THE ROCKEFELLER FOUNDATION

ANNUAL REPORT FOR 1966

THE ROCKEFELLER FOUNDATION

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CONTENTS

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April 1966—April 1967

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[1] Beginning February 1967.

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[1] Resigned July 1966.
[2] Through May 1966.
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[1] Beginning February 1966.
[2] Beginning October 1966.
[3] Beginning June 1966.
[4] Beginning July 1966.
[5] To April 1966; Board discontinued after that date.

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[1] Beginning September 1966.
[2] Beginning February 1966.
[3] Beginning March 1966.
[4] Resigned June 1966.
[5] Retired November 1966.
[6] Through November 1966.

CHILE

Santiago

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VIRUS RESEARCH PROGRAM

RONALD B. MACKENZIE, M.D.[6]

[1] Through February 1966.
[2] Beginning September 1966.
[3] Beginning June 1966.
[4] Temporary appointment completed.
[5] Beginning March 1966.
[6] Beginning August 1966.

Cali

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ALEX J. STEIGMAN, M.D.[2]

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GUY B. BAIRD, PH.D., *Director*[5]
R. GLENN ANDERSON, PH.D., *Associate Plant Breeder*

[1] Beginning August 1966.
[2] Temporary appointment completed.
[3] Through September 1966.
[4] Through August 1966.
[5] Beginning September 1966.

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ERNEST W. SPRAGUE, PH.D., *Geneticist*[5]

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Poona

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CHARLES R. ANDERSON, M.D.

Trivandrum

MEDICAL AND NATURAL SCIENCES

JANE R. STEWART, R.N., M.N.[6]

Vellore

VIRUS RESEARCH PROGRAM

DONALD E. CAREY, M.D.

[1] Beginning July 1966.
[2] Temporary appointment completed.
[3] Beginning June 1966.
[4] Beginning February 1966.
[5] Through July 1966.
[6] Resigned February 1966.

ITALY

Bellagio (Lake Como)

VILLA SERBELLONI

JOHN MARSHALL, M.A., *Director*

KENYA

Muguga

AGRICULTURAL SCIENCES

ORDWAY STARNES, PH.D., *on assignment as Director, East African Agriculture and Forestry Research Organization*

Nairobi

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MAURE L. GOLDSCHMIDT, PH.D.[1]

ROBERT W. JULY, PH.D.[1]

BENTON F. MASSELL, PH.D.

DONALD S. ROTHCHILD, PH.D.[1]

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LEO F. BOURNE[2]

MEXICO

Mexico City

INTERNATIONAL MAIZE AND WHEAT IMPROVEMENT CENTER

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NORMAN E. BORLAUG, PH.D., *Head, International Wheat Program*

ROBERT D. OSLER, PH.D., *Head, International Maize Program*[1]

JOHN S. NIEDERHAUSER, PH.D., *Plant Pathologist; in charge of Inter-American Potato Improvement Project*

DELBERT W. HENDERSON, PH.D., *Soil and Water Management*[3]

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CHARLES F. KRULL, PH.D., *Geneticist (wheat)*

REGGIE J. LAIRD, PH.D., *Soil Scientist*

NEIL B. MACLELLAN, *Administrative Assistant and Field Staff Photographer*

DELBERT T. MYREN, PH.D., *Information Specialist*

[1] Beginning July 1966.
[2] Beginning September 1966.
[3] Temporary appointment completed.

COOPERATIVE ANIMAL IMPROVEMENT PROJECT

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NIGERIA

Ibadan

INTERNATIONAL INSTITUTE OF TROPICAL AGRICULTURE PROJECT

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ARTHUR D. LEACH, PH.D., *Agricultural Engineer*[2]

MARVIN F. LINDSEY, PH.D., *Associate Plant Geneticist*[3]

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ROBERT W. JULY, PH.D.[4]

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OTTIS R. CAUSEY, SC.D.

GRAHAM E. KEMP, D.V.M.

PHILIPPINES

Quezon City

HUMANITIES AND SOCIAL SCIENCES

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DANTE L. GERMINO, PH.D.[5]

MEDICAL AND NATURAL SCIENCES

LUCIEN A. GREGG, M.D.

[1] Resigned March 1966.
[2] Beginning March 1966.
[3] Resigned August 1966.
[4] Through June 1966.
[5] Beginning July 1966.

Los Baños

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ROBERT F. CHANDLER, JR., PH.D., *Director*

A. COLIN MCCLUNG, PH.D., *Assistant Director*

RONALD S. BASKETT, *Seed Production Specialist*[1]

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LOYD JOHNSON, M.S., *Agricultural Engineer*

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ARTHUR A. MUKA, PH.D., *Entomologist*[3]

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GLADWIN O. UNRAU

SUDAN

Khartoum

AGRICULTURAL SCIENCES

MITCHELL G. VAVICH, PH.D., *on assignment as Visiting Professor, Arid Zone Research Unit, University of Khartoum*

[1] Beginning October 1966.
[2] July to November 1966.
[3] Temporary appointment completed.
[4] Retired November 1966.
[5] Beginning February 1966.
[6] Beginning July 1966.

TANZANIA

Dar es Salaam

HUMANITIES AND SOCIAL SCIENCES

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ERNEST W. SPRAGUE, PH.D., *Agricultural Project Leader*[3]

DWIGHT C. FINFROCK, M.S., *Agronomist*

BEN R. JACKSON, PH.D., *Associate Plant Breeder*[4]

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HUMANITIES AND SOCIAL SCIENCES

EMORY F. BUNDY DONALD C. MEAD, PH.D.

JAMES S. COLEMAN, PH.D.

[1] Beginning June 1966.
[2] Temporary appointment completed.
[3] Beginning August 1966.
[4] Beginning November 1966.
[5] Through May 1966.
[6] Beginning September 1966.
[7] Beginning July 1966.

MEDICAL AND NATURAL SCIENCES

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N. R. E. FENDALL, M.D.[3]

[1] Beginning February 1966.
[2] Resigned June 1966.
[3] Temporary appointment completed.
[4] Beginning October 1966.
[5] Through July 1966.
[6] Through August 1966.

THE PRESIDENT'S REVIEW 1966

TECHNOLOGY AND NUTRITION

To those who have long warned that unlimited population increase and totally inadequate food production are on a collision course, there is some reassurance in observing that increasing numbers of world leaders are coming to this realization and are now lending their voices and influence to the cause.

World food requirements can be translated into a reasonably accurate formula, and, theoretically at least, measures for their satisfaction can be taken promptly. Population stabilization is a much more complicated problem, the difficulties of which reach an altogether different order of magnitude. Nevertheless, all efforts to provide food and other material requirements adequate for man's life will fail unless the rate of world population increase can be significantly reduced. The burden of ever-growing numbers of people which the world is not equipped to accommodate must be mitigated. And, importantly, we must buy time for long-range planning.

If we can make the optimistic assumption that progress on the population-stabilization front will gain increasing momentum, it then becomes practical to examine ways to expand the world's food budget as rapidly as possible. From the continuing dialogue and controversy concerning the production and distribution of food supplies, at least one fact has emerged with clarity. While debating the moral obligation of the developed nations of the world, most especially the United States, to provide food for the hungry, we have seen supplies of so-called surpluses dwindle alarmingly. The net effect has been a practical example of the inability of a relatively small sector of the world to feed, on any continuing basis, a significantly larger sector. Any attempt to sustain such an effort over a period of years will not only fail in its objective but will also substantially impair the economies of the donor nations. There is only one alternative: to bring more of the underproducing countries, whose agrarian proficiency at present is only minimal, to the point where they can produce enough food for their own needs or other commodities which can be exchanged for food.

This alternative, which is not only highly desirable but absolutely necessary, postulates three major requirements:

1. A clear-cut understanding on the part of national leaders everywhere that agriculture is an industry and must be treated as such, with the same intelligence and support which is applied to any other industry;

2. Broad improvements in conventional agriculture through (a) applying to existing crop acreage those conversion factors which have been demonstrated to lead from underproduction to full production, (b) the increasing utilization of the humid tropics for growing food and feed, and (c) the greater utilization of lands not now in production because of their aridity;

3. Vastly increased research on nonconventional sources of food and on the protein enrichment of those basic food cereals which are the staple nourishment of most of the world's peoples.

AGRICULTURE AS AN INDUSTRY

A first step is to accept as fact the industrial character of agriculture and to identify all the components essential to making it a success. Then it will be possible to begin to provide these components in an orderly and integrated fashion, so that they may interact within the production system. Needed are intelligent and understanding leadership within the national government structure; well-trained and well-paid teachers, investigators, and extension personnel; and a vigorous business community which will direct a substantial part of its efforts to providing the tools, chemicals, transport, markets, and credit required by the agricultural sector. In sum, farmers must have access on reasonable terms to the necessary adjuncts of their business; they must be helped to manage crops efficiently, and economic incentives must be provided to encourage them to make greater production efforts. All of these are essential to a successful agricultural industry. Also required are land units of sizes appropriate to the productive capacity of individual farmers, cooperatives, or large-scale enterprises. Finally, but by no means least important, there should be a growing concern for the education of the rural community to enable it to take greater advantage of the knowledge, materials, and incentives being made available.

THE TECHNOLOGY OF NUTRITION

In the countries that are leading the world in agricultural production, most of the advances in average yields have come about through improvements in the genetic constitution of crop plants and domestic animals, and in management methods. We have learned that a combination of improved varieties, modern tillage and irrigation practices, adequate and timely application of fertilizers, and the use of pesticides and herbicides can result in yields no one could have imagined a generation ago. We have further discovered that as we continue to increase maximum yield potentials through research, national average yields gradually rise. The techniques and principles that have been learned are freely available to everyone who might wish to apply this information in a practical fashion. Therefore, the

current dilemma in world food production is not a lack of knowledge or even a lack of methods and materials for vast improvements, but rather inertia, lack of leadership and organization, and inadequate resources, both human and financial, with which to mount promptly an aggressive and far-flung program of agricultural development. Unless heavier emphasis is placed upon bringing the underproducing nations to a position more in keeping with their agricultural potentials, the battle will not be won.

Modern food science recognizes the absolute necessity of making prompt, substantial progress toward filling the widening food gap. At the same time, however, it is also recognized that maximum attention must be given to improving the nutrient quality of the bulk foods which sustain the vast majority of the world's citizens. Continuing research is showing the way to a variety of methods by which food crops can be made more productive and at the same time higher in protein content. Simultaneously, new evidence is being adduced to indicate that the protein compounds essential to metabolism can be produced by many nonconventional methods that can add measurably to human and animal nutrition.

NEW BIOLOGICAL MATERIALS

Most of the world's people depend of necessity on foods which are predominantly carbohydrate—rice, wheat, corn, sorghum, potatoes, sweet potatoes, cassava. It has been demonstrated time and again that with improved management, the use of high-yielding varieties, and the availability of basic inputs and accelerators, vast new quantities of these foodstuffs could be provided, new supplies which would at least furnish bulk food to sustain life. However, even if these quantitative needs could be met, there still remains the problem of quality, since these crops are of inadequate nutritional value. If, as we are striving to improve average yields, we could at the same time increase the protein content and quality of cereal and other basic food crops, we would have made an exceedingly important contribution toward solving world problems of malnutrition. And there is growing evidence that this can be done.

In 1963, two scientists at Purdue University, using recently developed biochemical techniques, discovered that the presence of a mutant gene called *opaque-2* was directly related to the level of lysine, an amino acid, in corn. Although corn is deficient in lysine and tryptophane, a fact which limits its nutritive value, lines bred with *opaque-2* contain grain with ten times the usual amounts of lysine, and by inference of tryptophane—both amino acids essential for normal growth. Feeding trials with animals—first rats, then swine—showed extraordinary growth rates: the new corn had nearly the protein value of casein, a milk protein widely used as a reference standard

and the control source in these experiments. Another corn variant, *floury*· was found to be high in lysine, and crosses between the two are now in pro ress, to test whether even higher levels of the essential protein componen can be attained.

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Consultations of Foundation officers with officials of the National Insti tutes of Health, the United States Agency for International Developmen programs, the United States-Japan Cooperative Medical Sciences Program, the Protein Advisory Board of the Food and Agriculture Organization, and private agencies, such as the Institute of Nutrition Sciences of Columbia University, resulted in the formulation in December, 1965, of an internation- al program in nutritional sciences to be launched at the earliest possible date with Foundation resources and Foundation personnel deployed through- out Latin America and Southeast Asia, and backed by the assurance of even- tual support from other sources.

The main focus of the diverse aspects of this program is quality improve- ment of the cereal grains consumed by man and animals—corn, wheat, rice, sorghum, and the millets. The work takes different forms in the sev- eral centers involved in the program: at the present time five centers, two in Latin America and three in Southeast Asia, are engaged in various phases of biochemical analysis and crossbreeding of grains, and in animal- and child-feeding trials; ancillary research to develop more rapid and efficient means of amino-acid analysis is being supported at Tulane University.

An initial grant was made by the Foundation in 1965 to the University of Valle, in Cali, Colombia, to support amino-acid analysis of Colombian plant foods. The Rockefeller Foundation agricultural group working at Tibaitatá near Bogotá is supplying local strains of corn, beans, plantains, and other food crops to the laboratory at the University for these tests. Simultaneously, a study of amino-acid metabolism in severely malnourished children is being conducted at the University Hospital in Cali, where cases of kwashiorkor are common. The cooperative effort essential to this project exemplifies the interdisciplinary nature of the program and also illustrates the flexibility of action which a private foundation is able to exercise. The agricultural team at Tibaitatá has been working for over ten years on improvement of Colombian food crops; many of the Colombian staff mem-

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bers have been Foundation grantees or scholars. The same holds true of the University of Valle: it was one of the first institutions selected for long-term development assistance by the Foundation, with initial emphasis on public health, preventive medicine, rural health, and child nutrition. Outstanding scholars from the University, including the present director of the nutrition studies, have been enabled by the Foundation to do advanced work abroad. This interwoven pattern of cooperation built up in the past laid the groundwork for speedy launching of the nutrition program. The same general configuration can be found with variations in Mexico, India, Thailand, and the Philippines, where the stage was set for rapid organization of a vast and complex international program involving several scientific disciplines and a number of university, government, and autonomous agencies.

The first full-scale operation to get under way in 1966 was the protein quality laboratory in Chapingo, Mexico, set up to undertake the screening of the world collection of wheat and corn in the germplasm banks of the International Maize and Wheat Improvement Center. Here geneticists have access to some 8,000 to 10,000 varieties of wheat and corn, a collection built up over more than 24 years by Foundation and Mexican scientists. A staff of biochemists was recruited for the preliminary job of screening close to 2,500 strains of corn for total protein and for specific amino acids, so that plant breeders could select the most promising for the first crosses. Similarly, about 1,000 lines of wheat must be analyzed. During the two peak crossbreeding seasons, which last about five weeks, 2,000 or more samples must be analyzed rapidly, to indicate which lines should be chosen for the next crossings.

The Foundation-sponsored program in India will concentrate grain research on the genetic and environmental factors which influence protein content and composition in sorghum and the millets—basic foods in both Asia and Africa. The laboratory analysis will be done at the Indian Agricultural Research Institute in New Delhi. Here researchers will have access to about 7,800 sorghum accessions in the world collections of the Indian crop improvement programs. Screening of these lines for total protein and lysine will be followed by detailed analysis of the varieties with high absolute or relative lysine levels, to get a picture of their amino-acid distribution. Next, genetic factors involved in the lines which seem most promising will be analyzed, exercising particular care to identify recessive characteristics which may exist in established varieties but which may be masked or overlooked. (The *opaque-2* gene in corn is recessive; it was known to scientists for 30 years before its role in protein composition was discovered.)

The program will also include animal-feeding experiments with *opaque-2*

corn, to be carried out at the All India Institute of Medical Sciences. Plans are being made to set up a special clinical research unit in a new hospital to be opened in mid-1967, so that nitrogen-balance studies can be made in conjunction with feeding trials of malnourished children. Feeding trials are also foreseen for a village population where a base line regarding nutrition can be established in advance.

Similar projects are being elaborated in Thailand and the Philippines. The research, training, and extension activities of the International Rice Research Institute in Los Baños, the Philippines, have laid the groundwork for protein analysis of rice and field trials of new varieties. Ten thousand strains of rice are available at the rice bank of the Institute, and rice experts are at work testing superior varieties in 40 locations in various countries in Southeast Asia. Biochemists on the staff of the Institute will make amino-acid analyses of rice varieties known to be high in total protein. The problem with rice is not so much one of improving the amino-acid balance, as is the case with corn, but of raising the amount of total protein available. Rice protein has a biological value of approximately 90 per cent that of casein, but total protein is very low. Environmental factors which are known to affect protein content, such as the amount of nitrogen available to the plant during grain ripening, can be manipulated by scientists to increase protein prior to analysis for specific amino acids.

In connection with these worldwide programs concentrated on the basic cereal grains, a center for research and training in nutritional diseases is being planned for Southeast Asia, where scientists from the National Institutes of Health and The Rockefeller Foundation have laid the groundwork for cooperation in this field, the latter through the university development program with educational institutions in Bangkok. The research will center on nutritional anemias, and will train specialists from all over Southeast Asia through coordinated programs involving science and medical faculties in the leading institutions of Bangkok.

PROGRESS THROUGH INTERNATIONAL INSTITUTES

Foreign aid can best be treated as a problem-solving exercise. It is never difficult for intelligent people to sit down together to identify critically important problems involved in agricultural production. Once this has been done and priorities have been agreed upon, it becomes possible to attack these problems one by one. When one has been solved, it then becomes visible proof of achievement; its solution engenders confidence that larger tasks can be essayed and carried forward to success. One highly effective approach to problem-solving on a broad geographic scale is the international institute dedicated to specific, practical goals.

The International Rice Research Institute, located outside Manila in the Philippines, initiated under the auspices of the Ford and Rockefeller Foundations in concert with the Government of the Philippines, was founded to conduct research on all aspects of the rice plant, to develop and distribute information methods, and to improve materials which when in direct competition with local rice varieties will demonstrate the ability to increase production substantially. As a consequence, the staff of the Institute has studied the rice plant in depth—its morphology, physiology, genetic complex, reaction to daylight, pests, diseases, field management—in short, every aspect of rice production from the biology of the plant to the mechanics of its harvesting. Results to date have been impressive, and the outpouring of new knowledge voluminous. Most striking, however, has been the development of well-adapted, short-strawed varieties of rice which, under appropriate systems of management, yield several times as much as the local varieties. These new varieties are being widely tested throughout the rice bowl of Asia in order to evaluate their performance and to determine where additional research is required. At the same time, they are adding to local rice production. As these primary materials are gradually worked into the local scene through genetic refinements and other measures, they can be expected to push out the lower-yielding types. To this end, the Institute works with rice departments or similar agencies in the Philippines and other rice-bowl countries: it provides a continuing flow of new materials and information to all who could benefit from them; it stimulates local research programs to take fullest advantage of the basic materials provided.

The research effort in the Philippines is enmeshed with a training program for rice scientists who come from many countries to work within the research components of the Institute. They are given the opportunity to simultaneously carry on studies for advanced degrees at the adjacent College of Agriculture of the University of the Philippines. After the training period, these men and women return to their own countries to initiate or participate in national rice research and development programs.

A second institute, known as the International Maize and Wheat Improvement Center (CIMMYT), has been established in Mexico by the Government of Mexico and The Rockefeller Foundation. This organization is the culmination of a long period of cooperation between Mexico and the Foundation. Like the International Rice Research Institute, the new Center concerns itself with basic research, in this case on the wheat and corn plants, and with the development of prime materials which can be widely distributed for adaptation in many parts of the world. By utilizing improved plant materials developed in Mexico, many countries in Latin America, Asia, and Africa are achieving successful results. Plans are currently being devel-

oped to mount a multinational project involving a number of Middle Eastern countries which are important producers of wheat.

Two new international centers are now in prospect to carry out basic research on tropical agriculture, and to disseminate widely and promptly the results which would accrue. These institutes would be established in Nigeria and Colombia under cooperative arrangements worked out between the governments, local institutions, and The Rockefeller Foundation together with the Ford Foundation.

The evidence is clear that if new methods and materials can be produced and shown by actual field tests to be superior, they are readily acceptable in areas where they are needed to improve both average yields and the quality of the product. This is especially true when basic food crops are involved, since they play such a major role in providing bulk foods for many hundreds of millions of people. However, the same system can be applied in other aspects of agricultural production—for example animal husbandry and animal pathology.

The international research institute is designed to fill a gap, to aid and reinforce rather than supplant existing institutions and agencies dealing with similar problems, by sharply focusing on one or a very few obvious problems of international importance. Such an institute is able to develop thrust which otherwise might not be generated as quickly. It also has the advantage of being in a position to carry on fundamental research, the results of which may have universal application. A few examples from work being performed at IRRI and CIMMYT will illustrate this concept.

IRRI scientists have produced rice varieties which are little affected by photoperiod. As a consequence, improved varieties can be expected to be useful over a wide area without having to be redesigned in order to adapt to the local day length.

A second and equally striking illustration is the possibility that the *opaque-2* gene can be introduced into varieties of corn anywhere with the expectation that the grain will have an improved amino-acid content with correspondingly increased nutritional qualities.

A third illustration of biological engineering for crop improvement is to be found in the designing of a variety of rice plant that will achieve a better balance between the production of grain and leafy material—short-strawed types with resistance to lodging and a high degree of response to fertilizers, an architecture favoring efficient accumulation of carbohydrates as grain.

Still another example is the combination of wheat and rye varieties into what are called the triticales, a new and exciting man-made species. International research institutes will continue to look for new ways to tailor food crops for greater utility in terms both of yield and quality.

THE SEARCH FOR QUALITY

Although there is considerable discussion of nonconventional sources of food, the preponderance of evidence suggests that it is unrealistic to conclude that within a predictable period of time the world could depend largely upon nonconventional food resources. Rather, it might be expected that agriculture as we now know it will have to become increasingly efficient and automated, and that there may well be a growing shift away from animal production to the production of larger quantities of plant foods that are consumed directly by man. At the same time, the new food grains will be higher in protein content, and supplementary synthetic proteins will become more readily available.

Many suggestions have been made as to how the sea could be made more productive and, to some extent at least, "farmed." At the moment limiting factors in these proposals are economic. However, in view of the apparent depletion of some of our major marine resources, we will undoubtedly have to find ways not only to protect and increase marine resources for world food requirements, but also to develop systems which can take orderly and controlled advantage of these resources.

A somewhat more manageable possibility is a greatly intensified effort to develop fish ponds, which are extraordinarily efficient producers of protein. Because the products of these ponds lend themselves to infinite variation, this possible protein source could be of growing usefulness and the techniques could be often applied to land that is not otherwise economically productive.

Attention has been called on many occasions to the vast quantities of proteins present in plant parts not ordinarily used for economic purposes. It has been clearly demonstrated that leaf proteins can be extracted, purified, and used both as animal food and as human food. In this fashion, large quantities of protein might be obtained, especially from the tropics, but the costs of collection, processing, and concentration do not at present make this protein resource economically attractive. As technology improves, it may prove more logical to manage selected leaf protein "crops" for economic purposes.

Microorganisms have long been a tantalizing possibility for increasing food supplies. Many in themselves have a high protein content and others lend themselves to chemical conversions that result in protein by-products. Chlorella and other forms of algae have long been thought of as possible important sources of protein, and experiments here and abroad have clearly demonstrated the feasibility of obtaining proteins through the artificial culture of algae and their subsequent conversion to dry powder form. Their protein quality and content are good, and flavor problems can be resolved. The

difficulty thus far has been to develop a cheap, continuous process which would make it possible to supply large quantities of the end product at prices competitive with those of conventional feeds or foods. Further research may well continue to narrow this gap.

The yeasts have long been known to be a potentially important source of protein. There is no question that, under appropriate culture conditions, they can be produced in vast quantities and then utilized either directly or as a protein supplement for the enrichment of a wide variety of foods. The production of protein by yeasts that feed on the waxy components of petroleum has been achieved, and further research and improved technology could readily result in establishing this increasingly important approach to nutrition.

The enormous variety of bacteria, and the multifarious biochemical transformations which they bring about, have often suggested the possibility of using them for the production of protein substances. We know that bacteria can convert mineral salts, natural gas, nitrogen, and carbon dioxide into protein, which can then be recovered in the form of dry bacterial cells. Certain bacteria, utilizing carbon monoxide and urea, may produce a substance which is 70 to 75 per cent protein in dry weight form.

In short, there are many exciting possibilities for supplementing the products of conventional agriculture with others from nonconventional sources, and these should be the subject of growing attention and research. Nevertheless, the over-enthusiastic idea that conventional agriculture will be dispensed with in the foreseeable future is unrealistic, as is the notion that were unconventional food production to become successful, agricultural land would then revert to its natural sylvan state for the everlasting recreational enjoyment of man. Toward the conquest of hunger, as in so many vital challenges that face us, we must concentrate our best efforts on what is feasible today while vigorously seeking new possibilities for the future.

J. George Harrar, President

TOWARD THE CONQUEST OF HUNGER

The exigencies of world food shortages and the depletion of the United States' so-called surpluses are finally creating far greater public and governmental awareness that long-range campaigns against hunger must have as their primary objective the development of local research, training, and extension programs.

Recognizing the dimensions of the emergency, The Rockefeller Foundation in 1963 defined the Conquest of Hunger as one of the major program goals to which it would devote its professional and financial resources. The Foundation's cooperative agricultural programs in Mexico, Colombia, Ecuador, Chile, India, Thailand, Nigeria, Kenya, Uganda, and the Sudan have concentrated on key problems of food production in these countries, with particular emphasis on the basic cereal grains—corn, wheat, rice, sorghum, and the millets—and when pertinent on livestock production and animal health. As an auxiliary effort, grants have been made to universities, and to various national and international agencies for the development of protein resources, including research into the possibilities of breeding high-quality protein into grains.

Complementing these efforts a program has been undertaken toward the control of schistosomiasis, a disabling parasitic disease which spreads with the development of irrigation in the tropics and thus defeats the purpose of agricultural programs. Research dealing with arid land development, with various aspects of agricultural economics, and with relevant technological problems has been supported by grants to universities and other organizations. And, importantly, steps are being taken to meet the special needs of agricultural development of the tropics.

Foundation efforts to strengthen educational and research institutions within the developing countries and scholarship programs designed to increase scientific competence are predicated on the conviction—and the Foundation's experience over nearly a quarter of a century of agricultural activities abroad—that the most effective aid is that which develops leadership within the nations themselves and enables them to assume responsibility for their own agricultural and economic development.

Scientific research in the developed nations has reached the point where existing knowledge could revolutionize world food production and overcome hunger in the underdeveloped countries, but massive human and institutional resources must be marshalled before this can be realized. New grain varieties, properly managed, are already demonstrating that crop yields can be doubled and trebled, and systematic national planning based on this knowl-

edge has been initiated, for example, for wheat production in Pakistan and rice production in the Philippines. As these and similar efforts gain momentum, as they become demonstrations of what can be done where the will exists, prospects for feeding the growing populations of Asia, Africa, and Latin America should brighten. Carried out in conjunction with population stabilization programs, they offer hope that the nations of the underdeveloped world may in time win the struggle to feed their people and insure future generations against need.

WHEAT

About a quarter of the world's grain harvest is wheat. Production has been steadily increasing—in less than ten years annual world production went from 171 to 250 million tons—but in the developing continents its potential is still far from realized. Superior new varieties are available for local utilization; efficient methods for cultivating them are known; wheat scientists, technicians, and extension workers are increasingly deployed throughout the world: wheat is now ready to contribute even more substantially to world food supplies.

