROPRIATIONS	1963 PAYMENTS
Chile, University of			
Center of Graduate Studies on American History	\$ —	\$ 55,932	\$ 32,951
Graduate School of Economics	—	133,625	25,215
Institute of Economic Research	—	3,081	155
COLOMBIA			
Antioquia, University of			
Development of the Inter-American School of Library Science	—	120,457	45,292
Three summer seminars on the development of library training in Latin America	—	29,000	9,000
Colombia, National University of			
Faculty of Sociology	—	13,000	5,000
University of the Andes			
Center for Studies in Economic Development	—	43,366	17,280
FINLAND			
Helsinki, University of			
Research on social changes	—	3,242	3,242
FRANCE			
Fondation des États-Unis			
European Association for American Studies	—	1,058	—
Institute of Applied Economics			
Economic impact of industrialization on certain African countries	32,000	25	16,000
National Foundation of Political Sciences			
Center for the Study of International Relations	37,400	—	13,209
GERMANY			
Berlin, Free University of			
Research on Marxism-Leninism	—	16,900	7,644
German Institute for Economic Research			
East German economic problems	13,000	—	—

APPROPRIATIONS AND PAYMENTS

<i>Humanities and Social Sciences</i>	APPROPRIATED OR ALLOCATED DURING 1963	BALANCE FROM PRIOR YEAR APPROPRIATIONS	1963 PAYMENTS
Munich, University of American Institute	\$ —	\$ 222	\$ —
GHANA			
Ghana, University of Institute of African Studies	8,140*	195	8,026
GREECE			
Athens Technological Institute Community values in the development of metropolitan Athens	—	22,500	22,500
INDIA			
Deccan College Postgraduate and Research Institute Linguistic development and research	—	4,302	40
Delhi, University of Advanced library training	—	161,433	16,762
Comparative studies in Western and Indian music	—	97,715	12,606
Indian School of International Studies Library development and a staff training program	—	153,570	43,430
ISRAEL			
Hebrew University of Jerusalem Research in political theory	—	3,200	—
ITALY			
Turin, University of Institute of Political Science	—	11,250	7,500
JAPAN			
Doshisha University American studies	—	2,000	2,000
Hitotsubashi University Institute of Economic Research	—	4,287	118

APPROPRIATIONS AND PAYMENTS

<i>Humanities and Social Sciences</i>	APPROPRIATED OR ALLOCATED DURING 1963	BALANCE FROM PRIOR YEAR APPROPRIATIONS	1963 PAYMENTS
International Christian University			
Study of the effects of higher education on student values	\$ —	\$ 30,025	\$ 7,989
International House of Japan, Inc.			
Study of Japanese-American relations	—	6,928	—
Kokugakuin University			
Improvement of the library	—	6,870	4,610
Kyoto University			
Development of the social sciences and American studies	—	90	—
Osaka University			
Institute of Social and Economic Research	—	587	—
Tokyo, University of			
American studies	—	1,784	—
Improvement of the main library and the Library of the Faculty of Agriculture	229,000*	69,271	95,538
Institute of International Relations	—	50,000	28,590
Waseda University			
Economics of highway transportation in Japan	—	5,595	—
LEBANON			
American University of Beirut			
Arab studies	—	15,000	230
Department of Political Studies	12,400	—	12,400
LIBERIA			
Cuttington College and Divinity School			
Appointment of staff members in agriculture, chemistry, and education	—	29,619	13,829
MEXICO			
Colegio de México			
Center for International Studies	—	60,000	39,343
Completion of a history of the Americas	4,000	—	4,000
Graduate program in history	—	89,088	23,534
Research in contemporary Mexican history	—	44,930	26,968
Teaching and research in linguistics and Spanish American literature	—	52,200	15,232