The Foundation's work in wheat is centered in the International Maize and Wheat Improvement Center in Chapingo, Mexico, an autonomous research and training institute supported by the Rockefeller and Ford Foundations and other organizations. Various national wheat programs are also aided through the Foundation's cooperative agricultural programs. Major accomplishments have been the creation of new wheat varieties, the development of improved breeding and cultural methods, contributions to the training of an international corps of wheat specialists, and the promotion of international cooperation in the interests of producing more and better wheat.

Behind the new wheats are years of research and testing. Thousands of lines were developed by plant breeders in Mexico, Colombia, and Chile and then were introduced to other countries, in most cases by former trainees of the Foundation's programs. Colombia, Chile, Guatemala, Ecuador, Peru, Bolivia, Paraguay, Libya, the Sudan, Kenya, Rhodesia, Jordan, Israel, Afghanistan, Pakistan, India, Nepal, and the United States have all planted Mexican-derived varieties commercially. In addition, wheat-growing countries in six continents have used breeding materials from these lines in crosses with local types or for reselections to produce commercial types. Now the reverse is taking place, and breeding materials and new varieties are being sent back to the International Center in Mexico for evaluation and experimentation. In addition to developing and testing varieties adapted to special growing conditions, the Center is developing more universally adaptable varieties.

Superior wheat varieties are available today for utilization in almost every part of the world. More than 40 young wheat scientists from Middle Eastern countries are among specialists who have studied wheat improvement in Mexico.

Photograph Excised Here

Already in India and Pakistan wheat revolutions are in the making based on the new wheat varieties and farming methods. All-out national programs are under way to put them into production. "Package programs" exist, specifying fertilizer and irrigation needs, techniques of soil preparation and of planting, and means of insect, weed, and rat control. Government resources are being marshalled in both countries to assure the farmers fair profits, reasonable financing and credit facilities, adequate distribution of fertilizer, use of irrigation waters, and, most important, knowledge of the "package" through a widespread extension program.

In India, after three years of testing Mexican wheats with the cooperation of Foundation experts, 18,000 tons of seed of the new improved dwarf varieties were imported from Mexico—the largest such purchase ever recorded. While vast plantings are being undertaken to meet India's goal of doubling her wheat production within eight years, further research is proceeding under the auspices of the All-India Coordinated Wheat Improvement Scheme, with Foundation cooperation, to refine cultivation practices and develop disease resistance.

In the wake of the successful Mexican campaign, other Latin American countries initiated national programs to bring the new materials and methods to farmers: Colombia, Ecuador, Peru, Chile, and Argentina are now engaged in systematic efforts to grow more wheat. Within Mexico itself, the National Institute of Agricultural Research is active in research to produce still better wheats for Mexico.

Middle Eastern countries, too, are intensifying local efforts. Wheat scientists have been studying at Chapingo to learn the techniques that turned Mexico from a wheat-importing to a wheat-exporting nation. Forty-one scientists from 14 countries have attended the training session since the program was opened in 1961, and most of them are now contributing to wheat production in their own countries.

CORN

The progress in corn improvement in recent years holds great promise for the future: total yearly world production of corn has increased from 138 to 220 million metric tons in the past decade. Although the bulk of this increase was made in Europe and North America, figures from Mexico, Rhodesia, Thailand, and India show what can be accomplished with well-organized, production-oriented research, experimentation, and extension in the underproductive areas of the world. At the present time Asia, Africa, and Latin America account for only about 50 million tons of the world total, but a closer look at countries where corn programs have received national attention reveals some remarkable advances: Mexico has increased

World corn production is increasing steadily; in the developing nations 50 million tons are produced annually, primarily for human food. But production efficiency, as measured by yields per hectare, differs widely. Programs such as this cooperative Foundation project in Thailand aim at increasing yields through the use of superior breeding materials and proper management practices.

Photograph Excised Here

its production over 75 per cent in the past two and a half decades; production in India has more than doubled in the space of ten years; in Thailand it went from 31 thousand tons to an average of 721 thousand between 1961 and 1964, with average yields per hectare rising more than 230 per cent; Rhodesia's production has risen about 213 per cent. Corn obviously has enormous potential. By encouraging more intensive local efforts and supporting broad international and regional programs, The Rockefeller Foundation is aiming to help other underdeveloped countries make comparable advances in corn production.

Foundation work on corn is mainly concentrated within the International Maize and Wheat Improvement Center in Mexico. Working closely with Mexican agricultural agencies, the Center provides new knowledge about corn improvement and identifies genetic materials useful throughout the tropical belt. Scientists at the Center's corn bank—the largest collection of genetic materials in the world—are constantly at work evaluating the plant materials, forming new complexes, and working out simplified methods of combining them effectively. Six basic complexes have been developed from the more than 250 races of corn known in Latin America, and these have been widely distributed throughout the world to corn breeders contending with different problems of soil and climate, plant enemies, and traditional management practices. From these complexes, breeders can develop locally adapted corn with more ears on a plant, higher quality protein in the kernel, and sturdier stalks to withstand wind, rain, and hail storms; corn which is faster to ripen, responsive to fertilizer, resistant to local insect pests and plant diseases, hardy in dry weather or damp, adapted to different types of soil, and more suitable—as the farmer chooses—for food, flour, or animal feed. Various crop management and handling and storage methods are also being tested locally.

Two regional corn programs in Latin America—one covering Central America and the Caribbean and the other the Northern Andean zone—extend the work of the International Center southward. Foundation scientists assigned to these programs work through various local government bureaus, university faculties, and autonomous agricultural agencies.

An inter-Asian corn program which grew out of the Foundation's cooperative agricultural program in India now includes work in Thailand and the Philippines, and, to a limited extent, Nepal, Pakistan, and Malaysia. A Foundation corn specialist formerly based in India recently set up a regional headquarters in Thailand to coordinate the efforts of cooperating agencies in the entire area.

In Africa, where no regional organizations exist—in Kenya, Ethiopia, and the United Arab Republic, for example—the Foundation works through

national corn programs or through appointment of Foundation scientists to help in creating such programs. In Nigeria, a Foundation staff member recently completed a two-year assignment with the agricultural faculty of the University of Ibadan.

Backstopping these efforts are basic research projects in corn breeding supported by grants to institutions in Brazil, Peru, and Colombia. Research in cytogenetics is receiving aid in Brazil, Argentina, and Mexico. The International Center's work is also linked to Foundation-supported research at several United States universities.

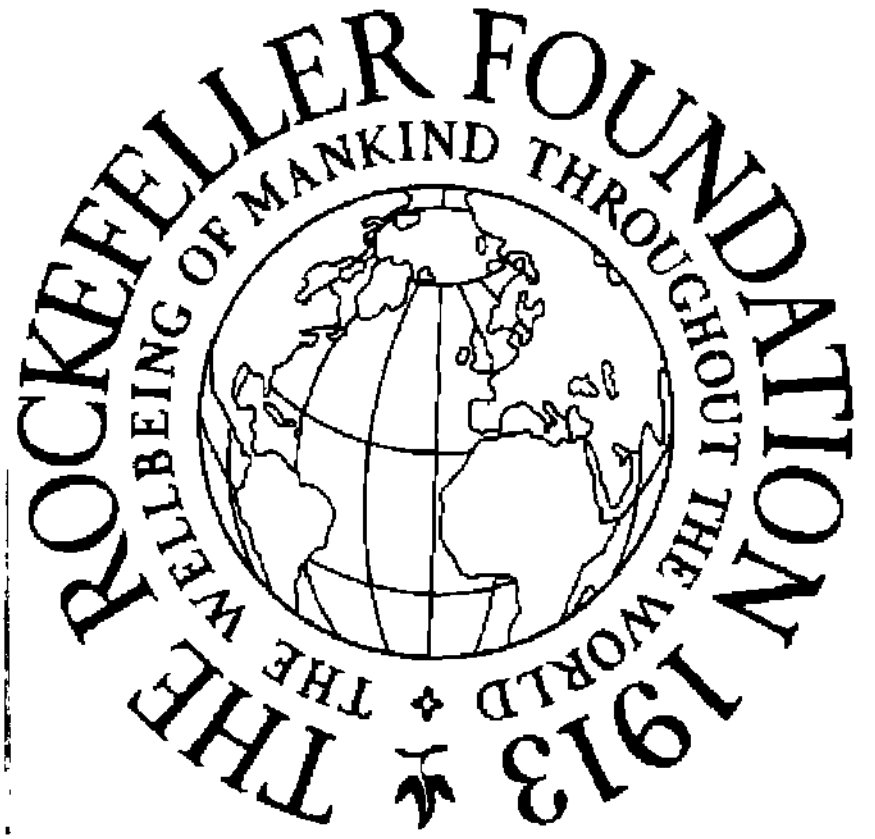
RICE

Rice feeds 60 per cent of the world's people; it is Asia's basic food. Ninety per cent of the total yearly rice crop is grown and consumed there, but it still does not fill the need, and some rice-growing countries have to import rice. If Asia's fast-growing population is to be fed, rice production must be greatly increased in the immediate future. Since there is a limit to the additional acreage that can be brought under cultivation, and since some land now sown to rice would be better used for other crops with higher protein content, the major goal of rice scientists is to increase average yields per unit area, by planting higher-yielding varieties of rice, introducing proper management practices, and by raising more than one rice crop per year on the same land. Progress in these directions is being made, and continuing research promises more for the future.

The International Rice Research Institute, created by the Rockefeller and Ford Foundations with the cooperation of the Philippine Government, has concentrated on most aspects of rice production since the launching of its research program in 1962. Intensive efforts have been made to develop high-yielding strains of rice adapted to the many climates, soils, and cultural practices of the rice-growing areas of Asia, to breed plants with resistance to major rice diseases and pests, to develop chemicals for plant protection, to determine the best agronomic techniques, and to work out efficient handling and storage methods. The formula of a multidisciplinary effort focused on one crop has proven its worth. The Institute has already developed new varieties and methods which are beginning to show greatly increased yields. Tons of seed of the new short, stiff-strawed varieties of rice are being released by the Institute to interested governments, and gains of 50 to 200 per cent are being reported in many locations in India, Pakistan, Malaysia, Thailand, the Philippines, and even in Latin America.

The Institute is also engaged in working out ways to bring rice farmers the new seed, fertilizers, and chemicals, and to teach them how to get the best results with them. Rice scientists and technicians are receiving special-

Rice nourishes 60 per cent of the world's people: it is Asia's basic food. In the Philippines agricultural extension workers from the Philippines' Commission on Agricultural Productivity study rice production at the International Rice Research Institute. They learn first hand the techniques they will later teach to farmers. Here students weed an experimental plot.



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Millets are highly important food crops in areas of the world where moisture is limited. Recently developed hybrids and improved varieties offer new hope for raising this nutritious grain in arid regions.

Photograph Excised Here

ized training in the communications section of the Institute for this purpose, and they in turn train local extension workers on a regional basis.

The work of the Institute has had a wide international impact. Governments of most rice-producing countries are now placing more emphasis on research and on the training of rice scientists and extension workers. One hundred and six scholars and 35 fellows from 16 countries have received in-service training at the Institute in the past four years. At the same time, governments are encouraging the private manufacture and distribution of the vitally needed technical inputs, and are recognizing the need to develop credit and incentive systems to encourage farmers to plant the new high-yielding varieties and to employ the appropriate methods of cultivation. The Institute and the Rockefeller and Ford Foundations are assisting in these initiatives at the request of the countries concerned.

A major effort is being made by the Philippine Government, in close cooperation with the Institute, to achieve self-sufficiency in rice, and scientists feel confident that this can be done within the next three years. The Rockefeller Foundation was requested to appoint a scientist to serve as joint coordinator of the All-India Coordinated Rice Improvement Program; the Foundation also assigned a staff member to Thailand to serve as head of the national rice breeding program at the request of the Thai Government. Another staff member, now working at the Institute, will go to Latin America in 1967 to initiate an inter-American rice improvement project headquartered in Colombia. The Ford Foundation has sent rice scientists to Malaysia and Pakistan to participate in similar efforts.

SORGHUM AND THE MILLETS

Unfamiliar as a food cereal in the United States and Europe, sorghum ranks after rice and wheat in the diet of India; the millets—equally exotic in the West—rank fourth in importance. Both crops are food staples in parts of Africa; finger millet, for example, is the basic food of half the people of Uganda. These grains can be raised in dry areas and during dry seasons—as a rotation crop following rice, for example, utilizing land normally left fallow—and they thus occupy an important place in overall planning for the most productive use of agricultural lands. Improvement schemes supported by the Foundation have been devoted to both crops, aimed at developing high-yielding varieties and at determining how best to exploit their peculiar qualities. The maturation period in sorghum, for example, can be manipulated to adapt to variations of the three growing seasons in different parts of India—the monsoon season, a short interim season, and the dry, hot summer. With varying amounts of irrigation, three sorghum harvests can thus be made. Pearl millet can be grown in 90 days

or less, allowing three crops a year to be raised, two in the north of India in the summer and monsoon seasons, and a third during the winter in the south.

A Foundation sorghum specialist was stationed in India in 1957, the year that the Foundation began its program of cooperative agricultural research there; three staff members have been actively engaged in the sorghum research project of the Indian Council of Agricultural Research. A Foundation scientist has also been acting as coordinator of the All-India Coordinated Millets Improvement Scheme.

The cooperative sorghum program in India has been devoted almost exclusively to the development of hybrids, and results to date indicate that yields can be increased up to 75 per cent in some regions. Two superior, widely adapted hybrids have been released, with a "package" of agronomic practices recommended by the project. A collection of sorghum germplasm has been established, and a multidisciplinary, production-oriented approach to research has been introduced.

Sorghum projects are also under way with Foundation cooperation in Uganda, Colombia, and Mexico, with plantings of Mexican seed in six Central American countries. Sorghum in the New World is of particular interest for dry and marginal lands where corn cannot survive.

A major Foundation grant was made this year to the University of Nebraska for sorghum research aimed at increasing understanding of the factors affecting yield in areas of both favorable and marginal climate. A new approach is being used in which critical tests are made directly in the field, on competitive populations rather than individual plants. University engineers have developed devices to measure plant responses under varying conditions. This program, projected over five years, is also expected to serve as a training ground for specialists from foreign countries where sorghum is an important food crop.

Work on the millets is concentrated mainly in India, where 8.5 million tons a year are produced. The first superior varieties of pearl millet, India's leading species, are already available, and prospects are that yields of finger millet, the next in importance, can also be increased substantially. A world collection of millets is being made, and present genetic stocks total about 5,608. From this collection, material has been furnished to breeders in the Philippines and Uganda. Varietal improvement, agronomic practices, crop protection, and nutritional studies are all receiving attention, and, for the pearl millets, are well advanced.

POTATOES

Of the 12,000 known plant species, man uses only about a dozen to supply most of his food. The potato is one of the top five, with highest concentration

Potatoes, a basic food crop in the Andean region, are becoming more important in the agriculture of other high-elevation areas of the tropical world. The development of disease- and frost-resistant varieties is increasing yields for many highland farmers. Foundation scientists have cooperated in the testing of potatoes in Mexico's Toluca Valley for many years.

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in the north temperate zone. It is also a basic item of diet in the Andean region of South America and in other high-elevation areas of the tropics. The Foundation's Inter-American Potatc Improvement Project, now in its fifth year, has devoted major attention to the Latin American countries where potatoes are traditionally important, and it has encouraged the development of a potato industry in countries where production is potentially profitable but has not been sufficiently exploited. The Foundation has worked principally with the Northern and Northern Andean regional units of the Society of Latin American Potato Researchers. The Society is divided into four regional units which exchange information and hold annual meetings and field trips.

Within the Northern unit, Mexico's achievement serves as a demonstration of what can be done in other countries: potato production has trebled in the past 15 years, largely through the use of improved varieties, certified seed, more fertilizer, and other better production practices. Following systematic extension efforts, small farmers in areas where the potato was virtually unknown ten years ago are now successfully growing the new blight-resistant varieties. The Foundation has also been instrumental in introducing blight-resistant potato varieties in Guatemala and Costa Rica, and in establishing potato production in the highlands of Panama.

Research in Mexico is being carried out in cooperation with most of the important potato-breeding programs of the world. The Solanum Germplasm Collection, a cooperative enterprise of the National Institute of Agricultural Research and the Inter-American Project, contains living material of nearly all of the 40 or more species of wild potato that occur in Mexico and nearby countries. Tubers or seed, or both, of more than 800 clones are available for experimentation. Foundation scholarships and travel grants this year enabled several scientists from foreign countries to visit the Mexican project for observation or study.

The Foundation's activities in the Northern Andean region are headquartered in Colombia. This cooperative program dates back to 1951, and now involves 14 Colombian research scientists and a resident Foundation staff member. Price fluctuations in potatoes are a problem in Colombia, and in consequence efforts are being concentrated on increasing yields and reducing costs of production, in order both to lower and to stabilize prices. This is being approached through improvement of varieties and seed quality, technological improvement of production, and use of better storage practices. To date six improved potato varieties have been released.

Major research is currently focused on virus diseases of potatoes and on the breeding of hybrids which combine high levels of resistance to late blight with good agronomic characteristics; work on frost tolerance, insect

resistance, seed production, and weed control is also in progress. Foundation-supported research at the University of Wisconsin is related to the Colombian-based program, which includes Ecuador and Venezuela.

ANIMAL SCIENCES

Livestock and poultry production are systematically exploited in temperate-zone countries to provide high-quality protein foods in great variety. In the underdeveloped nations, however, particularly in the tropics, where protein shortages are acute, animal production does not contribute nearly as much as it could to basic food needs. Stockmen do not have the basic scientific and technical knowledge needed to obtain higher production levels. Much of the knowledge about beef and dairy cattle acquired by the developed nations is not transferable to the tropics, and before animal scientists can help ranchers in these areas improve their herds, they must have more information about such factors as tropical diseases and parasites, the responses of temperate-zone breeds to hot and humid climates and to high altitudes, and the many problems involved in reproductive efficiency and improvement of animal nutrition. The Foundation is supporting research in livestock production and veterinary medicine in the developing countries in several ways: through cooperation with the animal sciences program of the Colombian Institute of Agriculture, through grants to support veterinary schools in various countries of Africa and Latin America, and through support of special research projects.

The work in Colombia is being carried out at several experimental stations, in widely varying ecological zones, and its findings are expected to have broad application to livestock problems in other tropical regions. A major goal is to improve beef production. Animal scientists believe that cattle can be raised to marketable size in much less time than is now required. Producers in the United States normally expect to market cattle at two years of age or less, at weights of almost 1,000 pounds, whereas in Asia, Africa, and Latin America, it may take up to six or seven years to get live weights of 500 to 600 pounds. Reproductive rates can also be raised in the tropics. In the developed nations a calf crop of 80 to 85 per cent is normal, whereas the rate rarely exceeds 50 per cent in developing countries. Animal breeding programs are being conducted in conjunction with improved management procedures and nutrition experiments designed to maximize growth and reproductive efficiency. Parallel experiments are being carried out with dairy cattle, and programs dealing with sheep, swine, and poultry production are also in progress. In Ecuador, the National Institute of Agricultural Research is conducting a swine raising program with the cooperation of Foundation scientists.

The problems of food shortages in tropical regions, and particularly protein deficiencies, lend considerable immediate importance to studies of livestock production. Within the diversified animal research program in Colombia, management of beef cattle occupies a prominent place.

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Losses from disease limit the efficiency of farm animals. In Colombia special emphasis in the animal disease research program is being given to the important group of blood-borne parasitic infections including anaplasmosis, piroplasmosis—the two most common—and trypanosomiasis. Field and laboratory studies are being conducted evaluating vaccines for foot and mouth disease. Another major area of research in Colombia concerns the internal parasitic infestations. An important grant was made this year to the University of East Africa for use by the University College in Nairobi, Kenya, for research into means of vaccinating cattle against East Coast fever, a hemoparasitic disease which causes severe losses throughout East Africa. There is hope that if a satisfactory immunization procedure can be developed against the parasite of this disease, it will point to means of protecting herds against other blood-borne protozoan infections.

Through support to veterinary schools, the Foundation aims at contributing to the education of local animal scientists and auxiliary personnel to carry forward research and to improve livestock industries on a national and regional basis. Since 1949 the University of San Marcos in Lima, Peru, has been receiving Foundation aid to strengthen its Faculty of Veterinary Medicine, and it has now instituted a postgraduate degree program, the first of its kind for veterinarians in Latin America. This Faculty trains graduate veterinarians from all over Latin America, many with Foundation assistance.

In West Africa, grants were made to aid in the development of the Departments of Animal Science and Veterinary Medicine at the University of Ibadan, Nigeria. Similar assistance was given to the University of Chile, Santiago; the National University in Bogotá, Colombia; and the University of the State of Veracruz in Mexico. Three grants to universities in the United States are supporting research aimed at a better understanding of the process of ruminant nutrition.

NUTRITION—PROTEIN SOURCES

Hunger is a matter of food quality as well as quantity—a diet without protein is a close analog of famine. Nutritionists have been working for years to find cheap, palatable, protein-rich foods which can be produced on a large scale and efficiently introduced to malnourished populations. Fish from impounded waters, long known to the people of Southeast Asia, is one potential source which could be susceptible of greater development through research and modernization. Two major Foundation grants were made this year in support of fish culture projects, one to the Joint Commission on Rural Reconstruction in Taiwan and the other to the Philippine Fisheries Commission.

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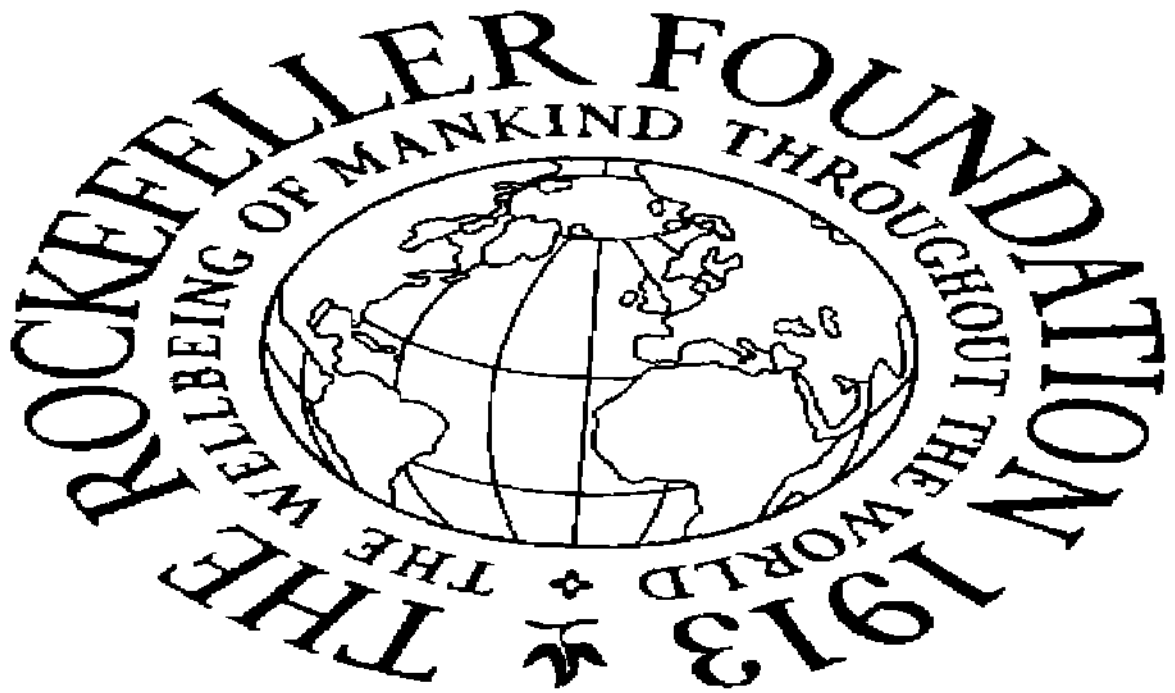
The basic food crops on which most of the world's people must subsist are low in proteins: research to improve the quality of human nutrition must therefore parallel quantitative efforts. The Foundation sponsors nutrition research on many fronts: the scientist at the Taiwan Fisheries Research Institute (*above*) is part of a program to help farmers develop both fresh- and brackish-water ponds as protein-rich food resources. Nutrition and child-health projects are under way in a number of rural health centers, such as this clinic in Candelaria, Colombia, which is affiliated with the medical faculty of the University of Valle.



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Projects supported under these grants include research on fish grown in both brackish- and freshwater ponds—milkfish and mullet, shrimp, oysters, and various freshwater fish. One important goal is to learn how milkfish and mullet can be induced to spawn in artificial ponds, so that the farmers' supply does not depend on ocean fishing. Problems of pond management are also being studied to learn how yields can be increased, and new ponds are being developed, particularly in the Philippines, where the Commission is undertaking the conversion of 900,000 acres of mangrove swamp into new pond fisheries. Marine biologists are being trained at both centers, to spread knowledge of the new techniques throughout Southeast Asia, where both coastal waters and inland lakes and streams can be profitably exploited to supply much-needed protein for growing populations.

Another protein source which has been given increasing attention in the past two years is high-lysine corn. The discovery that high-quality protein can be bred directly into corn, and the possibility that the same may be true of other cereals, hold enormous promise for supplying protein cheaply and efficiently to grain-eating populations. This year the Foundation made grants to centers in Latin America, India, and Southeast Asia for grain analysis in connection with varietal improvement of all the major cereal grains. These are discussed in Dr. Harrar's opening chapter, *Technology and Nutrition.*

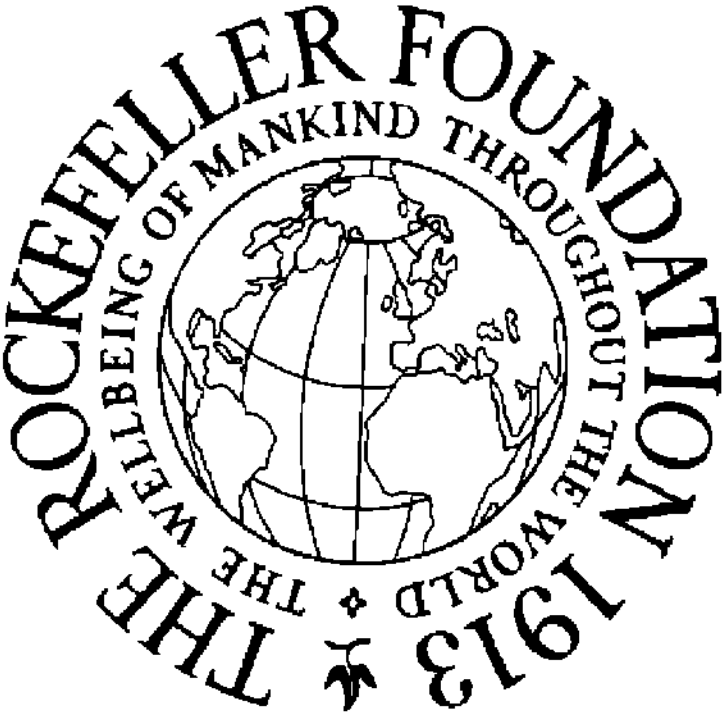
INSTITUTIONAL DEVELOPMENT

Increasing food production in the underdeveloped regions is ultimately the responsibility of each individual country. The Foundation has always held the view that far-sighted assistance consists in helping each nation develop its own research programs, train local scientists and technical personnel, and plan on a national scale to stimulate agricultural and economic progress. Foundation programs to help increase crop and livestock production in the food-deficit areas of the world have therefore always emphasized the development of strong national and regional institutions.