APPROPRIATIONS AND PAYMENTS

<i>Humanities and Social Sciences</i>	APPROPRIATED OR ALLOCATED DURING 1963	BALANCE FROM PRIOR YEAR APPROPRIATIONS	1963 PAYMENTS
Mexican Center of Writers			
General support	\$ —	\$ 28,000	\$ 15,000
Nuevo León, University of			
Center for Economic Research	—	75,403	43,923
State of Veracruz, University of the			
Faculty of Humanities	—	25,016	20,677
NATIONAL REPUBLIC OF CHINA, TAIWAN			
Academia Sinica			
Institute of History and Philology	—	7,500	7,500
NETHERLANDS			
Hague Academy of International Law			
Study and research in international law and international relations	—	104,622	29,006
International Institute of Social History			
Research on Marxism-Leninism	—	9,600	9,000
Netherlands Economic Institute			
Economic research and analysis for education planning	23,650	—	11,684
NORWAY			
Christian Michelsens Institute			
Economic research	—	36,800	26,700
PAKISTAN			
Central Institute of Islamic Research			
Research program	—	32,104	8,194
PERU			
Association of Friends of the Municipal Public Library of Callao			
General support	—	7,000	—
SENEGAL			
Dakar, University of			
Training teachers of French and English	17,000*	—	8,400

APPROPRIATIONS AND PAYMENTS

<i>Humanities and Social Sciences</i>	APPROPRIATED OR ALLOCATED DURING 1963	BALANCE FROM PRIOR YEAR APPROPRIATIONS	1963 PAYMENTS
SOUTHERN RHODESIA			
Rhodesia and Nyasaland, University College of			
Research and training in the history of Central Africa	\$ —	\$ 61,000	\$ 14,040
Rhodesian Academy of Music			
Program in African music	4,275	7,223	5,561
SWEDEN			
Uppsala, University of			
Institute of Statistics	—	18,000	13,700
SWITZERLAND			
Fribourg, University of			
Research on Marxism-Leninism	—	7,069	6,300
Geneva, University of			
Research in philosophy, logic, and psychology	—	15,966	13,863
Graduate Institute of International Studies			
Advanced training in international organization	—	312,078	52,566
International Press Institute			
Program for the Asian press	—	135,309	36,800
TURKEY			
Ankara, University of			
Institute of Public Finance	—	10,326	8,697
Institute of Turkish and Islamic Art	—	15,000	12,924
Istanbul University			
Institute of Economic History	—	5,739	3,414
Trustees of Robert College			
Humanities program for Robert College and the American College for Girls	—	21,724	21,724
UNITED KINGDOM			
Cambridge, University of			
Cambridge University Press	—	10,447	2,807

APPROPRIATIONS AND PAYMENTS

<i>Humanities and Social Sciences</i>	APPROPRIATED OR ALLOCATED DURING 1963	BALANCE FROM PRIOR YEAR APPROPRIATIONS	1963 PAYMENTS
Cambridge, University of (cont'd)			
Completion of a history of English criminal law	\$ —	\$ 9,318	\$ —
Department of Applied Economics	—	44,320	13,969
Research and conferences on international politics at Peterhouse	5,130	—	1,681
Research and writing on world history	—	14,424	8,400
Durham, University of			
Department of Geography	—	15,652	3,411
London, University of			
Fellowships in international relations	—	9,516	3,769
Institute of Commonwealth Studies	—	266	—
Institute of Historical Research	—	204	—
Population Investigation Committee	—	505	—
Research fellowships at the Institute of Advanced Legal Studies	22,800	492	—
School of Oriental and African Studies	—	6,694	1,864
Studies on common law of the Middle Ages	—	28,595	11,196
Training and research in political science by foreign scholars	31,565	—	—
Writings of Jeremy Bentham	—	21,410	2,480
National Institute of Economic and Social Research			
Complete works of Alexis de Tocqueville	—	75	—
Oxford, University of			
African studies at St. Antony's College	75,000	—	75,000
European studies at St. Antony's College	—	54,570	30,406
Nuffield College	—	97,504	—
Queen's University of Belfast			
Cataloguing of Irish economic pamphlets	—	32	—
Royal Institute of International Affairs			
<i>Islamic Society and the West</i> series; economic and political research	20,180	25,544	23,181
Victoria University of Manchester			
American studies	—	14,025	9,611

APPROPRIATIONS AND PAYMENTS

<i>Humanities and Social Sciences</i>	APPROPRIATED OR ALLOCATED DURING 1963	BALANCE FROM PRIOR YEAR APPROPRIATIONS	1963 PAYMENTS
UNITED STATES			
Actors Studio, Inc.			
Program in playwriting, acting, and directing	\$ 56,400	\$ —	\$ 21,500
American Council of Learned Societies			
<i>Current Digest of the Soviet Press</i>	—	12,000	12,000
American Craftsmen's Council			
Reference service and general program	—	19,162	19,143
American Economic Association			
<i>American Economic Review</i>	—	1,625	1,625
American Historical Association			
Development of South Asian history studies at American universities	—	154	—
American Law Institute			
Preparation of a model criminal code	—	22,964	12,106
American Library Association			
International Relations Office	—	180,421	41,894
Library science graduate program at the University of the Philippines	—	56,795	34,359
Library training at the National Taiwan University	—	38,850	38,850
American Symphony Orchestra League, Inc.			
Workshops for conductors and music critics	—	42,612	42,561
American University			
School of International Service	—	9,500	5,309
Arizona, University of			
Professional training of Indian artists	—	33,889	14,130
Water resources in relation to social and economic growth in an arid environment	—	29,925	19,250
Asia Society			
Development of councils on selected countries of Asia	—	59,250	55,000
Association for Asian Studies, Inc.			
Advanced training of South Asian linguists	—	892	—
Committee on South Asia	—	115	—

APPROPRIATIONS AND PAYMENTS

<i>Humanities and Social Sciences</i>	APPROPRIATED OR ALLOCATED DURING 1963	BALANCE FROM PRIOR YEAR APPROPRIATIONS	1963 PAYMENTS
Brown University			
English language teaching program in the United Arab Republic	\$ —	\$ 279,600	\$ 19,703
California, University of			
<i>Berkeley</i>			
Department of Economics	—	120,000	40,000
Department of Political Science	—	160,000	50,218
Latin American demography studies	—	175,000	32,950
School of Law	6,000	13,831	19,831
<i>Los Angeles</i>			
Manual of Islamic civilization	—	9	—
Program in oriental music	—	10,193	—
Training of English language teachers in the Philippines	—	319,470	70,969
Carnegie Endowment for International Peace			
Training foreign service officers from newly independent nations	—	1,173,750	478,750
Carnegie Institute of Technology			
Graduate School of Industrial Administration	—	10,136	8,035
Chicago, University of			
Department of Anthropology	—	15,411	—
Department of Economics	175,000	44,140	15,133
Department of Geography	50,000	—	—
Population research	—	113,284	51,023
Problems in modernization in the Middle East and North Africa	80,000	—	—
Writings of James Madison	—	70,100	11,500
Colorado, University of			
College of Arts and Sciences	—	25	—
Columbia University			
American Press Institute	—	85,981	23,400
Department of Public Law and Government	—	15,669	9,777
Electronic music	—	6,356	6,356
Russian Institute	—	225,000	35,000
School of International Affairs	—	27,562	10,000
Training of Indonesian librarians	—	49,112	26,643

APPROPRIATIONS AND PAYMENTS

<i>Humanities and Social Sciences</i>	APPROPRIATED OR ALLOCATED DURING 1963	BALANCE FROM PRIOR YEAR APPROPRIATIONS	1963 PAYMENTS
Committee for Economic Development			
Program in international economic problems and policies	\$ —	\$ 16,668	\$ 16,668
Cornell University			
Training and research on the Quechua language	—	62,675	54,679
Dance Notation Bureau, Inc.			
Further development of Labanotation	—	7,000	3,500
Denver, University of			
Department of International Relations	—	21,500	9,300
Florida, University of			
Research on the Caribbean area	—	87,441	25,272
Political participation in non-metropolitan communities in Florida	3,000	24,581	27,581
Florida State University			
Research on community problems in a Southern city	—	61,385	41,760
Foreign Policy Association			
Service Bureau on World Affairs	—	3,701	—
Franklin Publications, Inc.			
English-Arabic dictionary	—	115,000	—
Fund for the International Conference of Agricultural Economists, Inc.			
International Association of Agricultural Economists	—	15,000	7,500
Harvard University			
Center for International Affairs	—	207,758	102,932
Economic research	—	200,000	14,000
Fellowships in Middle Eastern studies	—	885	—
Graduate School of Public Administration	—	82,580	52,690
Law School	—	40,795	3,247
Russian Research Center	—	1,227	—
Harvard-Yenching Institute			
Korean studies	—	200,000	200,000
Hawaii, University of			
Asian studies	—	10,660	10,599
Research materials for the library	—	81	—