The structural underpinnings of agricultural development are the agricultural colleges and veterinary schools, the university-affiliated or independent research organizations, with their laboratories and experiment stations, and the semi-autonomous and government planning bodies and services charged with economic development. The Foundation has worked with the strongest such agencies in each country through its cooperative agricultural programs, direct grants, scholarships, and special projects.

One of the most effective ways of building strong national institutions has been the assignment of field staff members and specialists to provide leadership in administration, curriculum planning, and development of

Strong national and regional institutions are the structural underpinnings of agricultural development in Latin America, Asia, and Africa. Mexico's agricultural research, education, and extension agencies are being brought together at Chapingo: this new headquarters for the National Institute of Agricultural Research and the Federal Extension Program is adjacent to the National School of Agriculture and its Graduate School.



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research programs in the crop and livestock problems vital to each country—rice in Southeast Asia; wheat, sorghum, and millet in Pakistan and India; wheat and corn in Latin America; animal sciences in Latin America and Africa. National agricultural institutes have been developed in Mexico, Colombia, and Chile on the groundwork laid by the Foundation's cooperative agricultural programs; these organizations are now staffed mainly by local scientists and technicians, many of whom have received in-service training at the Foundation's laboratories and experimental farms or have taken specialized training or advanced degrees abroad on Foundation scholarships. Cooperating programs in India, Thailand, Ecuador, the Sudan, Kenya, Nigeria, and the Philippines are following the same pattern of strengthening national institutions and organizations and training local scientists for eventual leadership. During 1966 the Foundation supported 203 fellows and scholars from 27 countries of Latin America, Africa, and Asia in the agricultural sciences.

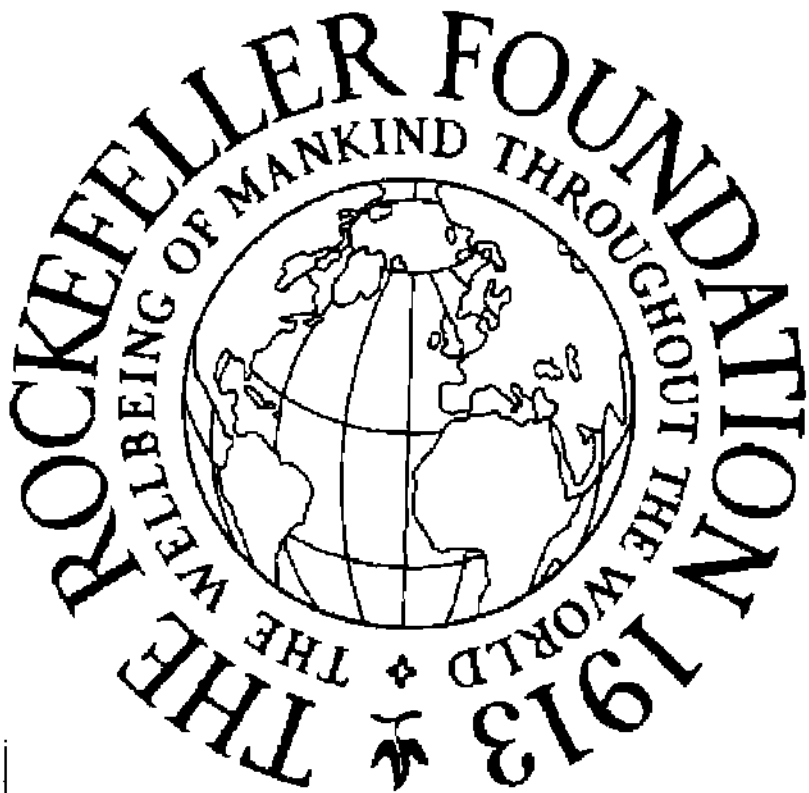
Direct grants made this year to national organizations include appropriations to the East African Agriculture and Forestry Research Organization to augment library resources and services for researchers in Kenya, Tanzania, and Uganda; to the Rural University of the State of Minas Gerais, Brazil, to expand its School of Domestic Science; to the Institute of Agronomy of the State of São Paulo, Brazil, to provide basic scientific equipment for its Tropical Center of Food Research and Technology; to the Agrarian University, La Molina, Peru, to strengthen its program in agricultural economics and rural sociology; and to the Colombian Institute of Agriculture to assist with training and research programs in various Colombian university faculties of agronomy and veterinary science. Many of the grants made in the Foundation's university development program serve to strengthen faculties of agronomy and veterinary science.

In addition to providing funds to assist schools and laboratories, or to equip and modernize existing facilities, the Foundation strengthens local institutions through support to special research projects. This year a grant was made to the University of East Africa to be used by the veterinary faculty of the University College, Nairobi, for research to develop a vaccine against a cattle disease which causes major livestock losses throughout East Africa. Grants have been made in the past to universities in Colombia and Chile for research in nutrition; this year protein analysis laboratories were set up in institutions in Mexico, India, Colombia, and Thailand.

SCHISTOSOMIASIS CONTROL

In many tropical and subtropical countries, a disabling parasitic disease called schistosomiasis follows in the wake of agricultural development,

Scientists in St. Lucia, West Indies, are engaged in a long-range research program into means of controlling schistosomiasis, a widespread parasitic disease. The new laboratory for the project, built on Morne Fortune, 800 feet above the town of Castries, was dedicated this year.



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seriously jeopardizing its benefits. The disease is linked to lack of sanitation in rural areas and to the presence of a species of freshwater snail vital to the life cycle of the parasite. When watercourses where the snail can multiply are extended for irrigation of dry lands or drainage of heavy-rainfall areas, the danger of schistosomiasis spreads. Not long ago an important irrigation project in Rhodesia had to be abandoned ten years after its inauguration because of the severity of the infection.

The disease, which cripples adults and may be fatal to children, can infect whole populations. It is estimated that in parts of Egypt 100 per cent of the rural population over two years old carries the disease. It is also prevalent in the Far East, Africa, the Middle East, Eastern South America, Puerto Rico, and the Leeward and Windward Islands of the Caribbean. With the great reservoirs and river projects planned in Africa and the development of irrigation systems in many other parts of the world, the problem of schistosomiasis assumes major proportions.

The Rockefeller Foundation made recent grants to Harvard and the Johns Hopkins Universities to support research into various aspects of the disease, and last year a coordinated campaign was launched in cooperation with the Government of St. Lucia, West Indies, to seek means of controlling it throughout the island. As this long-range project makes headway, it is sure to bring about major changes in the lives of the inhabitants. The control of a widespread endemic disease is certain to have far-reaching consequences, particularly in a locality like St. Lucia, where over 90 per cent of income is derived from agricultural production. An analysis of the possible social and economic effects of the control program was undertaken this year under a Foundation grant to the University of Wisconsin.

AGRICULTURAL ECONOMICS

Fundamental to the production of larger and more nutritious food crops are perceptive government policies regarding agriculture in relation to the overall social-economic framework. This requires research and planning by many specialists, particularly economists familiar with land, labor, capital, and marketing problems of developing nations. Two grants exemplify the varied nature of the social and economics components of the conquest of hunger: Professor Thomas T. Poleman of Cornell University will direct research on tropical Africa's problems, the result of rapid urbanization, as they affect nutrition and agriculture; Professor Gilbert F. White of the University of Chicago will, under the overall auspices of the National Academy of Sciences, draw up guidelines for some of the large-scale research studies now under way to identify and cope with expected consequences of the creation of the world's largest man-made lakes on the continent of Africa.

The services of specialists from many fields other than the agricultural sciences are required to base agriculture soundly within a nation's overall economy. Professor Gilbert F. White of the University of Chicago is a leading geographer who serves as chairman of the Subcommittee on the Development of Water Resources of the National Academy of Sciences' Africa Science Board. This year the Academy launched a multidisciplinary program dealing with the problems and potentialities of the four major reservoir projects currently under way in Africa. A Foundation grant supports selected research projects.

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PROBLEMS OF POPULATION

Each year the population of Asia and Africa increases by about 2 per cent; in Latin America, the increase is considerably higher, an estimated 3 per cent. This compares to estimates of 1.6 for North America and 0.9 in Europe. In the developing countries the crude birth rate ranges from 39 to 50 per thousand of population, as compared with 17 to 25 in the developed nations. A breakdown within the underdeveloped areas shows a contrast in the birth rates of the lower and higher economic groups—for example in Chile, where statistical services are excellent, figures for Santiago show a birth rate of 40 per 1,000 among the poor and 20 per 1,000 in the middle classes. The amount of education, access to family planning information, ability to pay for medical advice and for contraceptives, as well as cultural and social attitudes all contribute to population patterns and must be taken into account in considering means toward population stabilization. In the light of the risk that if these trends continue a large portion of future populations may live on the verge of starvation, doomed in part by their location on the globe and their economic status, specialists in many fields are intensifying their search for new solutions. More effective approaches to overall population control, with emphasis on those geographical areas which seem most imminently threatened, are deemed increasingly necessary.

Some promising new trends have received Foundation aid in the past year, in particular a move to integrate population studies into an independent academic discipline, based on research in demography and reproductive biology. Another approach which is gaining support involves hospital-based family planning programs. Recent trials with postpartum family planning

Multidisciplinary approach to population problems is illustrated by Dr. Moye Freymann, director of the Population Studies Center of the University of North Carolina. The University this year received Foundation support for a family planning unit, an educational materials center, and a computerized information retrieval service for literature in population.

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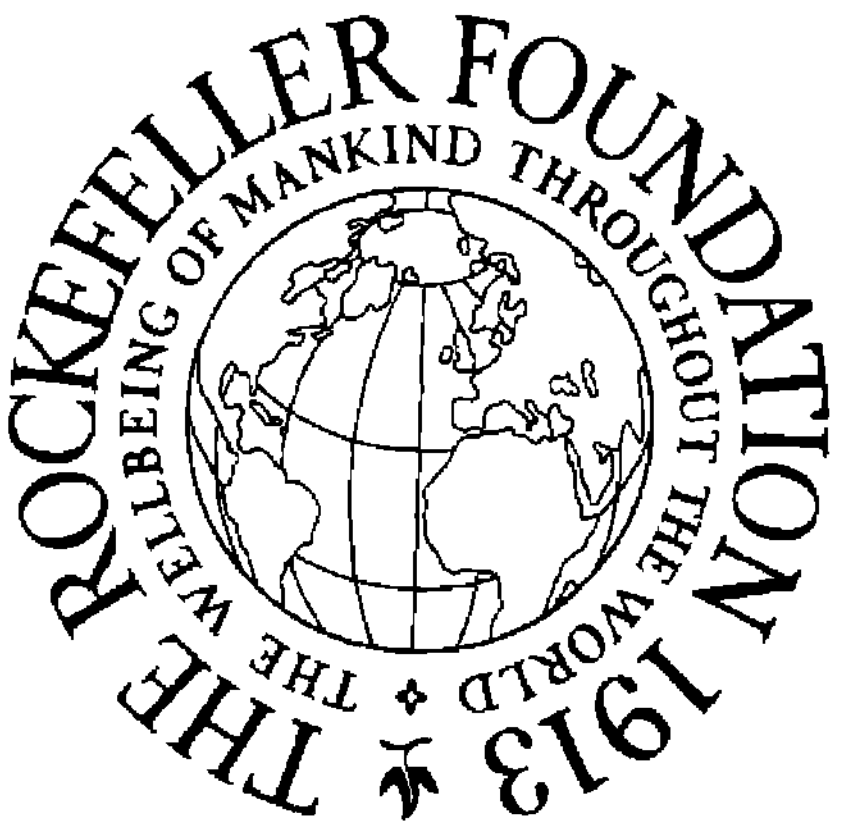
Teaching and research in the population field at Western Reserve University in Cleveland are being integrated in a university-wide program directed by Dr. Kenneth J. Ryan, head of the Department of Obstetrics and Gynecology. Dr. Ryan is conducting research on steroid hormone metabolism and the mechanisms of steroid action.



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have shown encouraging results, and have led to the launching of an international study to test the effectiveness of such measures on a larger scale.

Established programs proven effective in the past received renewed support: training of population workers from abroad to staff local centers and to interpret family planning information in terms of the values and concepts of their own people was continued through support to fellowship programs on two levels—one for postgraduate fellows in demography and the biomedical sciences, and the other for auxiliary workers and paramedical personnel. As national and regional institutions within the developing countries themselves have begun to take more initiative in population work, grants have been made in support of demographic surveys, family planning clinics, and training centers.

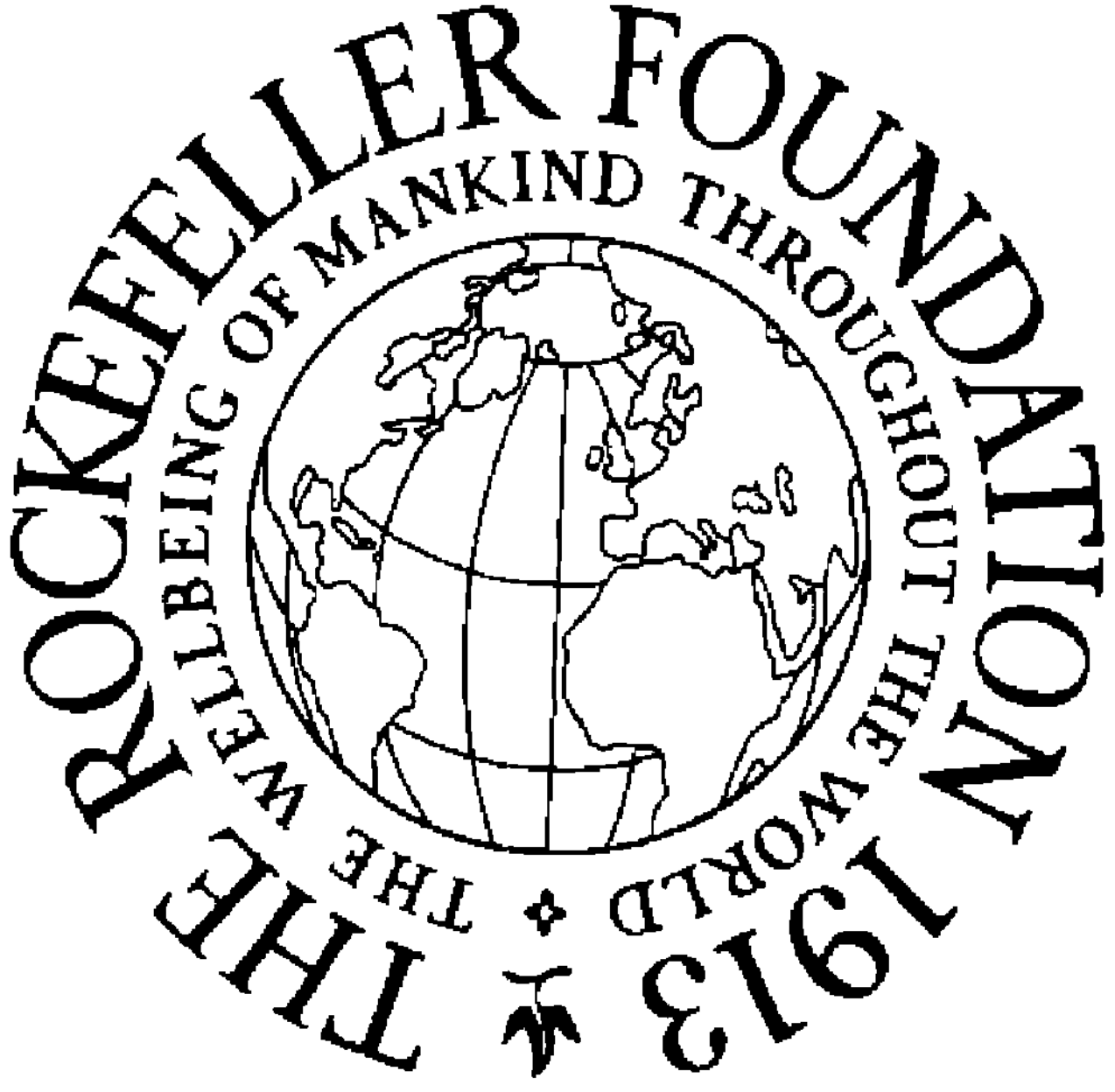
Basic research in human reproduction in progress at Columbia University's College of Physicians and Surgeons will be expanded by the construction of new facilities for its recently founded International Institute for the Study of Human Reproduction.

TEACHING AND RESEARCH IN REPRODUCTIVE BIOLOGY AND FAMILY PLANNING

As the dangers inherent in the population crisis have steadily become a universal concern, specialists in widely divergent disciplines have attacked the problem from separate points of view; recently efforts have been made to integrate these approaches in university-wide programs. Important steps were taken this year toward the redefinition of population studies as an independent academic discipline based on research in demography and in reproductive biology. Three Foundation grants made in 1966 support moves in this direction. One is for a unified educational program for population specialists being instituted at Western Reserve University in Cleveland. The graduate and undergraduate curricula are being revised to give family planning the status of a field of specialization within the framework of medical, biological, and sociological studies and to include relevant course work in population dynamics. At the graduate level, Western Reserve University will associate clinical training with study in the biology and sociology of reproduction.

In a parallel effort, the University of North Carolina at Chapel Hill is making curriculum changes in its School of Medicine, where a family planning unit is being introduced in connection with training in contraceptive technology and in medical concepts of population dynamics, as well as with research in reproductive biology and clinical aspects of family planning. A new subdepartment is being created within the Department of Obstetrics and Gynecology for this purpose.

Family planning advice is given to a Colombian mother at the Candelaria Rural Health Center, where the CUIP-sponsored program also collects demographic data and helps train population workers. Candelaria, a rural area in the vicinity of Cali, has one of the highest crude birth rates ever recorded.



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Records kept by the family planning program at the Barros Luco Hospital in Santiago, Chile, are reviewed by Dr. Jaime Zipper (*right*), Dr. Tegualda Monreal (*center*), and a nurse. Birth rates in Santiago, where national family planning efforts have been concentrated, are beginning to show a slight downward trend.

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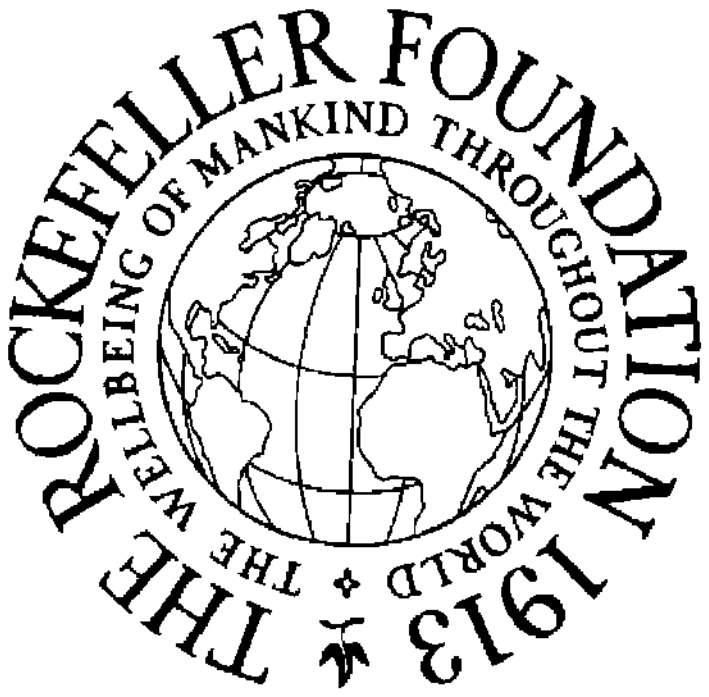

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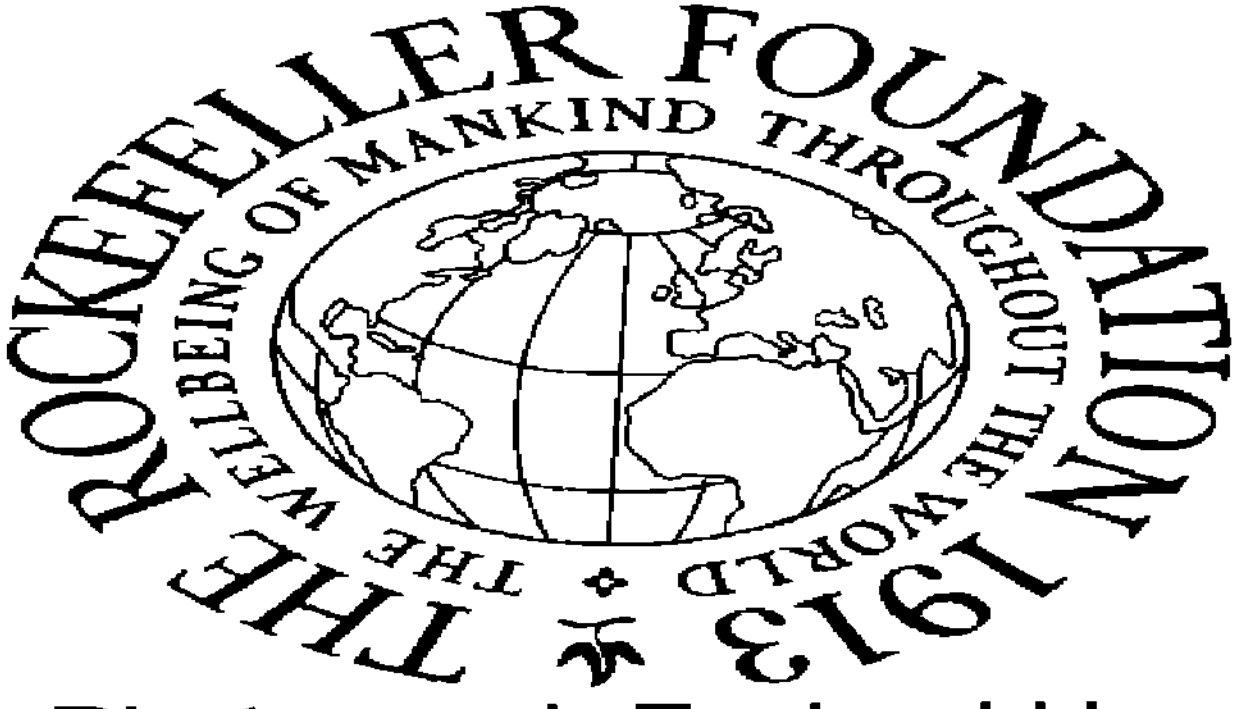
A social worker from a local health center calls on a Santiago family seeking information about family planning (*above*). This family has nine children and an income of about $50 a month. *Below*, explanation of family planning techniques is given to a group of mothers waiting for consultation in an outpatient clinic. Impromptu lectures like this are designed to acquaint women with the family planning program of the Chilean National Health Service.



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Based at the same University is another Foundation-supported project in the preparation of educational materials and the development of a computerized information retrieval service for literature in the population field. The educational aids—films, film strips, video tapes, and other materials—will be used by field units in outlying counties, and in affiliated centers abroad. Family planning work at these stations will be coordinated with research and data analysis in progress at the University. This kind of interdisciplinary cooperation is designed to provide population work with a broader base and to develop more efficient working relationships among its various components; in the long run it is expected to give the field as a whole the significance and prestige necessary to induce more gifted students to specialize in it and make it their profession.

Columbia University's College of Physicians and Surgeons has long been active in research on fertility and various aspects of reproductive biology. A plan has been developed to strengthen Columbia's role in this field and give it an international orientation. The International Institute for the Study of Human Reproduction, organized with Ford Foundation aid, is linked to the University through an advisory committee and is expected to involve other faculties. The Rockefeller Foundation this year appropriated funds toward costs of constructing and equipping a building to house the Institute.

Teaching and research in reproductive biology and family planning are also being supported by the Foundation in selected institutions abroad where population control work can be developed meaningfully in conjunction with academic and medical programs focused on local problems. At the University of Valle in Cali, Colombia, a University Committee for Population Studies (CUIP) was created in 1964 to collect, analyze, and disseminate information, train auxiliary workers, and initiate and coordinate family planning work in overpopulated rural and urban areas. Working in collaboration with the University Hospital, with the Departments of Obstetrics and Gynecology and of Preventive Medicine in the Faculty of Medicine, and with public health field units in the rural district of Candelaria and the city of Cali, CUIP has pioneered population work in an area where birth-rate figures are among the highest in the world. This year the Foundation made two grants for major CUIP projects—one aided in the creation of a family planning clinic in connection with a training center at the University Hospital and the other supported extensive demographic studies. The work of CUIP has done much to draw public and official attention to the need for population stabilization and has set an organizational pattern for similar units established in other major universities of Colombia under the auspices of the Division of Population of the influential Colombian Association of Faculties of Medicine.

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Demographic research in conjunction with training at the graduate level is carried out by the Center for Economic and Demographic Studies at the Colegio de México (*above*). Training in clinical research in the biology of reproduction and fertility control is made possible through Rockefeller Foundation funds made available to the Population Council for postdoctoral investigators such as Dr. Kiyoshi Sunaga (*below*).

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In Chile the population work of the Department of Preventive Medicine of the University of Chile was considerably expanded this year with the aid of two Foundation grants. In addition to a hospital-based family planning study in Santiago, the Department is setting up several demonstration centers in the Central Valley of Chile, where about two-thirds of the country's entire population is concentrated. This University Department has been responsible for one of the most active family planning programs in Latin America, and recent figures show a downward turn in birth rates and in illegal abortion rates in Santiago.

Other appropriations for population studies abroad included support of the Reproductive Physiology Unit of the Indian Council of Medical Research, located in Bombay, and a grant to the Dar es Salaam School of Medicine in Tanzania for population research.

TEACHING AND RESEARCH IN DEMOGRAPHY

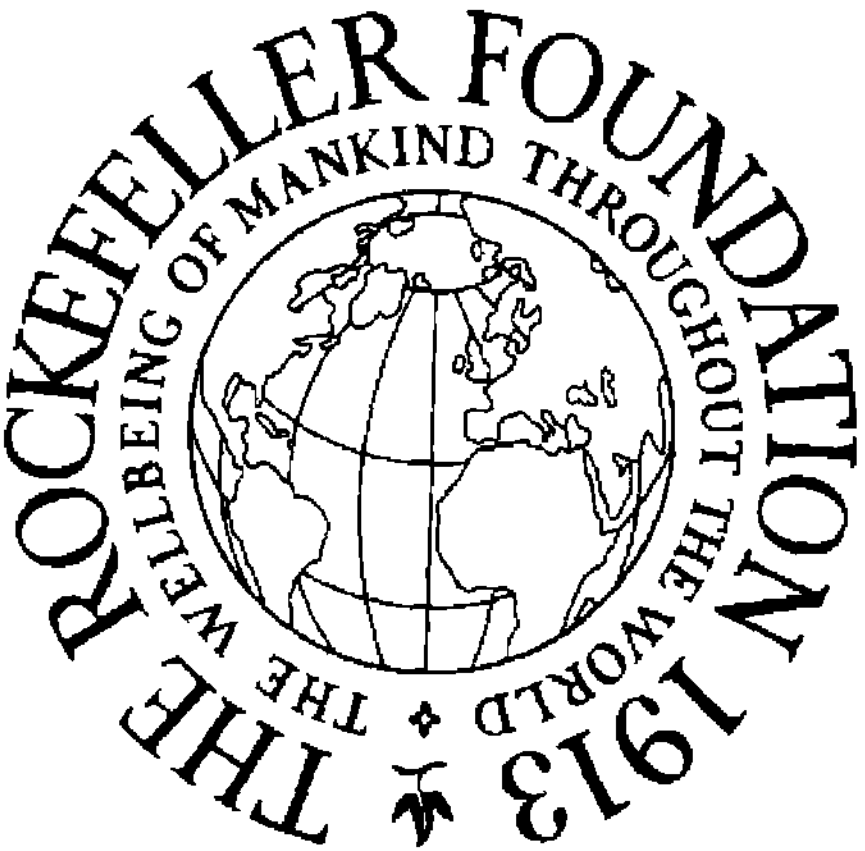
Many of the grants made for research and training both in the United States and abroad include a strong component of support for work in demography. Since 1958, 330 grants have been made to 245 fellows in demography under the Population Council's Foreign Fellowship Program which is supported by the Foundation. The Council plans to award a yearly average of at least 30 fellowships in demography over the next five years. Previous Foundation grants to Harvard and Princeton Universities, to the University of Michigan, the University of Chicago, the University of California, Miami University in Oxford, Ohio, and the London School of Economics have supported demographic studies.

A grant made this year supports research at the Colegio de México in Mexico City, centering around the economic and social implications of Mexico's rapid population growth. These studies are being made in connection with graduate training in economics and demography in the only program of its kind in the country.

TRAINING PROGRAMS FOR PROFESSIONAL PERSONNEL

A number of the developing countries have formulated national family planning programs, but most still lack the necessary personnel to implement them. Over the past nine years, the Population Council has provided scholarships, with Rockefeller Foundation aid, to enable selected students of family planning from countries of Asia, Africa, and Latin America to study abroad, gradually building up a nucleus of population experts in each country. In India and Japan the program has been so effective that sufficiently strong corps of workers now exist in these countries to carry forward independent training programs; in other areas, however, as population control projects

Program in obstetrics for graduate nurses at the Downstate Medical Center of the State University of New York was expanded this year to include training in family planning. The Foundation provided funds to help support training for midwives and nurses from Asia, Africa, and Latin America.



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gain momentum over the next few years, a great many more people will have to be trained abroad. This program was continued in 1966, with grants being offered to foreign students in demography and in biomedical research. Since 1958, some 343 scholars have been trained under these fellowships, and most of them are now working in the population field in their own countries or in international agencies.

In another approach, foreign nurse-midwives are being enabled to study at the Downstate Medical Center of the State University of New York through a grant to the Research Foundation of the State University. The Center's program, carried out in conjunction with the Kings County Hospital family planning clinic, trains ancillary medical personnel to staff family planning centers in areas where physicians are in short supply. The students learn to apply basic family planning techniques and receive general instruction in population problems and in the organization and administration of family planning centers. Authorities estimate that expanding family planning programs will have to rely on such auxiliary personnel for years to come, particularly in areas where basic public health services are still desperately understaffed—a proportion of one physician to every 50,000 persons or more is not unusual in some rural areas in the developing countries. The Foundation grant will provide scholarships for graduate nurses and midwives from Asia, Africa, and Latin America.

HOSPITAL-BASED FAMILY PLANNING PROGRAMS

One of the obstacles faced by population workers in underdeveloped areas is the difficulty of reaching large numbers of women in low-income groups and arranging for them to visit family planning centers for instruction or getting them to keep appointments at hospitals or clinics. In a new approach which circumvents this problem, maternity patients are being taught family planning while they are still in the hospital after giving birth. Preliminary statistics indicate that such hospital-based programs—in which family planning measures are taken in the postpartum period, relying mainly on the intrauterine device—may be an effective way to limit overall population growth. Such programs are being launched on a pilot basis with Foundation aid by the Population Council of New York, in an international effort involving 25 hospitals in 20 cities in 14 countries including the United States. Women entering the hospital for delivery are instructed in family planning and offered a choice of method; close follow-up records are kept. The integration of family planning into routine maternity care will enable population workers to reach a significant percentage of women of childbearing age, since today even in underdeveloped and rural areas most women give birth in hospitals or maternity homes. Furthermore, the available

evidence suggests that measures taken during the postpartum period are the most likely to be effective.

A comparative study based on the same approach is in course at two hospitals in Santiago, Chile, under the auspices of the University of Chile. This project, which is underwritten by the Foundation, will test the effectiveness of insertion of the intrauterine device while the patient is still hospitalized, as compared with insertions planned for 60 days later. The results of these studies, which will involve large enough numbers to yield reliable statistics, are expected to help define the role hospital-based family planning programs might play in lowering birth rates in overpopulated areas.

UNIVERSITY DEVELOPMENT

Seven university centers abroad are currently receiving long-term developmental support from The Rockefeller Foundation: two are located in South America, three in Africa, and two in Southeast Asia. Six of the universities have had cooperative programs with the Foundation for a number of years; these are the University of Valle in Cali, Colombia; the University of Ibadan in Nigeria; the University of the Philippines; the University of Khartoum in the Sudan; a complex of universities in Bangkok, Thailand; and the University of East Africa with its three constituent colleges in Nairobi, Kenya; Dar es Salaam, Tanzania; and Kampala, Uganda. Newly designated this year as a cooperative center is the complex of institutions in Santiago, Chile. These centers differ greatly in size and in strength of the various disciplines, but all share a dedication to academic excellence and a commitment to contribute to community and national development.

Foundation support is aimed at strengthening teaching and research in key departments and at supporting university projects designed to help solve pressing local problems. Arid lands development is a primary focus in the Sudan, for example; veterinary science and economic research have high priority in Nigeria and East Africa; agricultural development and public health are major areas of concentration in Latin America. Within each university there are departments or institutes which are of actual or potential significance as regional or international centers for research and education. Studies in history and economics at the University of Chile, African studies at Makerere University College in Uganda, agricultural sciences at the University of the Philippines, and medical studies at the University of

The **University of Ibadan** is located in Nigerian city undergoing considerable development. Agricultural sciences, economics, and public health programs are oriented toward national goals; teaching is designed to fill the country's need for technical and professional manpower.

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Valle are examples of programs which attract students from beyond the boundaries of their home countries.

The Foundation cooperative university development programs follow a similar pattern in each center. Funds for scientific equipment, library materials, and other basic needs are appropriated in accordance with plans drawn up by the university leadership. In addition, support is occasionally provided for special research or training projects which fall within the scope of the Foundation's major areas of concentration or related interests.

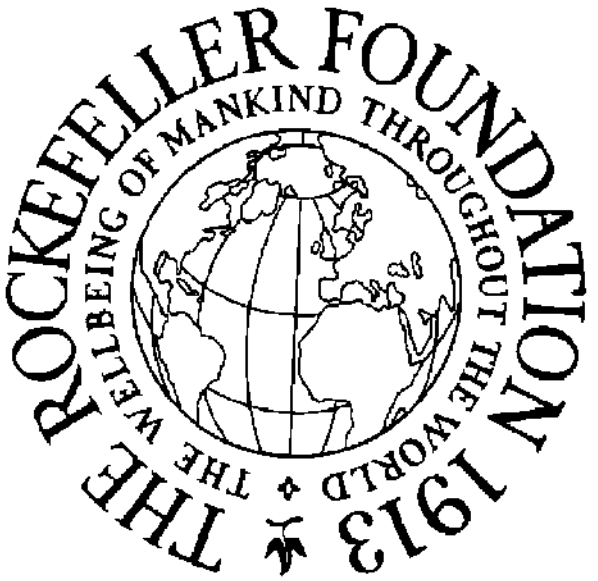
The development of human resources receives close attention in each university. A carefully designed program of fellowships and scholarships for study abroad, travel grants, and awards for scientific or scholarly projects of faculty members is aimed at strengthening university departments and building a corps of local scholars and administrators. Until this goal is realized, the Foundation continues to respond to requests made by the universities for staff members to serve in various departments as consultants or visiting professors. Visiting scholars, research assistants, and professors are also recruited from foreign universities with Foundation aid.

THE UNIVERSITY OF IBADAN

The University of Ibadan continues to hold a very strong place among Nigeria's five universities, and it is likely to become even more effective as the government, despite the gravest internal difficulties, continues to emphasize the improvement of higher education. Its high academic standards and the strength of its faculty place it in a position of leadership; it is also growing into an important center for graduate study. Nigerian scholars with training abroad have returned to the University to join various faculties; they and their colleagues have published an impressive number of scholarly works and as a body have growing influence in international educational circles. Better-qualified students are entering the University in increasing numbers: 2,500 were enrolled during the 1965-1966 academic year.

The Rockefeller Foundation has been contributing to the growth of the University since 1961, with particular emphasis on the fields of agriculture and veterinary science, medicine, the arts, and economics and social studies. Continuing support is being provided for all these areas, with special attention to projects of importance to national development.

In the field of medicine, a pioneering program in rural mental health conducted by the Department of Psychiatry, Neurology, and Neurosurgery is receiving support from the Foundation and other international sources. Another important project of the Faculty of Medicine is research in endemic diseases. Increasing numbers of medical students are being trained at the Foundation-sponsored rural health center at Igbo-Ora, 60 miles from the



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A geography seminar at the University of Ibadan includes Dr. A. L. Mabogunje (*center*), Dr. U. I. Ukwu (*right*), and a Foundation staff member (*upper left*). *Below,* rural health center at Igbo-Ora trains medical students and provides health services to the community. Records kept by the child-care clinic are valuable for the drafting of broader public health programs to combat malnutrition and endemic diseases, and for demographic information and studies which will be used in offering family planning assistance.

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city of Ibadan. Funds were appropriated this year to build a student hostel to accommodate them, as well as to renovate certain facilities of the center and to support staff salaries.

The Faculty of Agriculture, Forestry, and Veterinary Science now comprises seven Departments—Agriculture, Biology, Chemistry and Soils, Economics, Forestry, Veterinary Anatomy and Physiology, and Veterinary Medicine. Production-oriented research on the improvement of maize and forage crops and on nutrition of swine and poultry is being conducted by members of the Faculty; for two years a Foundation staff member assisted with corn breeding. During the past two years, with Foundation aid, the Faculty has developed an excellent experimental farm, and plans are now in progress to clear more land to add to the experimental fields.

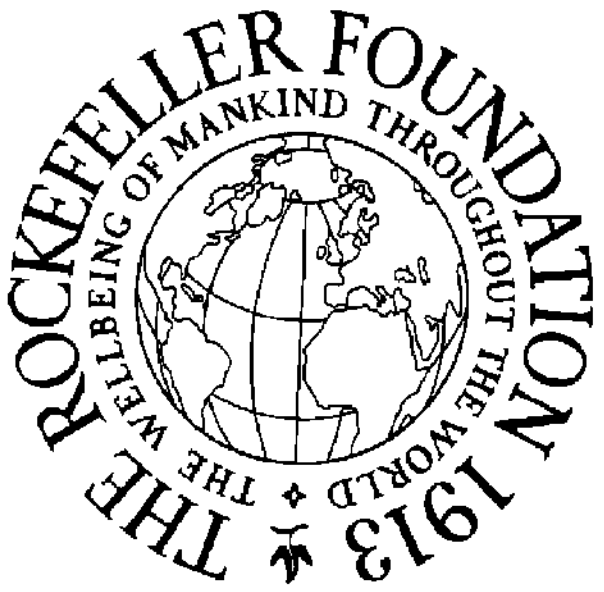
The University's preclinical veterinary training program, launched in 1963 and partly financed by the Foundation, was the first of its kind in West Africa. Enrollment has grown from nine students to 56. This year the Foundation contributed to strengthening the veterinary faculty by providing research fellowships for qualified Nigerian scientists.

The Faculty of the Social Sciences has increased its enrollment dramatically; it now has 300 undergraduates and 22 graduate students. In addition to distinguished Nigerian scholars permanently attached to the Faculty, the University appointed visiting professors, with Foundation aid, to assist with teaching and research. These foreign scholars also participate in the program of the Nigerian Institute of Social and Economic Research which works closely with the Faculty of the Social Sciences, particularly at the graduate level.

In the field of the humanities, Foundation support has been focused on the successful drama program and the Institute of African Studies. In connection with an English language program, instituted this year by the University to improve overall student performance, the Foundation provided funds for the establishment of a reading improvement center and for a language laboratory for spoken English. Support also went to the Data Processing Centre.

THE UNIVERSITY OF VALLE

The University of Valle, located in Colombia's rapidly developing Cauca Valley, has been a focus of Foundation interest and support since 1961. Steadily moving forward into positions of academic and community leadership, the University during 1966 undertook a major reorganization and modernization of its entire administrative structure, from the Board of Trustees to the financial, maintenance, and student counseling services. Under its new rector, Dr. Alfonso Ocampo Londoño, the University is meeting the continuing challenge of providing for the educational needs of a fast-



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Students at the **University of Valle** use modern equipment for language study (*above*). *Below*, young Colombians studying economics are kept in close contact with research on the development of the Cauca River valley. The Division of Social and Economic Sciences offers undergraduate training and Master's degree programs in three fields.

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Dr. Gabriel Velázquez Palau, Dean of the Faculty of Medicine, is one of the men largely responsible for its success. Since 1958 the Faculty has graduated 240 students and trained 357 graduate students as residents in the University Hospital. A third of graduate students now enrolled come from other countries, evidence of the medical school's high repute.

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growing student body, as well as providing services for regional development and contributing to social and cultural activities. All faculties reflect this community involvement: Humanities in music and the arts; Engineering in research for industry and in the problem of Cauca River pollution; and Economics in graduate education, agricultural economics, and contracted services to industry. The Division of Health Sciences provides 67 per cent of the medical care for residents of Cali and 40 per cent of that given in the whole state of Valle. The role of the Division of Education in pre-university schooling throughout the state is increasingly influential, and the Faculty of Architecture is attacking problems of urbanization and low-income housing in a city whose population has nearly doubled in the space of ten years.

Strengthening academic studies has been the University's prime concern. One of its outstanding accomplishments has been the pace-setting General Studies Program required of all entering students, now widely adopted throughout Colombia as well as in many other parts of Latin America. The Division of Social and Economic Sciences has a new and integrated undergraduate curriculum, a graduate program in industrial management, and a research program oriented toward current problems. This year two important projects initiated at the Center of Economic Research were a socio-economic survey of the state of Valle and research in agricultural economics dealing with the production unit of the Cauca Valley.

A trend toward coordinating the work of various independent faculties has facilitated teaching and research in several areas: the Division of Sciences, created in February, 1966, brought together departments of mathematics, physics, chemistry, and biology, with the result that a four-year academic program was established, leading to a professional degree in each of the sciences. The Division of Health Sciences, founded last year, combines the Faculty of Medicine, the School of Nursing, several auxiliary training programs and field units, and two teaching hospitals. One hundred thirty-seven students were enrolled in this Division in 1966, and 140 research projects were in progress in the clinical and basic medical science departments.

A significant interdisciplinary effort was the formation in 1964 of the University Committee for Population Research (CUIP), which includes active representatives of most departments of the University. Demographic studies and family planning work are being carried out under CUIP auspices in both urban and rural areas.

Eleven Foundation field staff members in the medical and natural sciences, the humanities, and the social sciences were stationed at the University in 1966, and visiting professorships in nursing, geology, biology, history, and philosophy and literature were facilitated by the Foundation.

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Hybridization techniques for genetic studies and plant breeding experiments are demonstrated on okra plants at the agricultural college in Los Baños by Dr. Dolores Ramirez (*right*), a former Foundation fellow whose doctorate in biochemical genetics is from Purdue University. Undergraduate and graduate studies in the arts, sciences, and social sciences are centered at the Diliman campus of the **University of the Philippines** in Quezon City. *Below, left,* freshmen compare notes in front of the administration building, the traditional landmark of the University. *Below, right,* a medical team from the Comprehensive Community Health Program visits a sick child.

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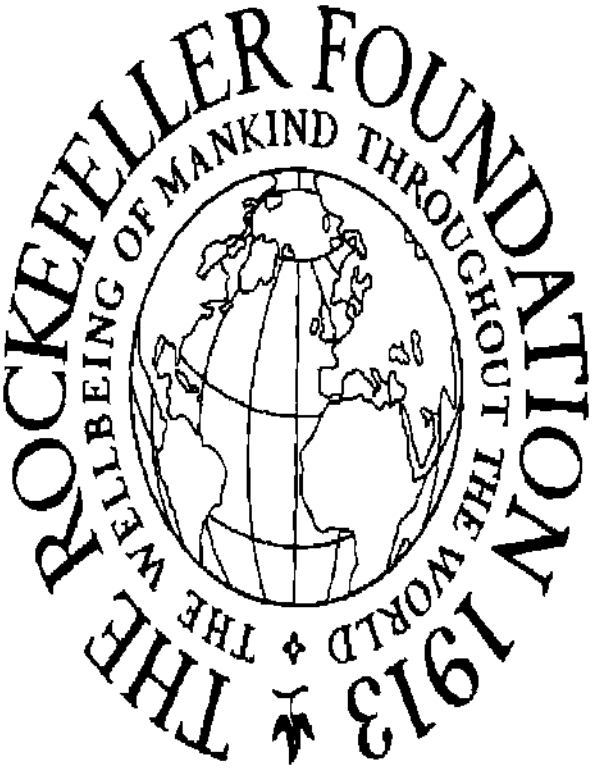

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Public finance is taught by Dr. Agustin Kintanar, Jr., a former Foundation grantee, here shown in an informal class discussion. Specialists like Dr. Kintanar face the dual task of teaching theoretical economics and adapting their expertise to the needs of the country.

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THE UNIVERSITY OF THE PHILIPPINES

The University of the Philippines, under the leadership of its president, Carlos P. Romulo, is becoming an important center of learning and research serving Southeast Asia.

During 1966 the Foundation's program of assisting Philippine scholars and scientists, in force over the past five years, began to fulfill its goal of strengthening the University's faculty. Graduate students and junior faculty members who went abroad to take advanced degrees have now returned home to staff University departments. As in previous years, Foundation aid was concentrated on developing human resources. In all, about 80 faculty members from different disciplines were engaged in advanced studies in American universities. In addition, a number of younger faculty members were awarded scholarships to continue their studies toward Master's degrees at the University of the Philippines. Selected research projects of faculty members in such fields as rural health, fiscal policy, political science, and economic development were also supported.

Funds for general development of University facilities were allocated for library materials and laboratory equipment for science and social science departments, and for equipment for a new building which will house the Social Sciences and Humanities Center. New housing units needed for visiting faculty were also provided, and a grant was made toward the construction of an International Center on the Diliman campus to provide more dormitory space for foreign students.

Philippine graduate work in the agricultural sciences is gaining momentum. The College of Agriculture in Los Baños had 11 students working toward B.S. and five toward M.S. degrees in this past year. Nine of the scholars who received their degrees at the College have obtained or are working for advanced degrees in Europe or the United States. A Foundation-supported program of scholarships and assistantships for Southeast Asians, which between 1958 and 1965 helped 54 students from six countries earn B.S. or M.S. degrees, was continued this year. An average of 15 graduate and two undergraduate students from other Southeast Asian countries are aided yearly under this plan. In addition to general support for its educational and extension programs, the College received funds for various research projects, in particular cooperative research in corn improvement, and for the development of the irrigation system of its experimental station.

In the humanities and social sciences, the keynote has been faculty development. In 1966, 23 Philippine scholars in these fields held fellowships or scholarships for advanced study in the United States. Visiting professors from leading American institutions were requested by the University to replace them on an interim basis. In the past two years the Foundation has

helped arrange visiting professorships in economics, sociology, political science, history, and philosophy. Individual research projects in these fields—for example, a study on financing development in underdeveloped countries—also received support.

Assistance to the medical and natural sciences has taken the form of research aid (primarily scientific equipment and supplies), and scholarships for graduate study. In 1966, 15 faculty members from the natural science departments were studying for degrees—in most cases doctorates—in American universities. Eleven from the College of Medicine and the Institute of Hygiene were also studying in the United States, most of them as postdoctoral research scholars. Scholarship aid for junior faculty and promising graduates planning university careers was also provided.

A further grant was made to help establish a rural community health unit on the pattern of Foundation-sponsored programs at Ballabhgarh in India, Candelaria in Colombia, and Igbo-Ora in Nigeria. The center would be located at Los Baños and would be linked to the extension and community development projects of the College of Agriculture; it would also serve as a teaching and research area for the College of Medicine for work in preventive medicine and rural hygiene and, eventually, for experimental work in family planning.

BANGKOK, THAILAND

The Foundation has been cooperating since 1963 in the development of particular programs in four educational institutions in Bangkok—the University of Medical Sciences, Kasetsart University, Thammasat University, and Chulalongkorn University. In 1966, the program in Thailand underwent dramatic expansion. A complex of science buildings for the new Faculty of Medical Sciences at the University of Medical Sciences took shape, and the facility is expected to be ready for use in 1967. It will provide undergraduate teaching facilities including multidisciplinary student laboratories and graduate teaching and research laboratories for the preclinical departments of the Faculty. Planning has also begun for a new teaching hospital.

A university committee is at work on the organization of teaching and research, on curriculum planning, and on the development of a graduate school. A Foundation staff member in Bangkok is working closely with university officials on administrative and academic planning; the Foundation has helped provide four visiting professors and two research associates currently assigned to augment the Faculty staff. Work in nutritional biochemistry conducted by the Foundation staff member will be coordinated with the Foundation's program for the development of rice varieties with improved protein characteristics, to be based at Kasetsart University.

Chulalongkorn University students arrive for class. Officially established in 1916, the University grew out of a school for royal pages founded by King Chulalongkorn in 1902. Today it comprises seven undergraduate faculties and one institute and enrolls over 6,000; a Graduate School was chartered in 1962.

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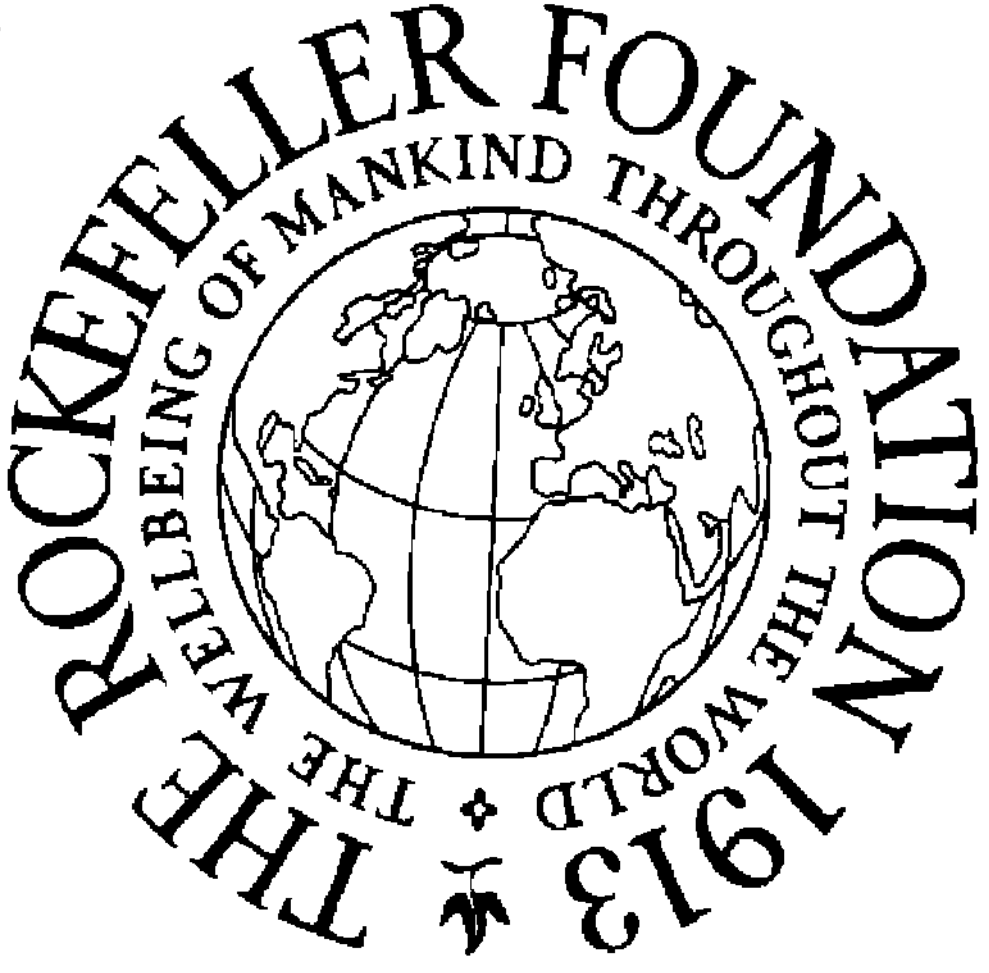
Thammasat University economics instructor (*below, left*) works in the joint office-classroom. The Foundation aided in the preparation of economics teaching materials in the Thai language. *Below, right,* the **University of Medical Sciences** is constructing new buildings.



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A grant to the Ministry of Agriculture and Kasetsart University provided for research and teaching in the agricultural sciences. Two field staff members are attached to the University staff. The Foundation's experience in other parts of the world has demonstrated that education in this field, particularly on the postgraduate level, is best carried out in connection with a viable research program at an agricultural experiment station. Kasetsart University having recently acquired a 300-acre farm, funds were appropriated this year for developing such a station there in cooperation with the rice, corn, and sorghum improvement programs already under way in Thailand.

At Thammasat University a new program has been launched with emphasis on developing the economics faculty and curriculum. A new curriculum, a complete survey of library needs in economics, and a continuing educational program for junior instructors hold promise for future development. Translation of teaching materials from English into Thai has augmented a text on price theory being completed by one of the three visiting professors currently serving on the University staff.

As a preliminary step toward developing a cooperative system of graduate education among the various institutions in Thailand, a study report was prepared by Thai university leaders with the assistance of a consultant, Dean Moody E. Prior, formerly of the Graduate School of Northwestern University, who was appointed under Foundation auspices.

THE UNIVERSITY OF KHARTOUM

The University of Khartoum, an institution which enjoys high prestige in both sub-Sahara Africa and the Arab Middle East, is playing an increasingly broad regional role in research and training. Since its founding in 1956, it has exercised an influence disproportionate to its size, based on the quality of its faculty and on its dedication to academic freedom and integrity. The Foundation has been contributing to its growth through grants for expansion of major departments, especially in agriculture, veterinary science, the basic sciences, and the social sciences; it has helped to strengthen the central library, provided scholarships for advanced study and travel for faculty members, and responded to University requests for professors for both short- and long-term assignments.

The University's preoccupations are closely allied with those of the nation—arid lands research, diversification of agriculture, planning for industry, settlement of nomadic peoples, and other problems of economic and social development peculiar to the Sudan. The University's role in training the technical and professional people needed in every area of national development has led to rapid expansion of most faculties almost beyond their

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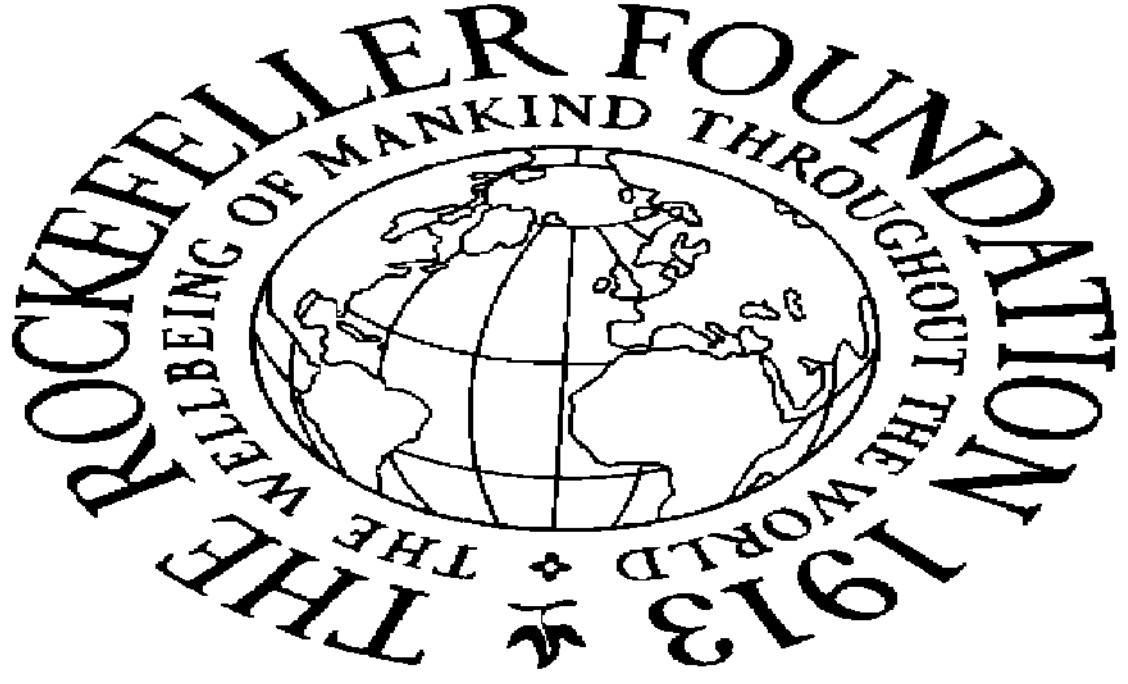
Young Sudanese attending the **University of Khartoum** will have key roles to play in national development. Enrollments are being increased in every faculty to keep pace with the country's need for professional and technical personnel. *Below,* Sudanese scientists examine skeletons of a camel and a horse in the museum of the Faculty of Veterinary Science.