APPROPRIATIONS AND PAYMENTS

<i>Humanities and Social Sciences</i>	APPROPRIATED OR ALLOCATED DURING 1963	BALANCE FROM PRIOR YEAR APPROPRIATIONS	1963 PAYMENTS
Hudson Review, Inc.	\$ —	\$ 100	\$ —
Fellowships in creative writing	\$ —	\$ 100	\$ —
Indiana University			
Establishment of a Latin American music center	—	71,300	15,668
Institute for Advanced Studies in the Theatre Arts			
Program in world drama	—	24,000	14,297
Kansas City, University of			
Research and teaching on the history of Kansas City	—	5,782	—
Lincoln Center for the Performing Arts, Inc.			
Toward construction costs	5,000,000	—	5,000,000
Massachusetts Institute of Technology			
Study of non-economic factors in economic development	—	11	—
Uses of computing equipment for problems in the social sciences	—	9,875	(-2,305)
Miami University			
Scripps Foundation for Research in Population Problems	—	822	822
Michigan, University of			
Seminar on Islamic art and architecture	—	14,252	6,296
Michigan State University			
Department of Political Science	—	13,600	—
Economic research	16,500	—	8,250
Minnesota, University of			
Program for advanced creative work in the theatre	74,000	—	40,472
National Cultural Center Building Program			
Toward construction and development costs	1,000,000	—	1,000,000
National Planning Association			
Study of the economics of competitive coexistence	—	4	—

APPROPRIATIONS AND PAYMENTS

<i>Humanities and Social Sciences</i>	APPROPRIATED OR ALLOCATED DURING 1963	BALANCE FROM PRIOR YEAR APPROPRIATIONS	1963 PAYMENTS
New Mexico, University of			
Studies of the role of the military in Latin America	\$ —	\$ 20,200	\$ 17,241
New York Pro Musica Antiqua, Inc.			
Program of presentations of music composed before 1700	—	9,000	2,250
New York Public Library			
Preparation and distribution of a Spanish-language journal	—	19,000	—
New York University			
Department of Government	—	25,000	5,000
Index for <i>Revista de Filología Española</i>	22,000	—	15,000
Institute of Fine Arts	—	224,964	73,300
North Carolina, University of			
Institute for Research in Social Science	—	49,808	28,724
Notre Dame, University of			
Committee on International Relations	—	15,000	10,000
Pennsylvania, University of			
Archaeological field work	—	63,790	57,500
School of Fine Arts	—	14,812	10,402
Studies of Argentine nationalism	—	16,749	15,445
Wharton School of Finance and Commerce	—	195	—
Permanent Committee for the Oliver Wendell Holmes Devise			
A history of the Supreme Court	—	10,600	7,000
Princeton University			
Center of International Studies	—	110,000	35,000
Department of Politics	22,000	2,395	15,248
Econometric research program	—	19,891	19,891
John Foster Dulles Collection	15,000	—	15,000
Projects related to university development in Latin America and Africa	100,000	—	—
School of Public and International Affairs	—	156,000	64,000
Seminars in criticism	—	612	—
Social Science Research Council			
Fellowship program in legal and political philosophy	—	44,777	24,751
Research fellowships and grants in aid	—	116,744	116,740

APPROPRIATIONS AND PAYMENTS

	APPROPRIATED OR ALLOCATED DURING 1963	BALANCE FROM PRIOR YEAR APPROPRIATIONS	1963 PAYMENTS
<i>Humanities and Social Sciences</i>			
Southern California, University of			
School of Music	\$ 296,000	\$ —	\$ —
Stanford University			
Applied Mathematics and Statistics Laboratory	—	24,283	24,280
Food Research Institute	—	17,948	17,948
Texas, University of			
Institute of Latin American Studies	38,000	—	20,500
Tulane University of Louisiana			
Latin American legal and social science research and training	68,500	—	—
Union Theological Seminary			
Advanced Religious Studies program	—	15,000	—
United States National Student Association			
Expansion of staff in Latin America	—	25,500	13,000
Vanderbilt University			
Department of Economics and Business Administration	—	174,448	74,829
Institute of Research and Training in the Social Sciences	—	5	—
Washington, University of			
Institute of Economic Research	—	7,506	7,506
Wayne State University			
Visiting professorship in economics at the University of Valle, Colombia	—	8,407	8,069
Wisconsin, University of			
Research in legal history	—	5,329	2,664
Role of financial institutions in economic development	—	20,262	7,543
Special appointment of senior staff to African universities	50,000	—	—
To appoint a visiting professor of African history and anthropology	—	1,190	1,191
Woodrow Wilson Foundation			
Woodrow Wilson papers	—	385	—
Yale-in-China Association, Inc.			
New Asia College, Hong Kong	—	4,605	3,963