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physical capacity. The current enrollment is somewhat over 3,000, of which 1,170 are first-year students. Key departments are typically handling double the number of students for which they were originally planned.

In 1966 the Foundation appointed a special field staff member, in response to a request from the University, to help work out an interdisciplinary approach to arid lands research. The range of specialties involved is wide, covering basic food crops, livestock, forages, and the agricultural, health, and socio-economic problems involved in the settlement of nomadic people. The University's Sudan Unit, which has received Foundation aid in the past, promotes interdepartmental and interfaculty research and training by members of the Faculties of Arts, Economic and Social Studies, and Agriculture. Its work this year has been closely associated with the arid lands project.

The Sudan's program on cereal grains is being accelerated. Sorghum and the millets are the major food crops, and wheat is gaining in importance. Research on both wheat and sorghum indicates that production could be greatly increased, and the Foundation is encouraging University agronomists to look into various possibilities. Technical and professional personnel to implement large-scale programs are in short supply, however, despite expansion of the Faculty of Agriculture. To help remedy this situation, the Foundation last year made 17 study awards in the agricultural sciences to Sudanese faculty members, and provided 15 travel grants for others to visit centers abroad for observation of crop and animal programs.

Research relating to urgent health problems such as schistosomiasis and protein deficiency diseases in children is in progress at the University, the former under a Foundation grant.

SANTIAGO, CHILE

Rockefeller Foundation associations with institutions of higher learning in Santiago, Chile, date back 25 years. The Foundation's cooperative agricultural program in Chile helped build the Agricultural Research Institute which was chartered by the Ministry of Agriculture in 1964. Two years ago a coordinated program of support was devised to strengthen programs within three of Chile's strongest educational and research institutions and to promote cooperation among them. They are the University of Chile, the Catholic University of Chile, and the Agricultural Research Institute, all located in Santiago. Funds have been provided in the past for support of training and research in medical sciences, economics, history, and the agricultural sciences, including veterinary medicine. This year the complex was designated for continuing long-range support as a cooperative university development center, one of the seven throughout the world selected by the

Foundation as capable of making an outstanding contribution to learning and to national development. Four Foundation staff members were stationed in Chile in 1966, and a number of visiting professorships requested by the institutions were underwritten by the Foundation. In addition, funds were made available for projects in economics, history, agricultural sciences, and medical and natural sciences.

Both the University of Chile and the Catholic University play important roles in the Latin American academic world as international training centers in the field of economics. They have provided visiting professors to other universities and are training economists from all over the continent. The Government of Chile has turned to economists at both Universities for consultation on problems of inflation, debt management, taxation policy, social security, and international trade and transportation. Professors have also been called upon to fill government posts.

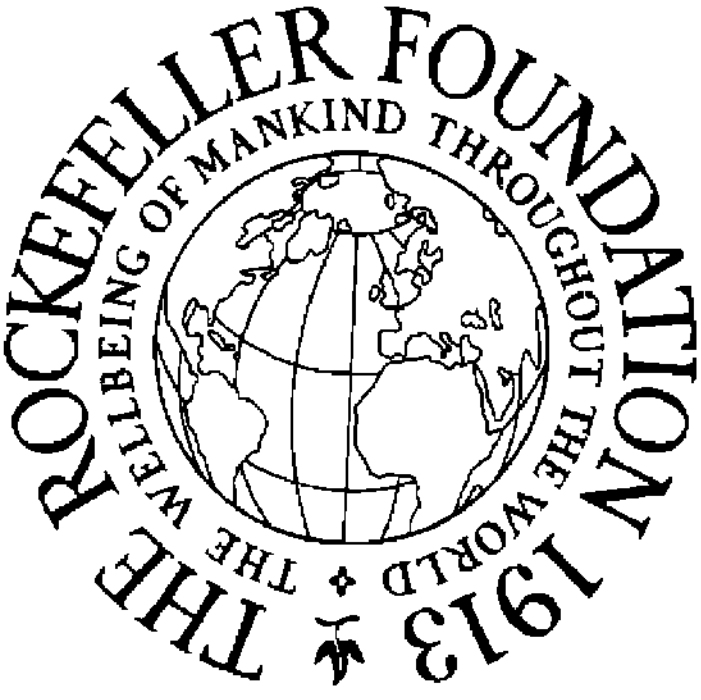
The program at the University of Chile's Institute of Economic Research is oriented toward problems related to economic development in Chile and in Latin America as a whole. In this connection research has proceeded on production economics, the effects of greater economic integration in Latin America on Chilean agriculture, and alternative approaches to land reform. The Faculty of Economics at the Catholic University is also undertaking research directly concerned with national development; 20 per cent of its work is in agricultural economics.

The Center of Economic Studies at the Catholic University has focused research on the effect of the public sector on the distribution of resources in Chile and the effect of trade policies on prices and production in agriculture as compared to industry. These studies are expected to help clarify economic policy of the past and provide the basis on which to formulate measures which will stimulate economic growth.

History is another field in which the University of Chile has an international reputation. The Center of Research on American History, which was established with Foundation aid in 1960, is emphasizing research on social change as part of an overall study of social and economic history in the colonial and contemporary periods. The Center has developed a two-year graduate program leading to a Master's degree, which may well serve as a model for other faculties within the University. Research in this program is focused on Western Hemisphere history, using modern social science methods. In addition to Hispanic American social and economic history, teaching at the Institute includes United States history and basic courses in sociology, demography, statistics and mathematics, and political science.

Foundation funds were appropriated this year in support of training in the sciences at the two universities in the Santiago complex. Faculty mem-

Students of geography at the University College, Dar es Salaam, Tanzania, a component of the **University of East Africa,** examine aerial maps in a study of changing land uses.



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bers in both institutions are working together to strengthen programs in the natural sciences, the physical sciences, and mathematics, to promote interdepartmental and interuniversity collaboration, to integrate undergraduate and graduate education, and to offer more laboratory work in connection with all science courses. In the biological sciences, the two universities have already established channels for student exchanges and laid the basis for a broad program of interuniversity research.

Chile's Agricultural Research Institute, the third component of the Santiago complex, this year received a grant for cooperative research with the University of Chile. Since the inception in 1955 of the Foundation's cooperative agricultural program in Chile—the forerunner of the Institute—a consistent effort has been made to strengthen agricultural education in Chile to complement the research in wheat and forage crop improvement which was undertaken at the request of the Ministry of Agriculture. Close collaboration of university faculties of agronomy and veterinary science with government projects has been encouraged by the Foundation to channel research and training toward applied programs aimed at solving Chile's crop and animal production problems.

Funds to support family planning programs in Chile were appropriated to the Faculty of Medicine of the University of Chile. These projects are discussed under *Problems of Population.*

THE UNIVERSITY OF EAST AFRICA

The University of East Africa, constituted by three institutions located in Kenya, Tanzania, and Uganda, has been receiving developmental support from the Foundation since 1961. The three countries are supporting an arrangement whereby each college develops basic undergraduate studies and shares graduate faculties and professional school facilities with the others. The University is now evaluating its accomplishments and drawing plans for its second three-year plan.

Research and teaching programs are closely bound up with national goals of achieving self-sufficiency in professional and technical manpower, fostering African culture, and building competence in economics, political science, agricultural and veterinary sciences, medical sciences, and the humanities. The Foundation is providing support in key areas by appropriating funds for selected projects and departments, by supporting special field staff to serve on University faculties in response to requests from the colleges, and by arranging for visiting professorships. This year a Foundation grant supported the post of Liaison Officer, an administrator charged with coordinating planning and helping recruit staff for the three constituent colleges of the University.

From the start the University recognized the crucial role played by the social sciences in analyzing problems of economic development, social restructuring, and political change. Training East African graduates, and developing research and teaching with a truly African orientation were given top priority. Three major University centers are engaged in research and training in economics: the Institute for Development Studies at the University College, Nairobi, Kenya, the East African Institute of Social Research at Makerere University College in Uganda, and the Economic Research Bureau at the University College, Dar es Salaam, Tanzania. They are developing research designed to serve national needs, and the Colleges are training men and women for careers in government and public service. In 1966, a Department of Government was established at the University College, Nairobi, within the Arts and Commerce Faculties. Visiting professors supported by the Foundation assisted in planning the curriculum, in designing research, and in recruiting faculty, and the Foundation also provided funds for equipment and library materials.

One of the chief objectives of the University is to develop African leadership in administration, teaching, and research. At the present time, key departments in all three Colleges rely on expatriate faculty as well as on foreign scholars and visiting professors recruited from abroad. Gradual and systematic Africanization of the University staff is being seconded by the Foundation through a three-year program of special lectureships for East Africans, administered by a University committee. These number up to 60 and are primarily for new teachers. In addition, the Foundation is underwriting about 15 special one-year appointments, as well as providing research and training support.

The University also attaches great importance to the promotion of research on African subjects and the full integration of African materials into the curriculum. The Master of Arts Program in African Studies at Makerere University College, initiated in 1963 with Foundation aid, centers on the development and culture of African societies, with special emphasis on East Africa. Representatives of various University departments participate in planning its curriculum and in teaching and directing research in the arts, humanities, and social sciences. Courses include such subjects as social structure in East Africa, problems of economic development, the history of tropical Africa since 1750, Swahili language and literature, visual arts in Africa, and the human geography of East Africa.

Agricultural studies at the University are centered at Makerere University College in Uganda. Its Faculty of Agriculture is expanding yearly in an attempt to keep pace with the need for trained people to modernize and improve East African agriculture. The present staff of 18 is expected to reach

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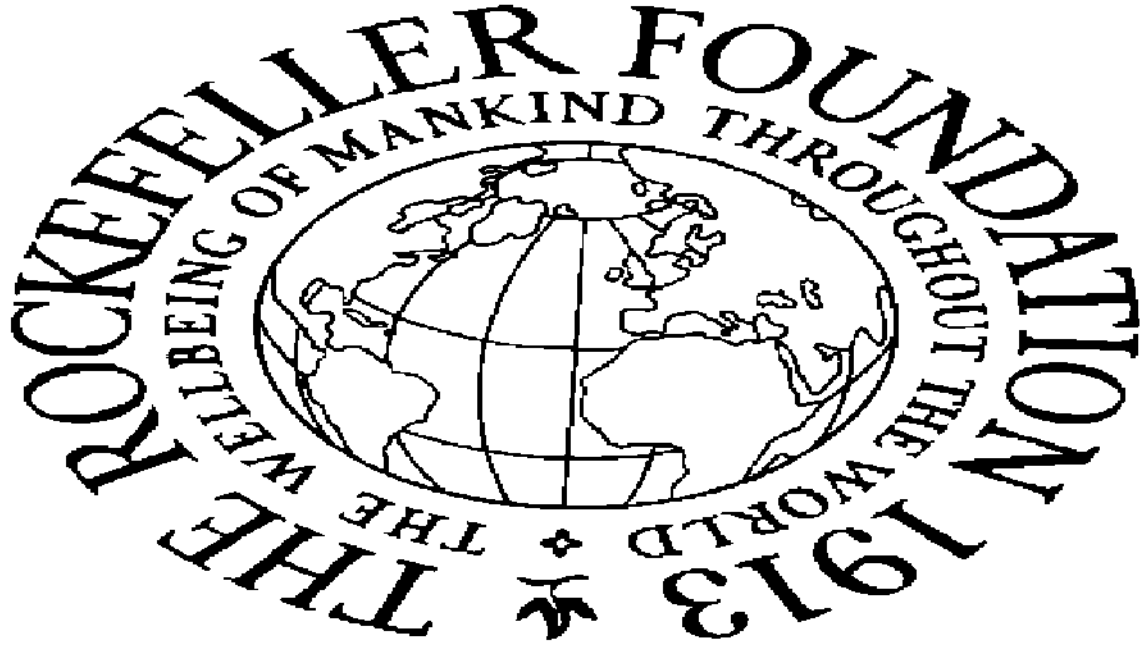
Laboratory workers (*above*) prepare animal tissues for analysis in the Division of Animal Husbandry of the East African Agriculture and Forestry Research Organization in Muguga, Kenya. *Below,* agriculture students try out an experimental tractor with rotary cultivator, developed at the experimental farm of Makerere University College in Uganda.



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30 by 1968, with progressive emphasis on Africanization, and the student body is expected to double in number, to nearly 300 students. Specialized courses are now being taught in rural economy, tropical agriculture, extension methods, and agricultural engineering; graduate-level courses toward M.Sc. and Ph.D. degrees are also offered.

Veterinary science, of capital importance to the development of livestock production in East Africa, is being supported by the Foundation at the University College, Nairobi, where the Faculty of Veterinary Science has developed a strong undergraduate program and initiated graduate studies. In cooperation with the East African Common Services Organization, which has also received Foundation aid, the Faculty plans to found an animal health center to serve the entire region. An important grant made this year supports research in the Faculty into means of immunizing cattle against East Coast fever.

In 1961 a program was inaugurated with Foundation support for development of the rural health center at Kasangati, near Kampala, Uganda, to be used by the various clinical departments and the Department of Social Medicine of the Faculty of Medicine at Makerere University College. Organized by a Foundation staff member, the center aims to develop accurate information about African diseases and to train student physicians in the management of large outpatient services. Continued support was provided by the Foundation this year, with the anticipation that the Uganda Ministry of Health will assume responsibility for the center in the near future.

Funds appropriated for development of the University College in Dar es Salaam, Tanzania, were earmarked for visiting faculty appointments, research in economics, and a developmental research program in geography.

AIDING OUR CULTURAL DEVELOPMENT

For almost two centuries the arts were given relatively scant attention in America. Whatever funds were available came directly from a few wealthy patrons—and indirectly from the artists themselves, who to a considerable extent subsidized the arts at the cost of their own standard of living. It is a mark of the vitality of artistic life in our country that in spite of public apathy and official indifference, the United States assumed after the Second World War a position of international leadership in the world of the arts. Still more recently a much wider section of the public has come to realize that the arts can be a part of the fabric of daily living.

This recent large-scale interest in the arts on the part of individuals, foundations, and government has been so rapid and widespread that it is often characterized as a cultural explosion, and, like an explosion, it has not only released a great deal of energy but also occasioned unforeseen dislocations and problems. It has, for example, created a severe drain on our reservoir of trained people in the creative and performing arts and has overburdened existing organizational structures to such a degree that new ones—such as state and municipal arts councils—have had to be invented.

Overflowing from concert halls and theatres, the performing arts have spread to television and radio and to the streets, parks, museums, churches, and schools. Colleges and universities, long the leaders in making the arts available to students, have expanded their facilities to permit greater community participation in cultural activities. Through their own professional, or professionally trained, performing groups, many colleges are becoming primary centers of art resources.

The cultural ferment taking place throughout America has coincided with a revolution in the art media themselves, a revolution which has affected not just the techniques and forms of the arts, but their aesthetics as well. Thus while new audiences come to the arts, exploring territory previously charted by the creative artists, the artists themselves have established new frontiers. Foundation grants, made primarily in support of creative work, therefore often include components aimed at developing new or better-informed audiences.

The Foundation's program in the arts is in the main concentrated within theatre and contemporary music, with the objective of working out approaches which often reinforce one another. Exploratory grants have been made in support of dance repertory companies, television programming, film making, and an experiment in musical theatre production. Many of the arts projects supported are allied to universities, which provide a frame-

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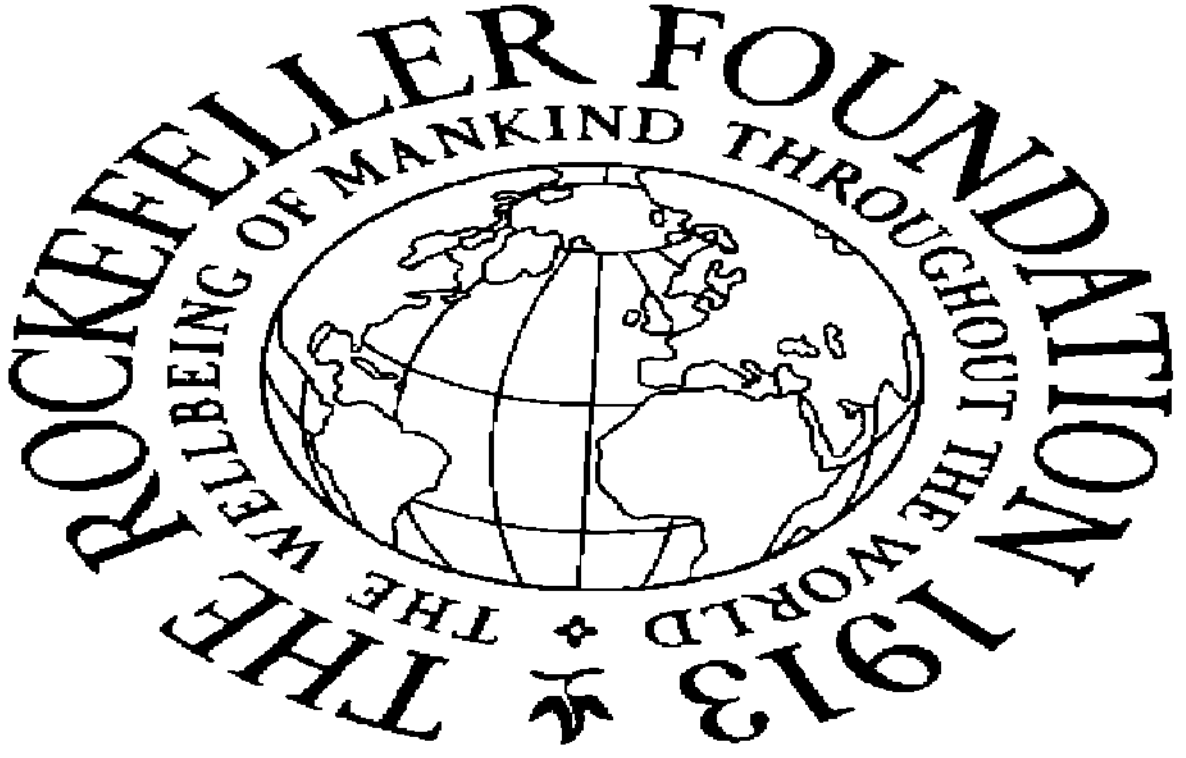
The Marlboro Festival in Vermont, founded by the piano virtuoso Rudolf Serkin (*below, left*), has become a highly successful experiment in bringing together outstanding musicians, such as Pablo Casals (*above and right*), resident composers, and especially gifted students.



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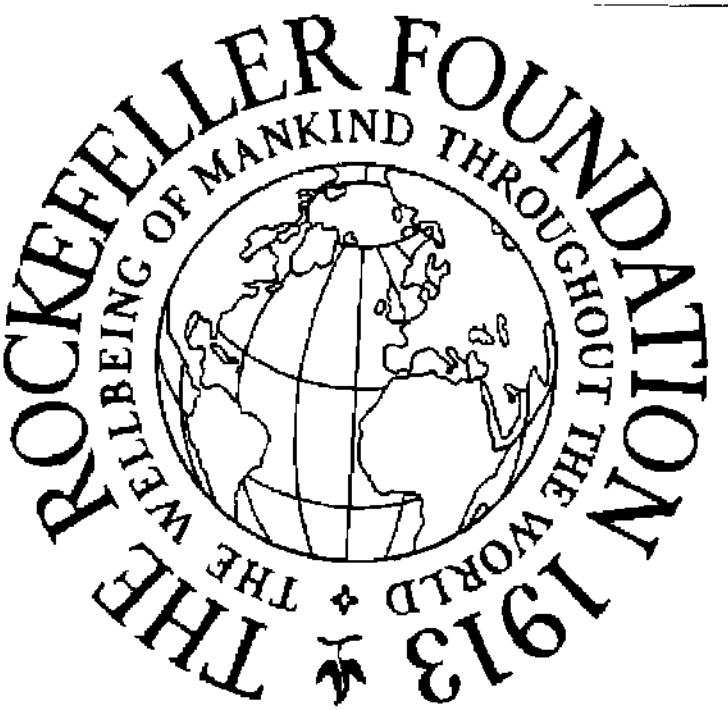
Milton Katims, conductor of the Seattle Symphony Orchestra, is one of several conductors of orchestras who have arranged to extend their regular seasons to move their ensembles to the campuses of neighboring universities for rehearsals and performances of works by contemporary American composers.



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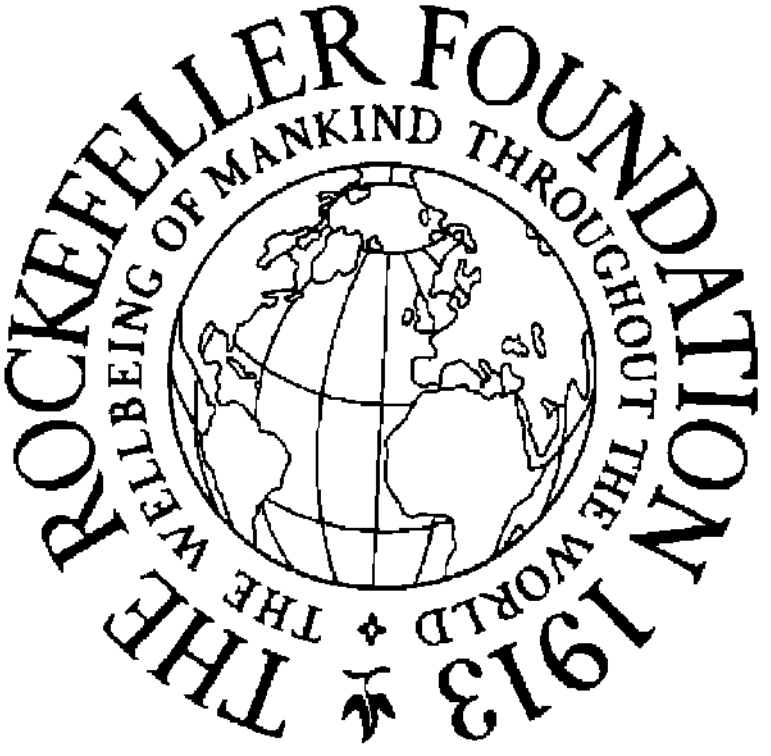
Composer David Amram, currently in residence with the New York Philharmonic, and percussionist Jan Williams, Creative Associate at the State University of New York at Buffalo, are among those who this year were able to develop their professional awareness through association with outstanding performing groups.



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With Foundation assistance, the San Francisco Tape Music Center joined the Mills Performing Group to establish on the campus of Mills College an unusual joint center for the creative and performing arts. Performances of such works as Monteverdi's *Coronation of Poppea* (*below*, a rehearsal) are fused with techniques of light projection designed by the Tape Center's co-founder Anthony Martin.

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work with stability and continuity, but major grants have also been made to independent organizations—experimental theatre groups, for example—when these can make a meaningful contribution.

Within the humanities, a major grant was made this year to support a program at the California Institute of Technology aimed at promoting mutual understanding between the humanities and the sciences through the reorientation of curriculum to assure that specialists trained in either of the two domains will have a strong background in the other.

Another Foundation program within the humanities makes individual awards in support of creative writing and literary scholarship. Grants to young writers of talent as well as to outstanding scholars, poets, and critics are made following recommendations from a panel.

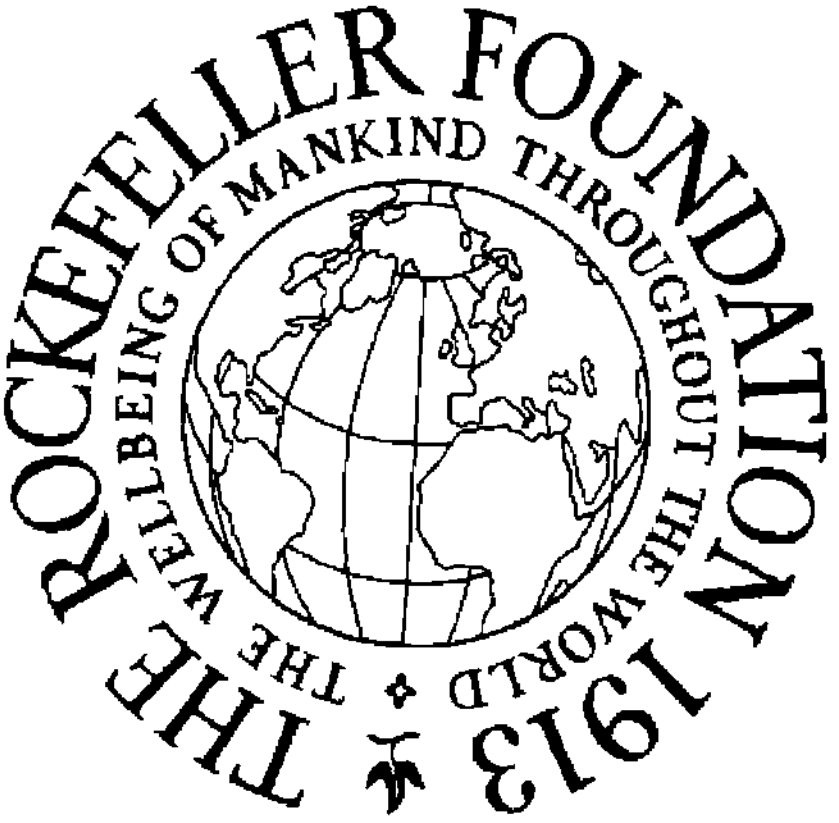
NEW MUSIC AND NEW AUDIENCES

SYMPHONIC MUSIC

Symphonic composition and performance, relatively neglected areas in American music, have been encouraged in a number of ways. One of the most successful has been a series of grants made over the past two years to major orchestras enabling them to extend their concert seasons and take up residence on nearby university campuses for the purpose of rehearsing, performing, and occasionally recording new and seldom-heard American music. Since the start of this program 14 orchestras have given 56 concerts and held 80 open rehearsals in 120 colleges and universities. Community involvement has extended beyond the university itself, taking the form of local broadcasts or taping of the performances and bringing in of high school students by local school boards to give young people an opportunity to attend rehearsals. Several of the conductors have been encouraged by the success of these programs to include new works in their permanent repertoires. The orchestras taking advantage of such grants were the Cleveland Orchestra, the Baltimore Symphony Orchestra, the Detroit Symphony Orchestra, the Cincinnati Symphony Orchestra, the Los Angeles Philharmonic Orchestra, the Chicago Symphony Orchestra, the New Orleans Symphony Orchestra, the Houston Symphony Orchestra, the Seattle Symphony Orchestra, the Phoenix Symphony Orchestra, and the Dallas Symphony Orchestra.

Symphonic music is also being fostered through the Foundation's composer-in-residence program. Following an initial grant to the Boston Symphony Orchestra last year, the program made four awards to major orchestras in 1966 for the purpose of inviting a composer to spend a year collaborating closely with them. The resident composer will have an opportunity to take part in the orchestra's day-to-day work and observe its technical

An important part of the Foundation's interests in music is to help selected colleges attract outstanding performing ensembles to their campuses as resident groups. The Lenox String Quartet (*below*) is now affiliated with Grinnell College; at Sarah Lawrence College (*right*), the Aeolian Chamber Players are bringing classical and contemporary music to receptive audiences.



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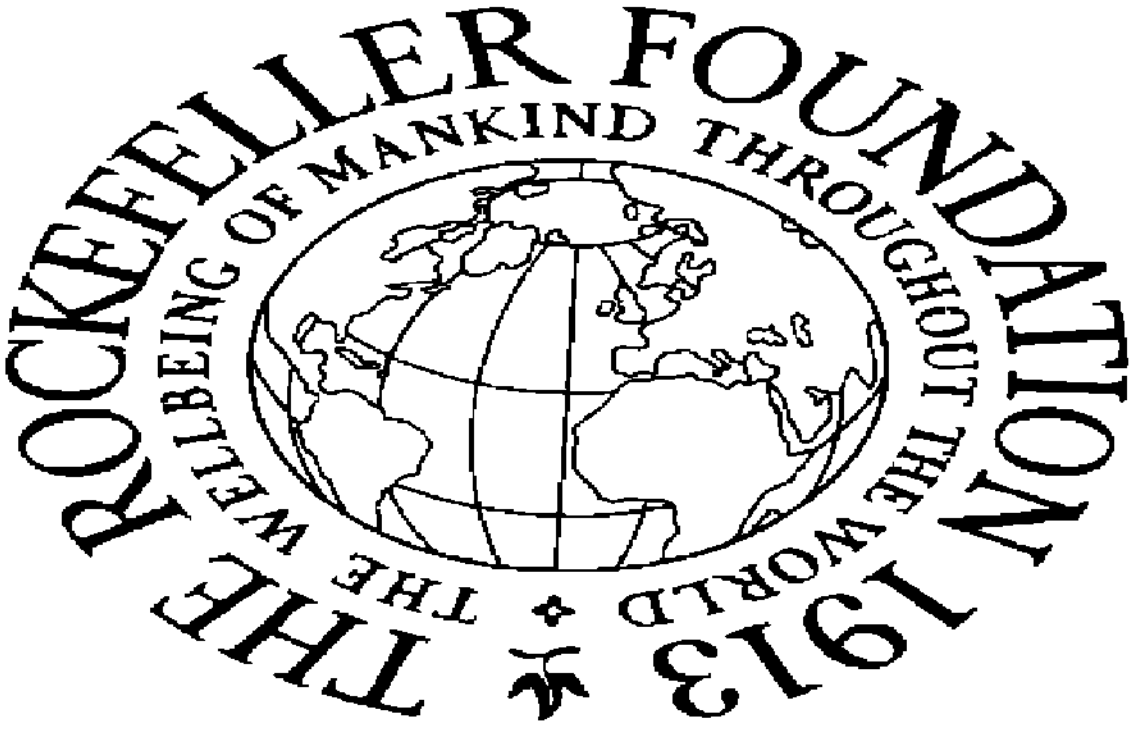

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High standards of performer training are fundamental to musical excellence: one outstanding effort is the Congress of Strings, a summer program for young players founded by the American Federation of Musicians, which enlists participation by leading musicians such as conductor William Steinberg (*left*). A Foundation grant has helped to establish East and West Coast branches respectively at the Saratoga Performing Arts Center and the University of Southern California.

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and artistic problems which have some bearing on his creative work. In this way the composer will live in close association with the medium in which he is writing and the performers will have an opportunity to gain insight into the modern composer's thinking and orchestral directions. Under these grants, David Amram will be in residence with the New York Philharmonic, Russell Smith with the Cleveland Orchestra, Thomas Wirtel with the Dallas Symphony, and Alan Hovhaness with the Seattle Symphony Orchestra. An exploratory grant to the Marlboro Festival also brought several composers to spend summer before last in residence at the Festival. The experiment was highly successful, from the point of view of both the composers and the outstanding performers who participated in the Festival. Rudolf Serkin, the Festival's founder, is planning to make the residency of composers a permanent part of the summer program.

CONTEMPORARY CHAMBER ENSEMBLES

Another approach to supporting creative and performing talent is the Foundation's program which helps establish performing ensembles in residence on university and college campuses. The State University of New York at Buffalo was the first institution selected by the Foundation to set up a creative music center where young instrumentalists and composers could come together to work out the difficult performing problems in contemporary music. The success of the Buffalo Creative Associates inspired the formation of similar groups of varying sizes at the University of Chicago, Rutgers—the State University of New Jersey, the University of Iowa, Mills College, the University of Pennsylvania, and the Cleveland Institute of Music in cooperation with Case Institute of Technology. The Group for Contemporary Music at Columbia University was given a grant to extend its season, and smaller instrumental groups were established in residence at Grinnell College in Iowa and Sarah Lawrence College, New York. By bringing contemporary music to receptive audiences, these groups have done much to stimulate the composition of music for small ensembles.

These efforts, while they have been keyed primarily to benefit the composer and performer, have made a major contribution to audience development. The ensembles presented contemporary works in communities which had had little previous contact with the new idioms, and they have developed a loyal and enthusiastic public for this kind of music, particularly in university centers.

TEACHER TRAINING AND PERFORMER TRAINING

High standards of teacher training and performer training are at the foundation of a tradition of musical excellence. One of the outstanding

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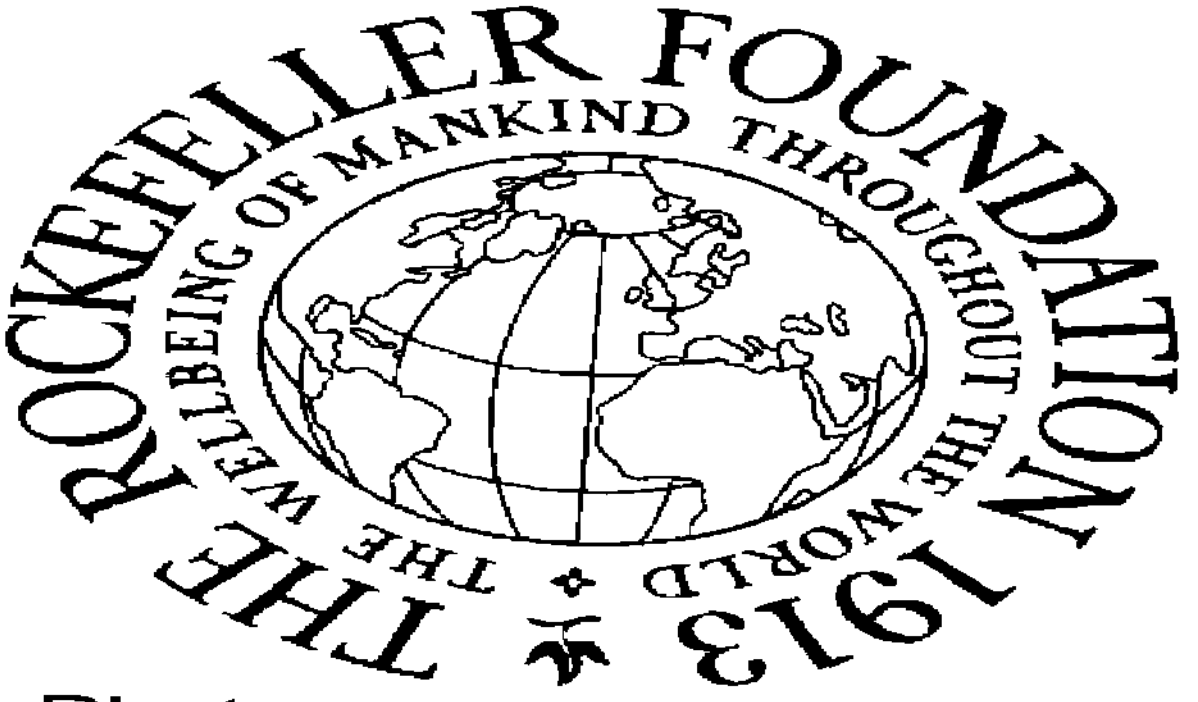
Training for actors and directors, one important purpose of a grant to New York University's School of the Arts, is directed by Theodore Hoffman (*above*), and staffed by professionals such as Omar Shapli (*below, right*), shown teaching an improvisation class.



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efforts being made in this area is the Congress of Strings, a summer program for young string players founded in 1959 by the American Federation of Musicians. Two Foundation grants made this year established East and West Coast branches of the Congress at the Saratoga Performing Arts Center, Saratoga Springs, New York, and the University of Southern California in Los Angeles. Grants have also been made to the Juilliard School of Music, New York, to establish a postgraduate training program in opera, and to the Opera Association of New Mexico, for the Santa Fe Opera's apprenticeship program for young singers and conductors.

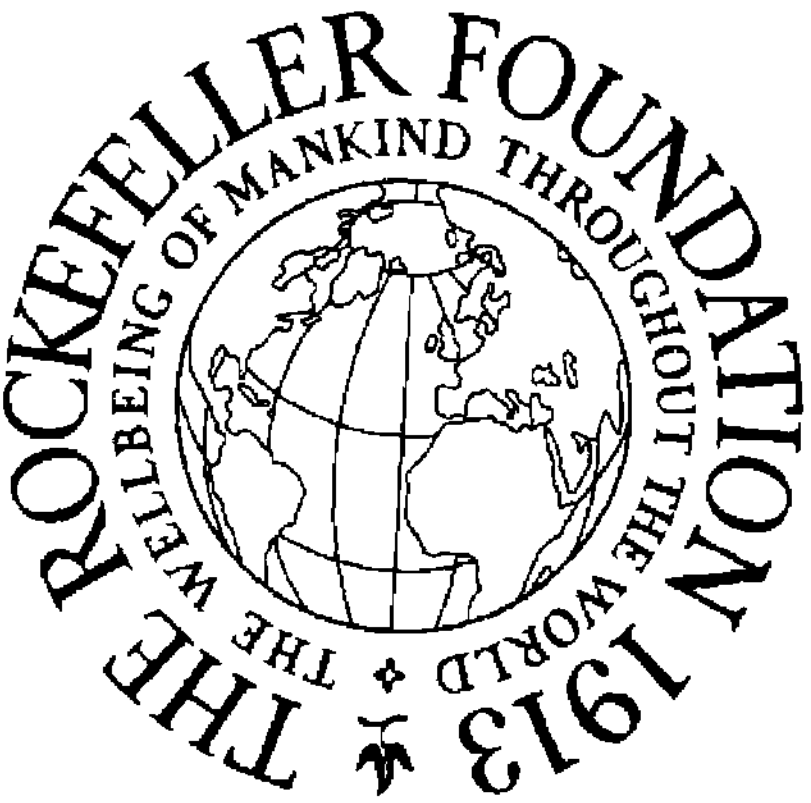
At the high school level, Foundation grants have enabled both teachers and students of music to work with members of top-ranking symphony orchestras in rehearsals and workshops. In the summer of 1966, 100 high school juniors came to the campus of the University of Minnesota to rehearse with members of the Minneapolis Symphony. Another grant enabled Stetson University to invite 20 high school music teachers from Georgia and Florida to work with and observe members of the London Symphony Orchestra, which was in residence at the Florida International Music Festival in Daytona Beach.

Music critics, who represent a vital link between the audience and the performer, are being trained under a previously made Foundation grant which combines formal study with an apprenticeship system. The University of Southern California offers an intensive one-year curriculum of academic work, which is followed by a period of on-the-job training under the supervision of a professional music critic. Graduates of this program are very much in demand to fill posts on major newspapers in many cities throughout the country.

THEATRE

Theatre in the United States is in a state of ferment. Within the past few years many new professional repertory companies and experimental theatre groups have been established across the country, troupes which present to an ever-widening public a broad range of dramatic material, from ancient Greek plays to new works by modern playwrights. The Foundation has been concerned with fostering this renewal, and has worked out various formulas of aid, chiefly to the persons responsible for quality in the theatre—playwrights, actors, directors, and critics—and has arranged projects to develop new and more aware audiences. Grants have been made to university schools of drama, professional acting companies, experimental theatre groups, individual artists, and a television network, in the hope of spurring revival of the dramatic form as a vehicle of authentic expression and exchange.

Villanova was one of several universities whose theatre departments received Foundation support. The emphasis falls strongly on advanced training for promising playwrights such as Leslie Lee and William Long (*below*), shown discussing design with departmental chairman Richard A. Duprey, an outstanding director and teacher.



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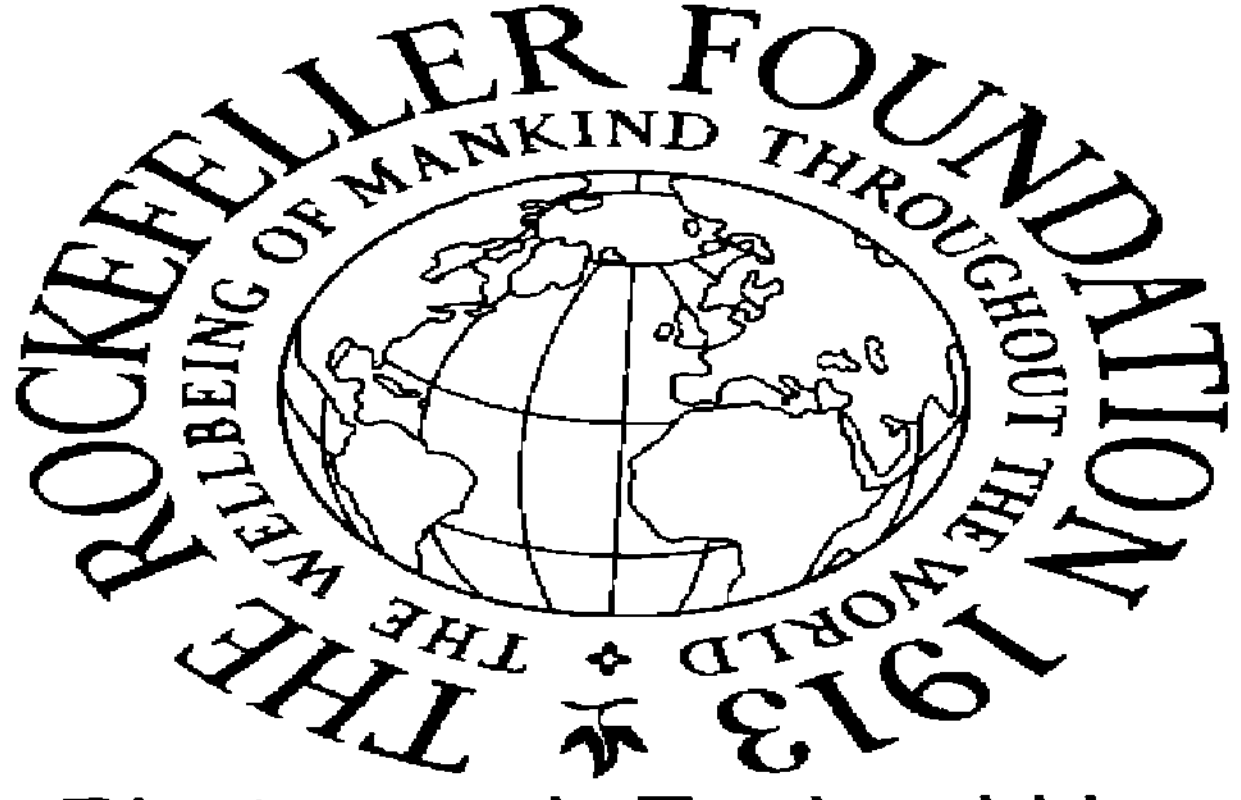
A limited number of direct awards were made to young playwrights of exceptional ability, such as Ronald Ribman (*above*), to allow them to concentrate full time on their work. More often, however, playwrights, such as Maria Fornes (*below*), who participated in the University of Minnesota's advanced drama research project, have benefited indirectly from grants to outstanding training organizations. Both have had plays produced recently.



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New York's Theater in the Street brings plays to outdoor audiences in the city's run-down sections. Here Goldoni's comedy *A Servant of Two Masters* is put on in Spanish for youngsters who, after the performance, are asked to write and submit plays of their own.

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PLAYWRIGHTS

Playwriting has been approached in several ways: grants have been made to support workshops connected with actor training programs or experimental theatre groups, where playwrights work on their own scripts in actual production situations; young playwrights have been enabled to work under the guidance of professionals in university drama departments; gifted playwrights also have received individual grants to free their time for creative work. This year grants to New York University's School of the Arts, to Yale University's School of Drama, and to Villanova University for its Theatre Department support playwright training within university-based drama programs. At New York University, an apprenticeship approach enables young writers to work closely with top-flight dramatists; at Villanova, several graduates of the Theatre Department's Master's degree program received fellowships to remain in residence at the University and work on their own plays under professional guidance. An independent theatre group, Albarwild Theatre Arts (Theatre 67) received a grant designed in part to encourage serious playwriting by providing a showcase for experimental productions free from commercial pressures.

Grants made in previous years to the Office of Advanced Drama Research at the University of Minnesota, the Playwrights Unit of the Actors Studio, the American Place Theatre, and the Theatre Company of Boston have shown the value of this kind of support for playwriting. Among the successful plays produced through these programs have been *Hogan's Goat* by William Alfred, *The Journey of the Fifth Horse* by Ronald Ribman, and *Dynamite Tonite* by Arnold Weinstein and William Bolcom. The University of Minnesota recently published the first two volumes of plays developed under its auspices to make these works available to a broader public.

ACTORS AND DIRECTORS

The growth of theatre throughout the country and the amplification of repertory have resulted in a shortage of competent actors and creative directors to achieve consistently high-quality performances. This is particularly true in repertory theatre where unusual or demanding roles in classical drama or in modern experimental plays require talents and skills which many American actors have never perfected. Training for young actors and directors is the primary purpose of the programs at New York University's School of the Arts and Yale's School of Drama. The necessity of enhancing the student's academic experience through direct contact with professional theatre is a teaching principle common to both schools. A conservatory-like approach which imposes high standards of technical excellence is coupled with formal course work in the liberal arts.

AUDIENCE DEVELOPMENT

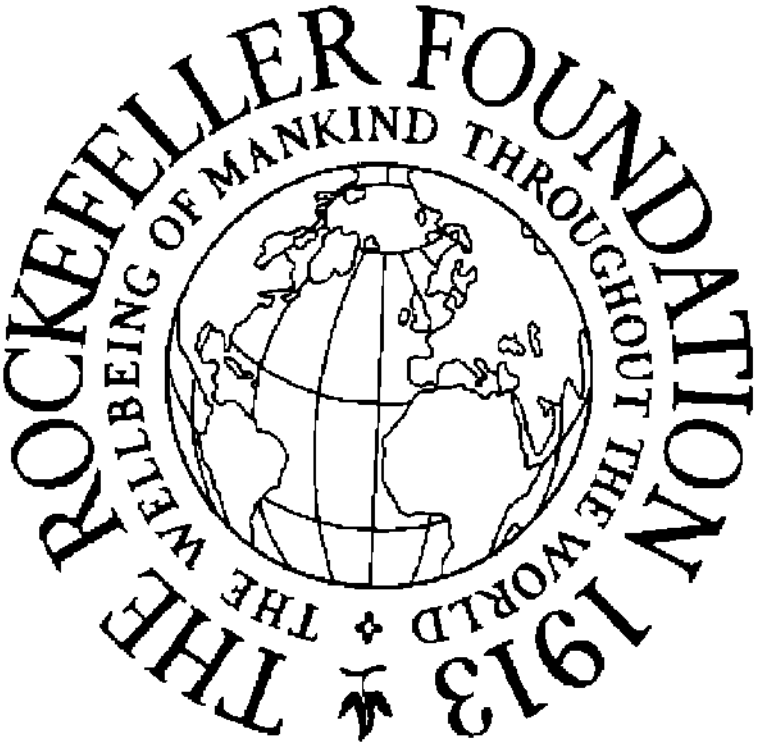
Audience interest and response are key factors in the renewal of theatre: the interaction of public and performer can be intense and specific in a sophisticated milieu. A curious variant of this phenomenon has been experienced by experimental theatre groups as they have moved away from traditional settings and confronted untutored audiences in city streets and rural communities. Still other problems arise from the fact that the artist has outdistanced the greater part of his public, even though they may share the same background: the democratization of the arts has, if anything, widened the gap between the creative artist and performers, teachers, theorists, and audiences. Audience development and audience discovery are the goals of a number of Foundation programs devised to broaden participation and deepen involvement in theatre as well as to foster receptivity to new forms of expression.

One type of grant enables young people in high schools and colleges to see good theatre and in some cases to take part in production workshops and performances. Awards for this purpose were made to the Vanguard Projects Division of the Pittsburgh Playhouse School of the Theatre in support of a program to make theatre materials available to schools throughout the country. The Foundation for Repertory Theater of Rhode Island received a grant to bring to high school children throughout the state performances by the Trinity Square Playhouse. A summer youth theatre, staffed by teen-agers, was a pioneering project undertaken jointly by the Front Street Theatre, Memphis, and Southwestern at Memphis, in Tennessee. This particular effort, which attempts to break down traditional barriers to theatregoing and to reach new audiences, is being carried out in conjunction with a sociological study of audience potential in the greater Memphis area.

Recent grants to Stanford University and the University of Cincinnati helped these institutions link their campus programs with professional theatre. The Ithaca Festival of the Classics, which received a grant in 1966, proposes to bring serious theatre to a region where none now exists, thus providing a strong cultural resource for the many colleges and universities in the upstate New York area. Several schools have begun to redesign their programs in theatre in anticipation of the opening of the Festival in the spring of 1968. This cooperation between professional theatre and college and university departments is a workable approach to regional development both of high-quality theatre on the campus and of more knowledgeable audiences.

A large audience potential is that of the culturally deprived—those who live in city ghettos or in the remote country. Two grants made this year support troupes which concentrate on reaching these audiences and bringing them theatre adapted to their own mode of life and manner of thinking.

Stanley Brakhage, a Colorado film maker generally considered among the most influential creative workers in this medium, is one of a small number of artists whose experimentation with film-sound and -vision have received support.



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The University of Utah has established the first professional dance repertory company based at an American university. ***Above and below,*** **dancers rehearse** ***Ceremony of Cards,*** **a new work.**

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The Free Southern Theatre, of New Orleans, mounts productions to take on tour to rural Negro communities in the Mississippi delta region, and Theater in the Street, of New York, plays to outdoor audiences in the city's slums. The New Orleans group runs a drama workshop for children and teen-agers in the Desire section of New Orleans, and both troupes have encouraged the writing of original scripts. An unexpected and rewarding feature of these two ventures was the impact of the audiences on the players, influencing them to shape new styles of acting and staging and to seek out dramatic material which answers the cultural needs of the environments in which they have chosen to perform.

Television can also be enlisted in the effort to arouse interest in theatre by the use of intelligent and inventive programming. A recent grant to the Educational Broadcasting Corporation, of New York, supports a projected series of telecasts based on the rehearsals and final performances of four classical plays. These programs will be designed to exploit the audience's involvement in the process of creation to give insight into the dramatic medium.

DANCE

An important grant was made this year to the University of Utah, Salt Lake City, to establish the first professional dance repertory company to be based at an American university. The group will give regular performances, create new works, and participate in teaching at the University through extension courses and demonstration classes. Two other grants were made in the field of dance—one to help the Martha Graham Company prepare its first tour in 15 years, and another toward consolidating the administration of the American Ballet Theatre.

CREATIVE WRITING

The Foundation continued its support to creative writers and literary scholars with a series of grants which included well-established authors as well as promising young writers. Selected nominators throughout the country propose candidates for these awards; they may be writers of the highest critical reputation—this year Eudora Welty, Elizabeth Bishop, John Hawkes, and Philip Roth received grants; they may be talented beginners or writers in mid-career undertaking projects to which they should give their full time. The awards are in most cases administered by a university. Twenty such grants were made in 1966 for work in poetry, fiction, and literary scholarship. In every case the basic objective is to enable a writer to devote full time to a project. Dr. John Williams of the University of Denver will spend some time in Italy in connection with a projected novel set in the Augustan

Philip Booth, author of the recent collection of poetry, *Weathers and Edges*, was one of 20 creative writers and scholarly critics who received support for full-time study and writing.

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age. Mrs. Katherine Topkins will also travel to Italy for work on a new novel with an Italian background.

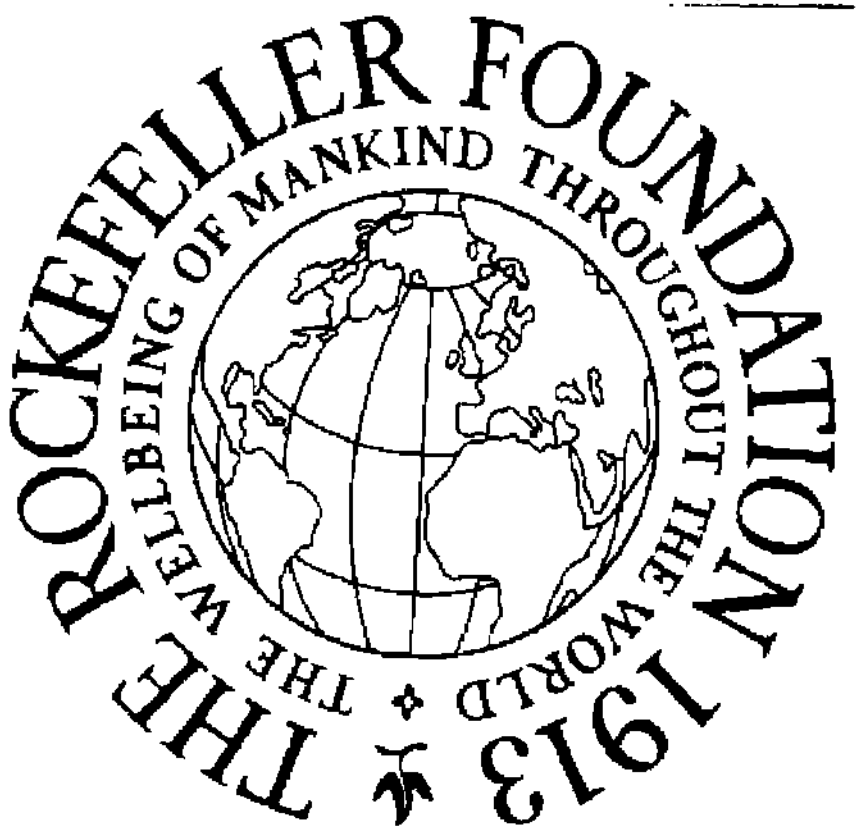
Professors Wright Morris and Claude Koch will take leaves of absence from San Francisco State College and La Salle College respectively to pursue their creative work. Four young Southern writers are among this year's grantees; they are Cormac McCarthy, Henry Hurt, Jr., Donald Harington, and Fred Chappell. Poets who received awards include Jean Garrigue, Anthony Hecht, Philip Booth, and Thomson Gunn. The latter is also working on a prose critique of 20th-century American poetry. Another work of literary scholarship, dealing with crucial ideas about history in selected modern writers, is being prepared by Harvey Gross.