APPROPRIATIONS AND PAYMENTS

<i>Humanities and Social Sciences</i>	APPROPRIATED OR ALLOCATED DURING 1963	BALANCE FROM PRIOR YEAR APPROPRIATIONS	1963 PAYMENTS
Yale University			
Advanced training program for African students at the Law School	\$ 75,000	\$ —	\$ —
Center for Quantitative Study of Economic Structure and Growth	—	1,582	1,582
Cowles Foundation for Research in Economics	—	46,733	43,072
Department of Political Science	—	2,079	2,079
History of the British Parliament in the period 1660-1690	—	21,000	3,200
Program for completion of scholarly works by senior faculty members	200,000	—	—
Research on the international protection of human rights	—	15,000	—
School of Drama	—	9,600	—
Yale University Press			
Publication of translations of Latin American books	—	90,000	45,000
Young Men's and Young Women's Hebrew Association			
Poetry Center	—	7,867	3,075
—			
Other Appropriations for Later Release	624,936	304,023	—
SPECIAL PROGRAMS			
Conference on agricultural economics	—	5,968	—
Conference on inter-university cooperation in sub-Saharan Africa	—	4,174	—
Studies in constitutional democracy	89,650° } 5,000 }	—	58,650
Studies in international relations	200,144°	82,739	188,061
Studies in legal and political philosophy	—	12,975	11,340
Studies of legal and political problems of outer space	—	7,080	—
Studies in urban design	44,000°	9,193	29,000
Tibetan studies	—	97,202	73,382
Cooperative Program			
Field staff	672,600	—	—

APPROPRIATIONS AND PAYMENTS

<i>Humanities and Social Sciences</i>	APPROPRIATED OR ALLOCATED DURING 1963	BALANCE FROM PRIOR YEAR APPROPRIATIONS	1963 PAYMENTS
Fellowships and Scholarships			
Administered by The Rockefeller Foundation	\$ —	\$ 1,869,396	\$ 734,745
Appropriated for 1964 allocation	925,000	—	—
Grants in Aid			
Regular and special programs	730,502*	1,213,518	699,597
Appropriated for 1964 allocation	750,000	—	—
TOTAL — Humanities and Social Sciences	\$11,904,772	\$12,788,572	\$11,758,816

University Development

COLOMBIA

Valle, University of

General support	\$ 312,000	\$ —	\$ 302,000
Faculty of Medicine	—	1,680,623	290,578
School of Nursing	30,000*	61,558	34,088
General studies program	252,731*	116,600	244,043

EAST AFRICA

East Africa, University of

Library development	23,367	—	12,150
Makerere University College, Kampala, Uganda	273,770*	357,026	138,198
Royal College, Nairobi, Kenya	77,605*	524,370	358,464
University College, Dar es Salaam, Tanganyika	—	61,225	30,469

NIGERIA

Ibadan, University of

General support	45,548	109,990	143,299
Agricultural sciences	—	117,613	—
Humanities and social sciences	233,000* } 24,600 }	368,936	141,143
Medical and natural sciences	283,470* } 185,000 }	183,011	469,916

APPROPRIATIONS AND PAYMENTS

<i>University Development</i>	APPROPRIATED OR ALLOCATED DURING 1963	BALANCE FROM PRIOR YEAR APPROPRIATIONS	1963 PAYMENTS
PHILIPPINES			
Philippines, University of the			
General support	\$ 175,000	\$ —	\$ 150,000
Agricultural sciences	220,000*	96,824	251,565
Humanities and social sciences	125,000* 145,895 } }	34,586	67,601
Medical and natural sciences	17,700	4,193	4,312
THAILAND			
Universities in Bangkok			
General support	49,500	—	24,168
Kasetsart University, College of Agriculture	—	567	—
Kasetsart University, College of Veterinary Science	—	1,634	1,487
Kasetsart University, cooperative corn improvement project	—	11,448	8,372
University of Medical Sciences, School of Public Health	—	240	221
Cooperative Program			
Field staff	20,225	125,693	134,090
Program centers in Latin America, Africa, and Southeast Asia	72,625	241,325	—
TOTAL — University Development	\$ 2,567,036	\$ 4,097,462	\$ 2,806,164

General

CONGO

Lovanium University

General purposes	\$ —	\$ 100,000	\$ 100,000
Teacher training courses	—	30,000	—

INDIA

India International Centre

Construction, equipment, and operating expenses	—	74,526	23,801
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APPROPRIATIONS AND PAYMENTS

<i>General</i>	APPROPRIATED OR ALLOCATED DURING 1963	BALANCE FROM PRIOR YEAR APPROPRIATIONS	1963 PAYMENTS
JAPAN			
International House of Japan, Inc.			
General program	\$ —	\$ 93,308	\$ 92,500
LEBANON			
American University of Beirut			
School of Arts and Sciences	—	2,446,609	411,470
SUDAN			
Khartoum, University of			
Research facilities and personnel	—	500,000	86,175
TURKEY			
Robert College			
Fellowships for potential Turkish faculty members	—	165,652	42,821
UNITED KINGDOM			
Cambridge, University of			
Churchill College Trust Fund	—	50,000	25,000
Oxford, University of			
St. Catherine's College, expenses of visiting fellows and scientists	—	100,000	16,797
UNITED STATES			
American Philosophical Society			
"Role of Philanthropy in Western Society"	40,000	—	20,000
Columbia University			
Advanced science writing program	—	67,232	27,557
Dartmouth College			
Summer school program for talented disadvantaged high school students	150,000	—	—
Duke University			
Student assistance to advance equality in educational opportunity	250,000	—	—
Emory University			
Student assistance to advance equality in educational opportunity	250,000	—	—

APPROPRIATIONS AND PAYMENTS

<i>General</i>	APPROPRIATED OR ALLOCATED DURING 1963	BALANCE FROM PRIOR YEAR APPROPRIATIONS	1963 PAYMENTS
Institute of International Education, Inc.			
International student exchange	\$ —	\$ 175,000	\$ 25,000
League of Women Voters			
Overseas Education Fund	50,000	—	10,000
National Academy of Sciences			
Completion of academy building	—	100,000	100,000
International conference on scientific information	—	750	—
National Health Council			
Uniform accounting and reporting for national voluntary agencies	—	45,500	14,250
Oberlin College			
Summer school program for talented disadvantaged high school students	150,000	—	—
Phelps-Stokes Fund			
Program for identification and placement of Negro talent	—	15	—
Princeton University			
Summer school program for talented disadvantaged high school students	150,000	—	—
Southern Regional Council, Inc.			
General program	50,000*	—	50,000
Tulane University of Louisiana			
Student assistance to advance equality in educational opportunity	250,000	—	—
United Negro College Fund, Inc.			
Campaign development fund	1,000,000	—	1,000,000
Development of selected member colleges	1,500,000	—	—
Vanderbilt University			
Student assistance to advance equality in educational opportunity	250,000	—	—
Woodrow Wilson National Fellowship Foundation			
Teaching internship program	405,000	—	—
Other Appropriations for Later Release	1,846,540	1,503,299	—