THE HUMANITIES AND THE NEW TECHNOLOGY

A serious contemporary problem is the difficulty inherent in reconciling recent far-reaching technological developments with our more slowly evolving cultural environment. An important grant was made by the Foundation this year to the California Institute of Technology, Pasadena, in support of a program designed to give students a constructive understanding of the interrelationships of science, technology, and society. The Institute will bring together leaders in the fields of the humanities, social sciences, physical sciences, life sciences, and engineering in a creative program of inquiry and exchange, adapted to the pattern of interdisciplinary teaching and research which has become an integral part of campus activity. In recent years, seminars for students and faculty have focused on contemporary problems of concern to both humanists and scientists, bringing together specialists from different disciplines to discuss such themes as "Man and his Environment," "Problems of National Security," and "Science and Public Policy."

In 1965 a new Division of Humanities and Social Sciences was created at the Institute offering majors in several liberal arts subjects. The unique feature of the program is the strong science and engineering component in the curriculum for humanities majors, and the liberal arts requirement for science and engineering students. The Institute hopes in this way to contribute to mutual comprehension of the objectives of humanists and technologists by helping to educate men and women competent in both provinces. In addition, certain faculty members have a special interest in the developing countries and in the impact that modern technology may have on less evolved cultures. The program being developed at the Institute is a demonstration of an important way to bring the sciences into closer working relationships with the humanities and social sciences.

David C. Elliot, professor of history at the California Institute of Technology, is one of the men responsible, under the direction of Dr. Hallett D. Smith, for the Institute's current effort to design curricula giving students a better understanding of the interrelationships of science, technology, and society. The Foundation's grant is a part of its continuing interest in the humanities and their formative contribution to American culture.



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TOWARD EQUAL OPPORTUNITY FOR ALL

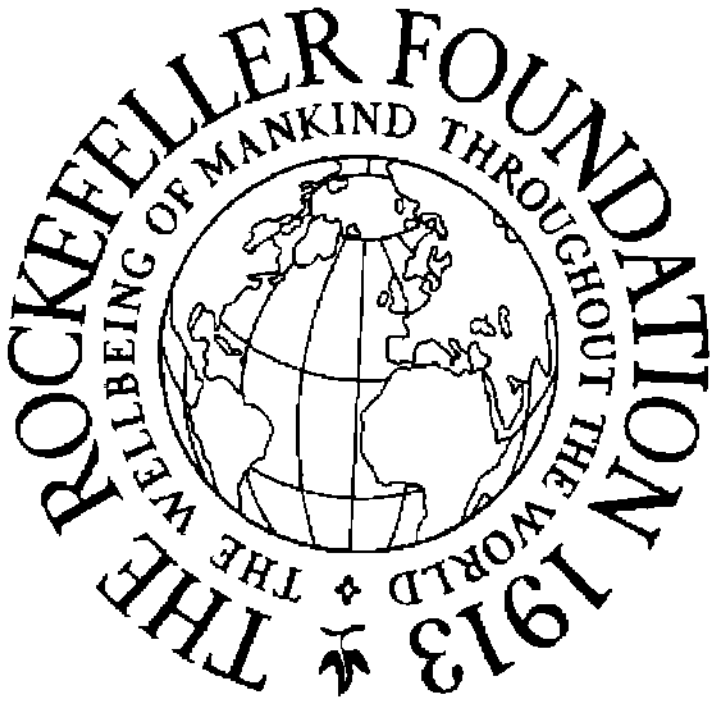
In defining equality of opportunity for all Americans as one of its major goals, The Rockefeller Foundation chose to focus chiefly on educational opportunity, both because it believes that education is basic to the achievement of almost every other right or advantage now denied to minorities, and because the Foundation's experience in the field of education may give it a measure of special competence. Furthermore, in terms of human relations, if Americans from different racial and economic backgrounds are to learn to know and treat each other on equal terms, educational institutions are an excellent place to begin the process and lay the foundations for spreading it throughout the country.

The Foundation's programs aimed at fostering equality of educational opportunity have now been in operation for almost three years. Although it is too soon to evaluate them definitively, a review of some of the efforts pioneered under Foundation auspices shows a steady advance toward primary objectives. The programs designed to help talented minority-group students from poor families attend outstanding colleges are well established and in most cases are expanding; the intensive summer schools, which provided a model for the Office of Economic Opportunity's "Upward Bound" programs, are increasing in number and are introducing a variety of imaginative new approaches; better-prepared candidates for scholarship awards are coming forward each year in the college recruitment programs in high schools of deprived areas. Counseling programs in urban slums are among those efforts setting the pace for community planning to prevent school dropouts and to guide disadvantaged young people toward more satisfying careers.

Support of predominantly Negro colleges continues to have Foundation interest, since these institutions will educate many of the professional, business, and political leaders of the Negro community, particularly in the South, for years to come. Most important is the recent move by the Foundation to seek ways of improving education in the public schools which serve large numbers of disadvantaged students.

Although the majority of grants were made for educational purposes, support was also given to organizations, such as the Urban League and the Southern Regional Council, which are dedicated to working for social justice and better race relations.

In its work toward equality of opportunity, the Foundation is hopeful of furthering a program of utmost importance to the present and future well-being of mankind both in this country and throughout the world. At the



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Emory University (*above*) was one of four Southern universities which continued their programs of recruitment and scholarship aid to promising students from disadvantaged backgrounds. Seven colleges in the North and West, including Occidental College (*below*), received grants in the past for similar programs for students from minority groups.

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same time, by its very nature and goals, it must necessarily be a long-range effort, aiming at changes that will be fully realized only in future generations. Nevertheless, the program's concrete accomplishments to date, and, more intangibly, the momentum generated by the Foundation's initiatives, show that a significant start has been made.

STUDENT RECRUITMENT AND REINFORCEMENT

To achieve true equality of higher educational opportunity for potentially qualified young people from minority groups, two complementary types of effort are being encouraged by the Foundation: first, new patterns of recruitment and more flexible admission policies by major colleges are being supported, so that the search for students from minority groups will gradually become part of normal procedure; at the same time, promising students from disadvantaged backgrounds are receiving special help to meet entrance requirements and to study successfully in top-ranking colleges.

This year four Southern universities received grants to continue their programs of recruitment and scholarship aid to promising students from disadvantaged backgrounds. Duke University, Durham, North Carolina; Emory University, Atlanta, Georgia; Tulane University of Louisiana, New Orleans; and Vanderbilt University, Nashville, Tennessee, now have a combined total of 130 minority-group students on their campuses, and each year their recruitment programs in predominantly Negro high schools encounter more and better-prepared candidates. To strengthen these programs, the Universities plan to hold regional conferences for counselors of Negro youth, to keep them informed of admissions procedures and available scholarship aid. Prefreshman orientation sessions for the students selected for admission are also being planned. Two other Southern schools which are systematically seeking out bright students from disadvantaged homes are Virginia Polytechnic Institute, Blacksburg, and Mercer University, Macon, Georgia. Part of the financial aid plans for these students is being underwritten by the Foundation.

Occidental College in Los Angeles received a new grant this year to continue its program for the discovery of talented students in California high schools with largely Negro and Mexican-American student bodies. Seven colleges in the North and West, including Occidental, which have received Foundation grants in the past for similar programs now have a total of about 400 minority-group students on their campuses. (They are Carleton College, Northfield, Minnesota; Grinnell College, Iowa; Oberlin College, Ohio; Reed College, Portland, Oregon; Swarthmore College, Pennsylvania; and Antioch College, Yellow Springs, Ohio.) These institutions are using their own funds as well as government and private grants to carry

out and expand these programs, which, in addition to fostering individual talent, have proven their value to the schools themselves in many ways. One college reports: "The presence of minority-group students has become the natural order of events. They are participants in all aspects of college life, including all social and extra-curricular activities. Most importantly, their inclusion has become an unconscious act on the part of the vast majority of the other students."

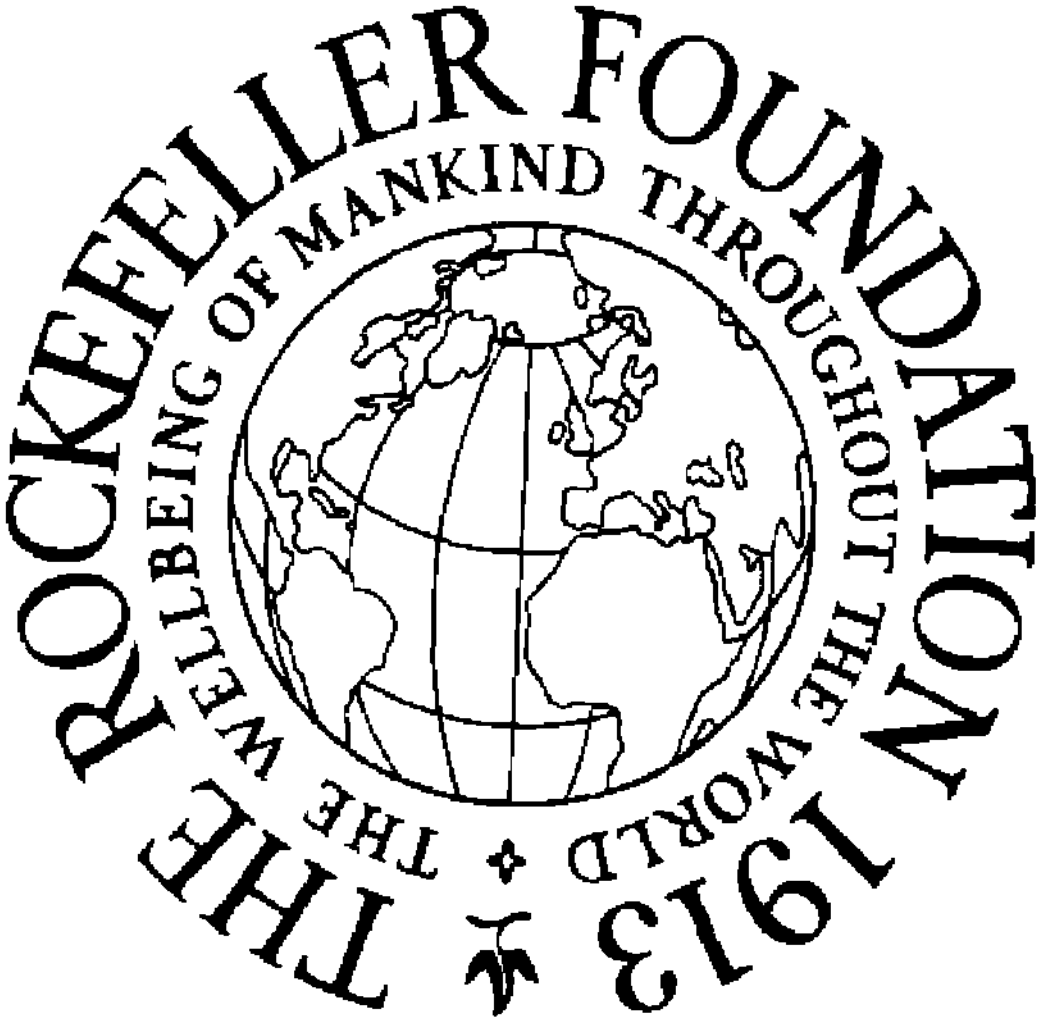
PREPARATION FOR COLLEGE

Although in principle the doors of selective colleges are open to minority-group applicants, in actual fact the number who can realistically compete for admission is very small. Even when discriminatory practices disappear and financial aid is made available, weak high school preparation and deep-rooted social and psychological barriers keep potentially talented students from applying to top-ranking schools. To overcome these obstacles and make college a real possibility for all young people of promise, several educational experiments have been encouraged and supported by the Foundation. Programs planned by Princeton University, Oberlin College, and Dartmouth College were the first to be undertaken in 1964; these all use slightly different combinations of intensive summer-school sessions to motivate and prepare minority-group students for college entrance. The Dartmouth program, and a similar project for girls at Mt. Holyoke College, came to be known as the ABC Programs—for "A Better Chance." These aimed at preparing youngsters still in junior high and high school for admission to selective college preparatory schools. This program has been greatly expanded—at the present time more than 700 boys and girls are enrolled in the more than 100 cooperating private independent schools, and this year a grant was made to the Independent Schools Talent Search Program in Boston to continue the effort on a broad scale. Dartmouth College has initiated a plan to extend the ABC Program to public high schools of high rating in the New England states.

Yale University is attacking the problem somewhat differently in its transitional year program. Students graduated from high schools in depressed areas are brought to New Haven for a year of courses designed to fill the gaps in their high school education and prepare them to study effectively at a selective college.

In another approach, a grant to Hunter College in New York supported academic reinforcement for girls from disadvantaged backgrounds who were selected from elementary schools in problem areas of Manhattan to attend Hunter College High School, a school for exceptionally gifted girls maintained by the City of New York.

Yale University brings students graduated from high schools in depressed areas to New Haven for a transitional year program designed to fill the gaps in their education and to prepare them to study effectively at a college.



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New York's Hunter College takes potentially able but disadvantaged students from elementary schools in problem neighborhoods for special study to help them succeed at Hunter College High School, a school for gifted girls.

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These and other Foundation-supported experiments initiated by private schools and colleges are tending to involve the public schools—indirectly through their recruitment and follow-up procedures, more directly in the case of Hunter High School and the new Dartmouth ABC venture. The Princeton summer program was renamed Princeton Cooperative Schools Program (PCSP) in recognition of the greater role played by the New Jersey public schools in providing counseling and helping with follow-up activities and related summer programs. As such efforts become regular policy in the public schools, programs to identify and foster exceptional ability in culturally deprived children are expected to move out of the pilot stage and affect increasing numbers of minority-group students.

VOCATIONAL TRAINING AND COUNSELING

Finding suitable career opportunities and incentives for young people from city slums is causing public concern on both neighborhood and national levels. The problem is extremely complex and will require a number of approaches adapted to the special difficulties, both individual and social, faced by urban youth. The Foundation is supporting a trial and demonstration program at Washington University in St. Louis, Missouri, aimed at finding a solution for one type of young person—the high school graduate of average achievement and good potential who nevertheless is a poor risk for college. Through a system of counseling and vocational testing in the public high schools, selected students are guided toward technical or vocational training suited to their interests and abilities. They are placed in jobs with local business and industrial firms which are cooperating in the program, and they attend night courses at the University College to study for vocational certificates in their chosen fields. The cooperating companies provide on-the-job training and contribute to the students' tuition costs at the University; the College provides remedial tutoring and guidance where necessary. The program in St. Louis is expected to serve as a model in other cities where authorities are looking for means to provide realistic vocational opportunities for youth and to cut down on the number of high school dropouts by giving young people from depressed or segregated areas an incentive to work toward more satisfying careers.

Another program aimed at offering educational guidance at a crucial age is being supported by the Foundation at Western Washington State College in Bellingham. This effort, which is designed to supplement a government-supported Upward Bound program for high school students, affects an even younger age group in an area where the school dropout rate at the minimum age is often as high as 70 per cent. Minority groups settled in this part of the state—American Indians, Mexican-Americans, and

recent migrants from depressed areas of the United States—do not encourage their children to pursue careers which require long formal schooling, and as a result educational authorities must try to change the attitudes of the families as well as of the students themselves.

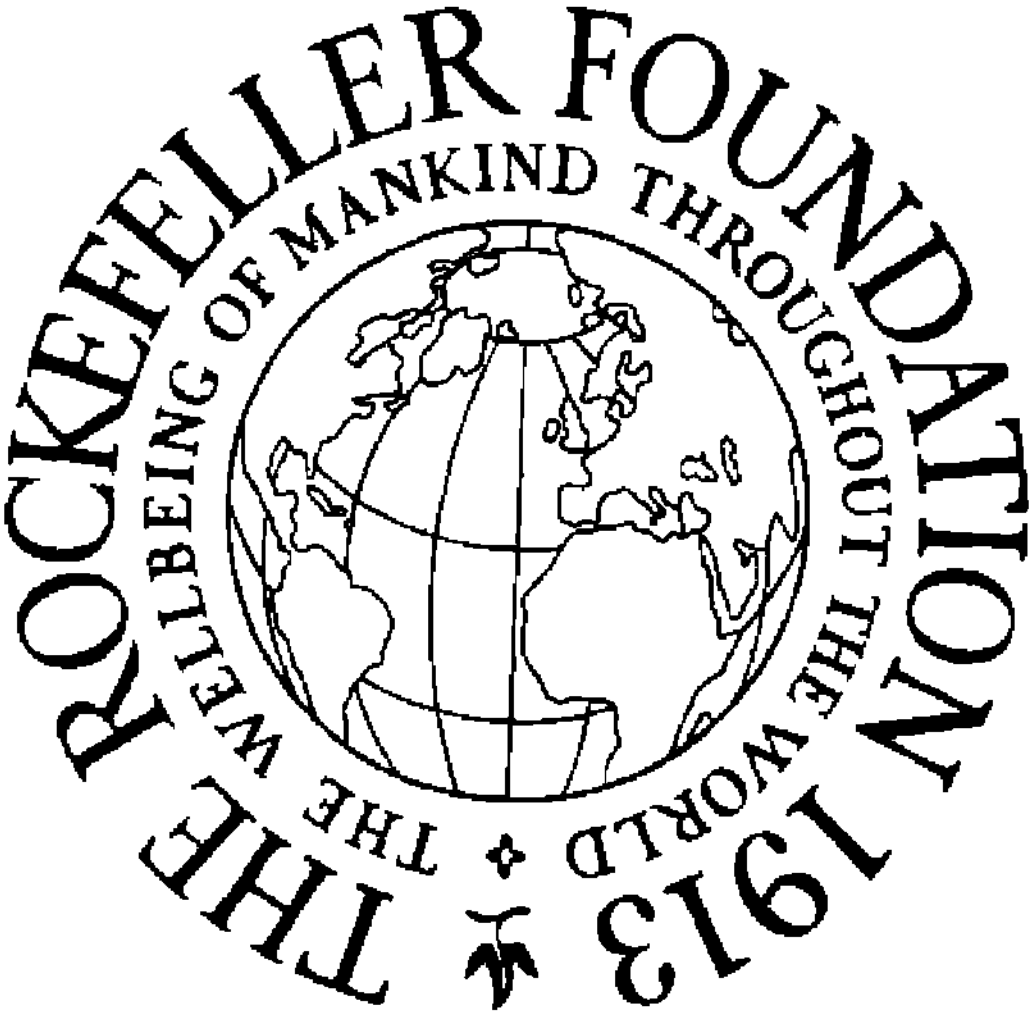
The College is inaugurating a summer school for 50 students each year in which they will receive guidance and counseling, take courses in reading and mathematics, and pursue special projects. A follow-up program will include work with the families and home schools in an attempt to raise the students' educational and vocational aspirations and improve their prospects for success. Careful analysis and appraisal of the program will be made, in the hope that, if the results are satisfactory, this or a similar program can be introduced into the public schools of the area.

STRENGTHENING PREDOMINANTLY NEGRO INSTITUTIONS

Of the over 1,000 undergraduate four-year liberal arts colleges in the country, about 85 are predominantly Negro; of these all but four are located in the South. Although desegregation in the South and Negro migration to the North are gradually reducing the proportion of Negro students who attend these institutions, their actual enrollment is growing. It is only realistic to suppose that in the years immediately ahead a large majority of Negroes who graduate from high schools in the South and wish to go on to college will go to predominantly Negro institutions near their homes. Therefore, in addition to helping more Negroes to qualify for top-ranking colleges, attention must be given to strengthening the predominantly Negro institutions. A most important consideration is the fact that a high proportion of their graduates study for teaching careers and after graduation go to staff primary and secondary schools all over the South. Improved education in the colleges which train the public school teachers is thus an indirect contribution to upgrading education for Southern Negroes generally. Programs of Foundation assistance have been started at three centers that figure among the most prominent of the colleges attended mainly by Negroes—institutions which can serve as pace-setters for development plans in other colleges. These are the Atlanta University Center in Georgia, Fisk University in Nashville, Tennessee, and Lincoln University in Pennsylvania.

The Atlanta Center includes four undergraduate schools—Morehouse College, for men; Spelman College, for women; and Clark and Morris Brown Colleges, both coeducational; a separate graduate school, Atlanta University, offers Master's degrees in arts and sciences and the four professional fields of social work, library service, education, and business administration; it also has a Ph.D. program in two fields. The Interdenominational Theological Center, which is made up of theological schools of four

The Princeton Cooperative Schools Program involves New Jersey's public schools through the recruitment (and, later, follow-up procedures) of disadvantaged students who by summer study at Princeton University might be motivated to aspire to self-development through higher education.



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different denominations, completes the complex. In the past the General Education Board, the Rockefeller family, and other Rockefeller boards have provided substantial support to these schools which together comprise the largest of the private predominantly Negro centers of higher education in the South. The Center has high-caliber leadership and faculty and is well endowed in buildings and equipment; it thus offers unusual potential for developing educational strength.

Over the past three years Foundation support has been concentrated on strengthening faculty and developing the facilities and services of the joint library which serves all the member institutions. Funds have also been appropriated to Atlanta University for the School of Library Service and to Morehouse College for summer and week-end study programs for promising high school students, conducted in cooperation with Spelman College. This grant has enabled the colleges to cooperate with Atlanta's six Negro high schools in identifying promising students and helping them prepare for college entrance. This year the appointment of an Executive Secretary was an important step toward cooperative development of all the institutions in the Center. An experienced educator will assume full-time responsibility for coordinating Center-wide programs that can contribute to the educational strength and administrative solidarity of the complex.

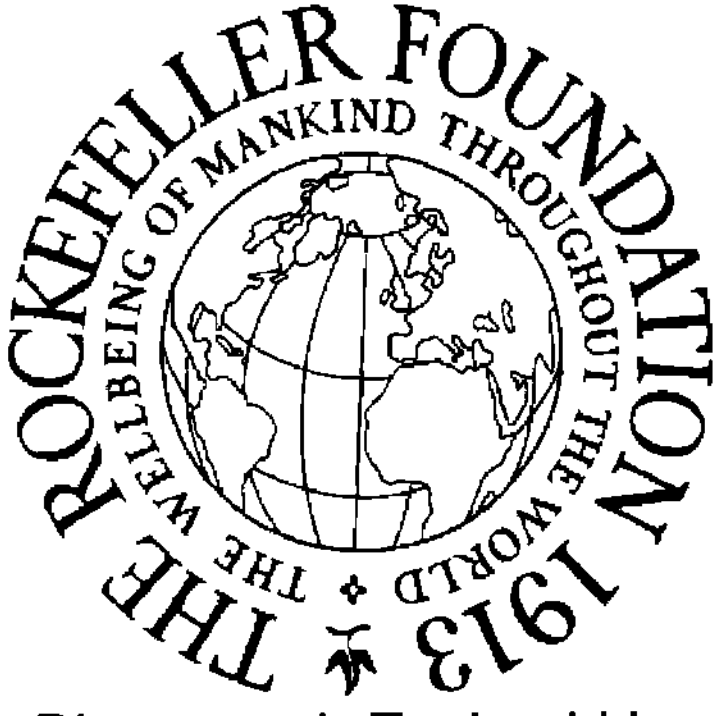
Fisk University in Nashville, Tennessee, is highly reputed as one of the outstanding liberal arts schools with predominantly Negro student bodies. The Foundation is providing financial aid for various developmental needs and in addition appointed a Foundation staff member to serve on the Fisk faculty as Chairman of the Department of Economics. Faculty development in key disciplines such as economics, English, and mathematics has been a primary area of concentration; new staff members have been appointed and cooperative arrangements have been made with Vanderbilt University for faculty exchanges and cooperative research. Prospects for the future include a new and expanded library facility, to be built with funds from several sources, and a project for more systematic recruitment and selective admission of students, with a special effort being made to attract more white students.

Lincoln University in Pennsylvania is one of the four predominantly Negro colleges located in the North. It attracts many foreign students, mainly from Africa, and has graduated several of the leaders of the new West African nations. About one-fifth of the student body is white. The Foundation has been assisting in efforts to raise academic standards at the University through support to a program of remedial and reinforcement work for entering students both before and during their freshman year. Systematic recruitment of talented students from segregated, economically

disadvantaged areas of large cities is also being supported. The Foundation is also encouraging exchanges and cooperative programs with nearby liberal arts schools such as Haverford, Bryn Mawr, and Swarthmore Colleges. Haverford and Lincoln, for example, are sharing the availability of Ronald Milner as writer-in-residence, under Foundation auspices.

In addition to assisting selected institutions directly, the Foundation is supporting other efforts to bring significant improvements to a wider range of predominently Negro colleges. Most important among these is the Woodrow Wilson Teaching Internship Program which has been receiving Foundation support for the past three years. Under this program, Woodrow Wilson fellows are placed in teaching positions for one year—often with a year's renewal—at Negro colleges requesting them. They are freed from part of their teaching schedule to supervise special projects, promote intellectual interests and activities, and help students of exceptional ability prepare for admission to good graduate and professional schools.

The Walden School in Washington, D. C., is an unusual school which in an informal environment acceptable to unconventional youngsters seeks to motivate high school dropouts to recognize that in continuing their education they can hope to find themselves.



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PREPARATION FOR ACADEMIC CAREERS

Just as better preparation for college may mean brighter prospects for minority-group high school students, supplementary education for college graduates may equip them for entrance to topflight graduate schools and start them toward careers with broader possibilities for leadership as well as for personal satisfaction. A program designed to help such students bridge the gap between undergraduate and graduate studies is conducted at Haverford College in Pennsylvania in cooperation with Bryn Mawr College. The students spend a transitional year taking courses arranged to suit their individual needs, without degree requirements, and thus strengthen their academic preparation for admission to graduate schools with exacting standards. Summer institutes are also being conducted at Haverford for the same purpose. The Foundation grant is earmarked for fellowship aid to students who plan careers in college teaching.

Washington University in St. Louis is demonstrating that its program of teaching high school students vocational skills while they are working in jobs with cooperating local business and industrial firms may be one answer for the high school graduate of good potential who is nevertheless a poor risk for college.

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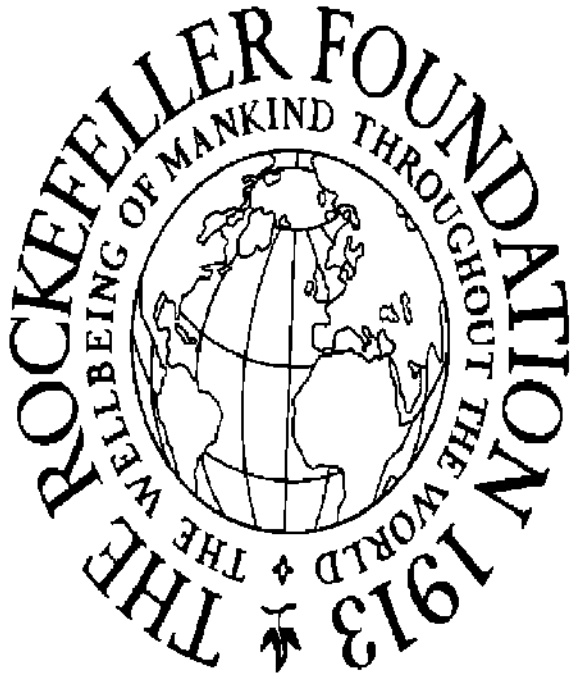
Western Washington State College offers junior high school students, including American Indians, Mexican-Americans, and children of rural white workers, an absorbing summer of special studies and counseling; importantly, it also tries to change the attitudes of students and their parents to education.