APPROPRIATIONS AND PAYMENTS

<i>General</i>	APPROPRIATED OR ALLOCATED DURING 1963	BALANCE FROM PRIOR YEAR APPROPRIATIONS	1963 PAYMENTS
SPECIAL PROGRAMS			
Hungarian Refugee Aid Program			
Support of refugee students and scholars studying at Austrian institutions	\$ 110,000	\$ 68,883	\$ 105,978
Polish Science Program			
Fellowships and scholarships	—	4,206	883
Special Review and Planning Projects	260,000	199,546	315,099
Villa Serbelloni			
Capital development	—	2,842	1,824
Conferences and consultations	—	14,117	13,969
Operation and maintenance	183,425	200,736	167,241
Fellowships and Scholarships			
Administered by The Rockefeller Foundation — medical fund	—	46,009	34,897
Appropriated for 1964 allocation	200,000	—	—
Grants in Aid			
Regular program	79,295°	205,948	81,044
Appropriated for 1964 allocation	200,000	—	—
Exchange Fund	—	22,529	—
Imprest Reserve Funds			
Institutional grants related to fellowships and scholarships	428,500	500,000	428,500
Retiring allowances	55,808	999,901	55,710
Shipping and insurance	332,423	444,534	328,523
Supplementary and emergency fellowship expenses	—	50,000	—
Staff on Special Assignment	155,800	235,420	198,163
TOTAL — General	\$ 8,346,791	\$ 8,446,562	\$ 3,777,202

APPROPRIATIONS AND PAYMENTS

	APPROPRIATED OR ALLOCATED DURING 1963	BALANCE FROM PRIOR YEAR APPROPRIATIONS	1963 PAYMENTS
<i>Administration</i>			
New York Office			
Prior years	\$ —	\$ 474,520	\$ 194,593
1963	19,100	3,384,350	3,071,528
1964	3,666,710	—	—
London Office			
1962	—	5,052	596
1963	—	13,040	7,785
Total – Administration	<u>\$ 3,685,810</u>	<u>\$ 3,876,962</u>	<u>\$ 3,274,502</u>
TOTALS – December 31, 1963	41,527,497	58,436,915	35,342,598
<i>Less allocations and grants in aid from prior year appropriations</i>			
	4,381,425		
<i>Add allocations and grants in aid from prior year appropriations</i>		4,381,425	
	<u>37,146,072</u>	<u>62,818,340</u>	<u>35,342,598</u>
<i>Deduct unused balance of appropriations allowed to lapse December 31, 1963</i>		3,286,529	
	<u><u>\$37,146,072</u></u>	<u><u>\$59,531,811</u></u>	<u><u>\$35,342,598</u></u>

APPROPRIATIONS AND PAYMENTS

REFUNDS ON CLOSED APPROPRIATIONS

Medical and Natural Sciences

Carlsberg Foundation	\$ 9
Cooperative Virus Research Program — Belém — 1954	291
Cooperative Virus Research Program — Poona — 1960	253
General development — New Delhi office	162
New York University	145
Northern Ireland Hospitals Authority	650
University of Khartoum	<u>9,152</u> \$10,662

Agricultural Sciences

Cooperative Program — Field Staff — 1959	\$ 596
Cooperative Program — India — 1959	55
Iowa State University of Science and Technology	1,916
Louisiana State University	336
University of Chile	115
University of Illinois	<u>358</u> 3,376

Humanities and Social Sciences

Encyclopaedia of Social Sciences	\$4,710
Getulio Vargas Foundation	134
University of Brussels	266
University of the West Indies	425
University of Wisconsin	<u>161</u> 5,696

Administration

New York and London offices — prior years	\$7,423
TOTAL — 1963 Refunds	<u><u>\$27,157</u></u>

APPROPRIATIONS AND PAYMENTS

SUMMARY OF FUNDS APPROPRIATED • 1963

1963 APPROPRIATIONS AND ALLOCATIONS

(pp. 173 – 225) \$24,211,504

LESS ALLOCATIONS AND GRANTS IN AID FROM PRIOR YEAR APPROPRIATIONS

INCLUDED ABOVE 4,381,425 \$19,830,079

APPROPRIATIONS FOR ALLOCATION BY EXECUTIVE COMMITTEE OR OFFICERS

2,704,057

GRANTS IN AID (1964)

2,200,000

FELLOWSHIPS AND SCHOLARSHIPS (1964)

4,053,500

COOPERATIVE PROGRAMS (1964)

3,900,870

ADMINISTRATION AND SUPPORTING SERVICES (1964)

3,666,710

SHIPPING AND INSURANCE ON GOODS SENT ABROAD

332,423

OTHER RELATED PROGRAM, FIELD, AND SERVICE EXPENSE

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TOTAL APPROPRIATIONS, 1963

\$37,146,072

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