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DEVELOPING INTEREST IN THE PROFESSIONS — LAW

An imaginative program was devised at Harvard to interest promising college students in entering law school after graduation. Between 40 and 50 students each summer enrolled in the course, which consisted of a combination of academic studies and other formal and informal activities centering around the study and practice of law. Students took one course at the Harvard University Summer School, and devoted the rest of their time to intensive work in the law school. Courses covered selected problems in torts, contracts, the role of the jury, and criminal and consitutional law. One feature of the eight-week session was a mock lawsuit culminating in a courtroom trial and appeal, enacted in full by the students. A District Court judge from Detroit, Michigan, presided over the trial, and a United States District Court judge from Washington heard the appeal.

NEARER THE HEART OF THE PROBLEM

Numerous different programs throughout the country aimed at increasing the number of qualified college applicants from minority groups are answering some basic questions as to how the discrimination-poverty-deprivation cycle can be broken, but the larger problem of how to provide educational advantages to disadvantaged students on a massive scale is still far from solved. The heart of the problem lies in improvement of the public school systems which are charged with primary and secondary education in areas where culturally deprived minorities are concentrated. Foundation-supported programs are making an indirect impact in certain localities, and more direct approaches are constantly being sought where limited funds can be applied to projects which promise to have a wide influence on educational and public policy. One effort which received support was the formation of a Division of Field Action by the Bank Street College of Education.

The College has always concentrated attention on improving public education in urban school systems, with particular emphasis on the inner-city schools which as a rule serve disadvantaged minorities. The College has worked closely with authorities in such schools in New York City over the years, and many of its graduates teach or hold supervisory positions in the city's problem areas. The College is currently involved in various projects to improve curricula and teaching in New York City schools, and under the Foundation grant, it will extend its intervention program to include exploration of the components which are essential for reform.

A Division of Field Action, to be located in Harlem, will coordinate the College's work and will study the educational problems of the area, to determine the best means to approach innovation in institutions of public education.

With Foundation support, the Woodrow Wilson Teaching Internship Program encourages former Woodrow Wilson fellows such as Dennis Jarret, who last year taught at Morehouse College, to accept requests from predominantly Negro colleges to fill vacancies in the teaching staff and to supervise projects to further the academic interests of students.

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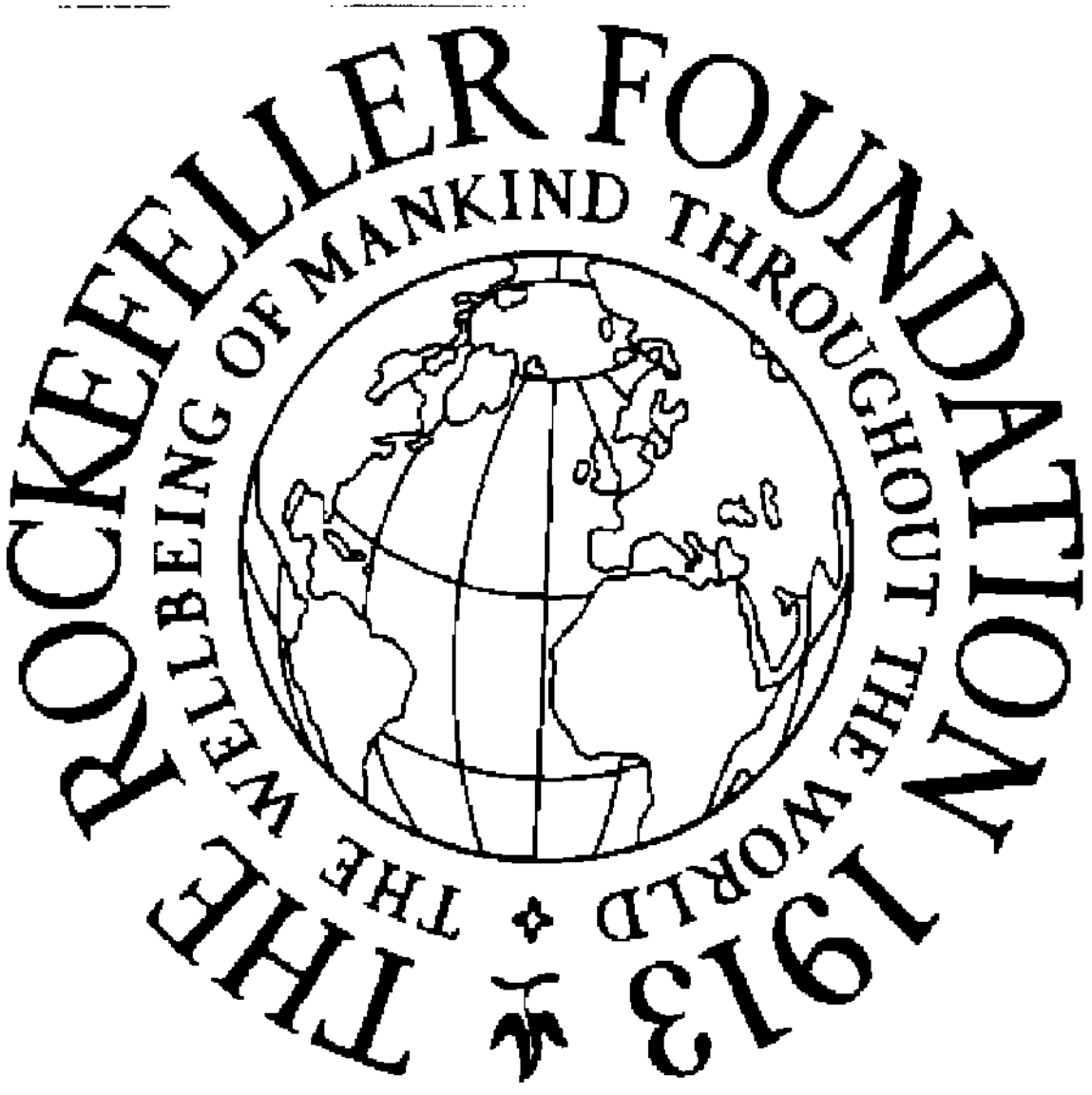
The Harvard Law School has sponsored summer programs of orientation and introductory studies to interest Negro college students in a law career. One feature of the eight-week session was a mock lawsuit culminating in a trial enacted by the students (*below*).



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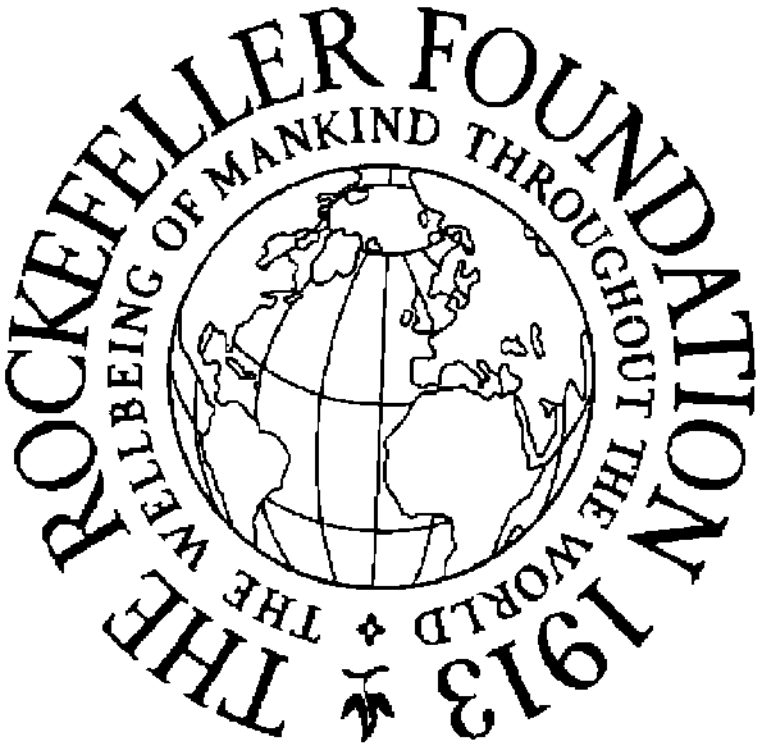
ALLIED INTERESTS: ARBOVIRUSES

Although for the past three years the programs of The Rockefeller Foundation have been focused chiefly on five major areas of interest—its campaigns against world hunger, work toward population stabilization, and the strengthening of selected universities abroad, and, in the United States, cultural development and the provision of equal opportunity for all citizens—certain important interests which lie outside these provinces continue to receive support. One such program consists of worldwide research activities related to arthropod-borne viruses, or arboviruses.

The Foundation's interest in virus diseases dates back to its work to eradicate yellow fever, begun in 1916. In 1949 a systematic study of arboviruses was undertaken by Foundation scientists. These viruses, which are carried primarily by ticks and mosquitoes, cause a wide variety of maladies ranging from mild indispositions to fatal diseases in both man and animals all over the world. The Foundation helped establish a worldwide network of scientists working in South America, the Caribbean, Asia, Africa, and North America. Some of these investigators worked in direct association with Foundation programs while many more carried out their work within independent organizations. Laboratories and field units came into being to determine the geographical distribution of these viruses, to investigate their life cycles and habits, establish their interrelationships, and identify the animals, birds, and even reptiles which they use as hosts and wintering reservoirs and the insects which transmit them to human and animal victims.

Over the past six years, the Foundation has encouraged the integrating of field laboratories with local universities and medical schools in Colombia, Brazil, Trinidad, Nigeria, India, and California. Through support for the training of virologists over the years, the Foundation has helped develop corps of local scientists who can staff these centers in the future. Foundation specialists posted abroad are gradually being reassigned to the program's central laboratories now located at Yale University. Virus research in the laboratories at Poona and Vellore, India, will be completely staffed by Indian virologists by 1968. During 1967 one Foundation virologist will remain at the Trinidad Regional Virus Laboratory, which is now supported by triennial grants to the University of the West Indies. Field investigations and training are continuing under Foundation auspices at the University of Valle in Colombia, at Belém, Brazil, and at the University of Ibadan in Nigeria.

The Rockefeller Foundation's central virus laboratories moved to Yale University in 1964 as part of the Yale Arbovirus Research Unit, located in this modern building. The Unit, designated by the World Health Organization to house the International Reference Centre for Arthropod-borne Viruses, has the largest collection of viral agents and immune sera in the world. Materials from arbovirus research projects abroad in which Foundation staff members cooperate, and from many other sources, are studied or identified in this Unit, which also serves as a training center in virology for Yale graduate students and scientists from abroad.



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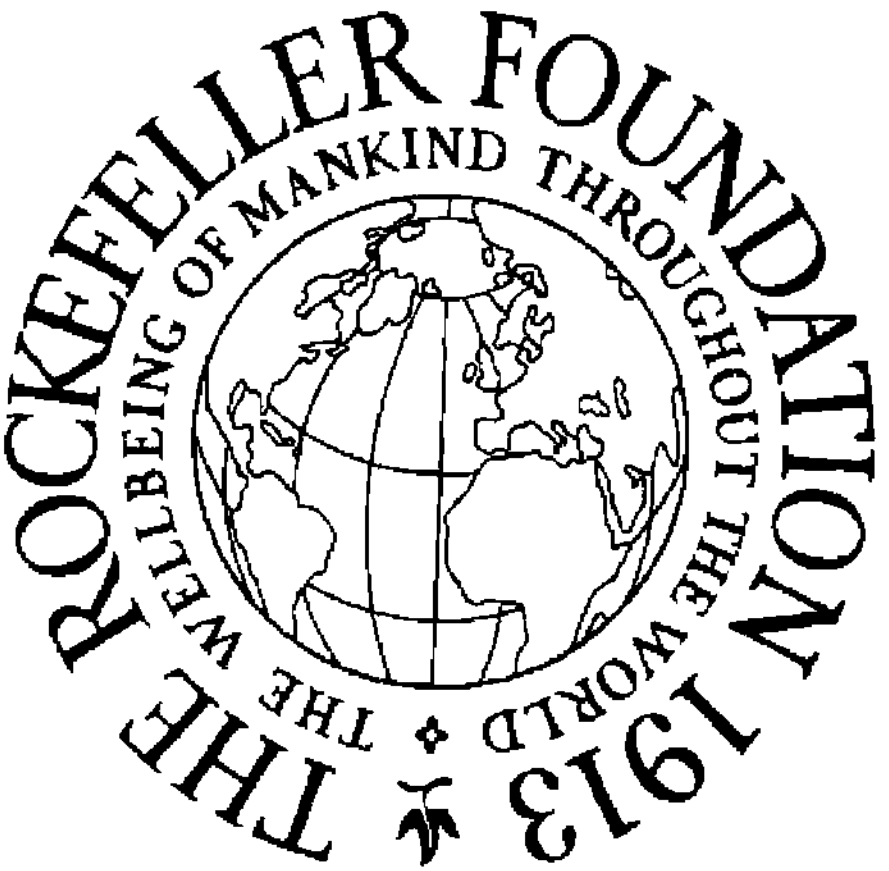
At the end of 1966, Foundation staff members were working in cooperative virus research projects in Brazil, Colombia, India, Nigeria, Trinidad, and California, as well as at Yale University's central laboratory. Three of them are shown on the opposite page: *above, left,* Dr. Graham E. Kemp making a test with suckling mice at the University of Ibadan, Nigeria; *above, right,* Dr. Ottis R. Causey removing ticks from Nigerian longhorn cattle for study; *below,* a student discussing his program with Dr. Loring Whitman at Yale University. *On this page,* Dr. Carlos Sanmartín, a distinguished Colombian virologist on the University of Valle faculty, watches an experiment.



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In 1964 the Foundation's central virus laboratories were moved from New York to New Haven, and integrated with the Yale Arbovirus Research Unit. This Unit is making progress in establishing an international center for research, training, and service to other organizations in the field of arbovirus investigation. It has developed the largest collection of viral agents and immune sera in the world, and in addition houses the World Health Organization's International Reference Centre for Arthropod-borne Viruses.

Research has been focused on establishing and characterizing several hundred arboviruses submitted from field investigators all over the world. Many of these viruses are previously unknown, some of them are associated with human and animal disease, and all of them require painstaking and protracted laboratory work to establish their identity and their relationships with other known viruses. This information in turn is essential for the field investigators to have, to permit them to proceed with field epidemiologic studies, aimed at determining the importance of the agents in human and animal disease. Intensive work is in progress on the dengue viruses. Until ten years ago these viruses were felt to be important causes of human morbidity but not associated with significant mortality. It is now well established that they cause the "hemorrhagic fevers" which annually take a large toll of lives, particularly among children, in outbreaks in several major cities of Southeast Asia. In India, intensive work continues on the Kyasanur Forest disease virus, an agent closely related to the Russian spring-summer encephalitis virus, which causes serious disease in a restricted area of Mysore State.

As a training center in virology, the Unit serves Yale medical students and doctoral candidates as well as postdoctoral scientists from abroad. Foundation staff members offer a course in arbovirology for students in the Department of Epidemiology and Public Health and provide opportunities for field work for students with a major interest in biology or medicine.

Four grants were made this year to virus laboratories abroad: in Cali, Colombia; Ibadan, Nigeria; Poona, India; and Belém, Brazil. Extensive field work in different areas of Colombia has yielded new information about the distribution and activity of several known viruses and has led to the discovery of at least six viruses not previously described in Colombia. Work has also been concentrated this year on investigations of tick-borne diseases in sheep and on the general ecology of the Cauca Valley. A Foundation virologist was recently assigned to the Veterinary Research Laboratory at the National University in Bogotá to develop a virus research program in collaboration with the Colombian Institute of Agriculture. He is also conducting research to determine whether the Junin-Machupo viruses, which in Argentina and

Bolivia cause diseases fatal to human beings, are active in the Orinoco basin.

Recent reports of this disease in Peru plus the finding of a closely related virus, Amapari, by the Belém Virus Laboratory, and the earlier finding of a related virus, Tacaribe, by the Trinidad Regional Virus Laboratory, support suspicions that viruses of this group may be widespread in South America. It is further suspected that they may be prime causative agents of serious human disease in regions to the north of Argentina and Bolivia. The Tacaribe and Amapari viruses have not yet been linked to human disease, and may be less dangerous agents to work with both in the field and in the laboratory. The Belém and the Trinidad laboratories, as well as the Yale laboratory, are pursuing studies with these agents.

In Nigeria, a grant was made to the University of Ibadan, to continue the basic studies of virology started in 1963. Tick-borne viruses which seem to be a major factor in extensive livestock losses throughout West Africa are a special subject of investigation.

The small unit operating in California reports continued success in isolating Western equine encephalitis virus and in defining its life cycle both in vectors and wildlife reservoirs. Of great present interest is the field testing of a new live-virus vaccine against this disease. The results to date in one epidemic among horses indicate that this vaccine is highly effective.

STUDY AWARDS

The Rockefeller Foundation's study awards are integrated with its main areas of interest. Through its fellowships and scholarships, the Foundation seeks to train personnel and to advance knowledge in the medical and natural sciences, the agricultural sciences, the humanities and social sciences, and the arts, with the aim of bringing highly trained human resources to bear on the basic problems which limit man's well-being. 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 1966 a total of 663 persons held Foundation fellowships and scholarships; 490 awards that began in previous years continued active into 1966, and 173 new awards became active during the year. Their distribution by program is as follows:

	Study Awards from Previous Years Continued into 1966	New Awards in 1966	Number of Awards Active in 1966
Agricultural Sciences	259	59	318
Medical and Natural Sciences	86	49	135
Humanities and Social Sciences	145	64	209
Arts Program		1	1
	490	173	663

Fe Esperanza P. Roque, appointed from the University of the Philippines, is a graduate student in chemistry at the University of Michigan.

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Bipan Chandra, appointed from the University of Delhi, India, is studying history at the University of Chicago.

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Ernesto Moreno Martínez, a plant pathologist from Mexico's National Institute of Agricultural Research, is pursuing graduate studies in the Department of Plant Science, University of Minnesota.

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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 1966 and previous years by the Foundation. The organizations administered a total of 76 fellowships provided for by Foundation funds during 1966:

Population Council	
Demographic	30
Medical	3
Technical Assistance	8
Social Science Research Council	
Research Training Fellowships	34
Political Theory and Legal Philosophy	1
	76

Rockefeller Foundation fellows and scholars in 1966 came from 43 countries:

	Previous Awards	New Awards		Previous Awards	New Awards
Argentina	8	1	Malawi	1	—
Bolivia	1	—	Malaysia	3	—
Brazil	21	5	Mexico	59	10
British Guiana	1	—	Nicaragua	2	—
Chile	33	16	Nigeria	30	15
Colombia	69	15	Pakistan	1	—
Congo, the Republic of the	2	1	Peru	12	3
Costa Rica	10	1	Philippines	78	21
Denmark	1	—	Rhodesia	2	—
Ecuador	4	3	Sierra Leone	1	—
Ethiopia	8	—	Sudan	13	9
France	1	—	Taiwan (National Republic of China)	3	2
Ghana	1	—	Tanzania	4	2
Great Britain	1	—	Thailand	29	34
Guatemala	6	1	Turkey	3	—
Honduras	1	1	Uganda	17	3
India	43	15	United Arab Republic	1	1
Indonesia	2	—	United States	2	5
Iran	1	—	Uruguay	—	1
Israel	—	1	Vietnam	1	—
Japan	2	—		490	173
Kenya	9	7			
Lebanon	3	—			

For its fellowship and scholarship activities The Rockefeller Foundation made available a total of $4,200,000 during 1966 and $4,150,000 during 1967. From these funds allocations totaling $488,500 were made in 1966 in the form of unrestricted grants to 101 institutions in the United States and foreign countries 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 paid by the Foundation through its fellowship and scholarship awards.

Fellows and scholars whose awards became active in 1966 are listed by name and country on pages 173 to 185.

ORGANIZATIONAL INFORMATION

MEETINGS

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

TRUSTEES

Dr. Lowell T. Coggeshall retired from the Board of Trustees on June 30; he had been a member since July 1, 1960. Dr. Coggeshall was a member of the staff of the former International Health Division of the Foundation from 1935 to 1941. In 1946, after five years as a professor at the School of Public Health of the University of Michigan, he went to the University of Chicago as chairman of its Department of Medicine and in 1960 he became a Vice-President of the University. During 1956 and 1957 Dr. Coggeshall served as a Special Assistant to the Secretary of the Department of Health, Education, and Welfare.

Dr. Robert H. Ebert was elected to the Board of Trustees at the meeting on April 6, to serve beginning July 1. Since 1965 he has been Dean of the Harvard Medical School and of the Faculty of Medicine. Prior to his appointment to Harvard in 1964 as Jackson Professor of Clinical Medicine and head of the Department of Medicine at the Massachusetts General Hospital, he taught medicine and held administrative posts at the University of Chicago and Western Reserve University.

GRANTS 1966

INTERNATIONAL

ROCKEFELLER FOUNDATION International Program in Agricultural Sciences:

Salaries, travel, and other expenses of Foundation field staff		$1,773,400
Programs		
Colombian and Andean centers	$240,300	
India	346,250	
Inter-Asian Corn Program	50,000	
Mexico	353,700	
Nigeria	50,000	
Philippines	426,875	1,467,125
TOTAL—Appropriations made in 1966		$3,240,525

ROCKEFELLER FOUNDATION International Program in Field Research in Medical Sciences, Nutrition, and Population Problems:

Schistosomiasis research and control, St. Lucia, West Indies	$ 84,000

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS, Rome, Italy: travel to its World Symposium on Warm-water Pond Fish Culture, in Rome, by delegates; $7,500;

INTER-AMERICAN INSTITUTE OF AGRICULTURAL SCIENCES, Costa Rica:

San José

Toward the costs of operating the Secretariat of the Latin American Association of Plant Science at San José; $50,000 through May, 1973;

Development of agricultural libraries in Brazil; $15,000;

Support of the Third Latin American Conference on Higher Agricultural Education, in Piracicaba, Brazil; $15,000;

Turrialba

Establishment of a permanent secretariat for the Inter-American Association of Agricultural Librarians and Documentalists; $15,000;

AUSTRALIA

DR. K. W. FINLAY, Waite Agricultural Research Institute, Glen Osmond: to visit wheat research centers in Mexico, Europe, and the Middle East; $4,650;

DR. DIRK MAARTEN LEEUWRIK, Department of Agriculture of Victoria, Melbourne: to visit wheat centers in Mexico and the United States; $1,750;

BRAZIL

CARLOS HOLGER WENZEL FLECHTMANN, Luiz de Queiroz School of Agriculture, University of São Paulo, Piracicaba: to study acarology at Ohio State University, Columbus, and to visit institutions in the United States; $1,900;

INSTITUTE OF AGRONOMY OF THE STATE OF SAO PAULO, Campinas: basic equipment for the Tropical Center of Food Research and Technology; $90,000 through January, 1968;

RURAL UNIVERSITY OF THE STATE OF MINAS GERAIS, Viçosa: expansion of its School of Domestic Science and research in native food plant species in the Institute of Plant Breeding and the Department of Horticulture; $57,000 through January, 1970;

UNIVERSITY OF MINAS GERAIS, Belo Horizonte:

Dr. A. V. Machado; to attend the First Latin American Meeting on Animal Production, in Venezuela, and to visit schools of veterinary medicine in the United States; $1,025;

Dr. Waldir Marinho Pedersoli, University of Illinois, Urbana; to return to Belo Horizonte to serve as assistant professor in the Veterinary School; $955;

CHILE

DR. JOHN LISTON, University of Washington, Seattle: to observe developments in fisheries education in Chilean university centers; $1,200;

UNIVERSITY OF CHILE, Santiago:

Research, directed by Dr. Fernando Mönckeberg, on malnutrition in infants and preschool children; $15,000;

Miss María L. Alvarez; to participate in an in-service training course at the Inter-American Institute of Agricultural Sciences, Turrialba, Costa Rica; $1,352;

UNIVERSITY OF CONCEPCION, Chillán:

University of California, Davis; to enable Dr. Huib Tollenaar to assist with the plant pathology program; $15,000 for a two-year period;

To enable Dr. Harold F. Hollands, Oregon State University, to assist in the agricultural economics program of the Faculty of Agronomy; $8,750 for a two-year period;

MRS. MARTA VARGAS DE NARANJO, Ministry of Agriculture, Santiago: to observe control procedures in feed analysis in the United States; $2,520;

COLOMBIA

COLOMBIAN INSTITUTE OF AGRICULTURE, Bogotá:

Support of its teaching, research, and extension programs; $259,000;

Equipment for the Faculties of Agronomy located at Bogotá, Palmira, and Medellín, and the Veterinary Faculty, Bogotá; $50,000;

Ing. Ricardo Ramirez; to visit selected seed certification programs in the United States; $1,110;

MISS ELBA DUQUE-RESTREPO, National University of Colombia, Medellín: to visit the Inter-American Institute of Agricultural Sciences, Turrialba, Costa Rica; $1,400;

ROCKEFELLER FOUNDATION International Program in Agricultural Sciences: Colombian program; *see International, above;*

UNIVERSITY OF VALLE, Cali: research on grains and other food products in cooperation with the Colombian Institute of Agriculture in Bogotá and the Institute's experiment station in Palmira; $40,000 through June, 1968;

COSTA RICA

ING. CARLOS ALBERTO SALAS F., and DR. RONALD JOHN ECHANDI, University of Costa Rica, San José: to visit maize improvement programs in Mexico; $1,750;

FRANCE

INSTITUTE OF APPLIED ECONOMICS, Paris: research by its office in Dakar, Senegal, on food production and demand; $14,400;

DR. JACQUES BERNARD MOSSE, National Institute of Agronomic Research, Versailles: to participate in the meetings of the American Institute of Nutrition, in Atlantic City, New Jersey; $765;

HONDURAS

PAN AMERICAN AGRICULTURAL SCHOOL, Tegucigalpa: support of a symposium on plant introduction; $15,000 for a two-year period;

INDIA

DR. GANESH V. BAKORE, University of Udaipur: to observe the organization and operation of the Ohio State University Graduate School, Columbus; $2,290;

G. G. NARAYANA GOWDA, Government of Mysore, Bangalore: to observe organizational and administrative procedures at agricultural institutions in Asia, Europe, and the United States; $6,700;

K. K. MANDLOI, Coordinated Maize Breeding Scheme, Chhindwara, Madhya Pradesh: to visit the International Maize and Wheat Improvement Center in Mexico, and seed centers in the United States; $4,525;

DR. SUNIL KUMAR MUKHERJEE, Indian Agricultural Research Institute, New Delhi: to participate in the 17th International Horticultural Congress at the University of Maryland, College Park, and to visit horticultural research centers in England, Europe, and the Middle and Far East; $4,030;

DR. K. C. NAIK, University of Agricultural Sciences, Bangalore, Mysore: to observe organizational and administrative procedures at agricultural institutions in Asia, Europe, and the United States; $6,700;

DR. BENJAMIN P. PAL, Indian Council of Agricultural Research, New Delhi: to participate in the 17th International Horticultural Congress at the University of Maryland, College Park, and to observe agricultural institutions in the United States and the Philippines; $3,375;

M. A. QURAISHI, Commissioner of Agricultural Production and Agricultural Secretary, Uttar Pradesh: to visit agricultural institutions in Japan and the United States; $3,150;

DR. O. PULLA REDDI, Andhra Pradesh Agricultural University, Hyderabad: to visit agricultural institutions in Europe, the United States, and the Far East; $7,050;

ROCKEFELLER FOUNDATION International Program in Agricultural Sciences:

Indian program; *see International, above*;

Laboratory for research on protein quality in cereal grains at the Indian Agricultural Research Institute, New Delhi; $77,000 through August, 1969;

DHYAN PAL SINGH, Uttar Pradesh Agricultural University, Pantnagar: to visit agricultural institutions in Japan and the United States; $3,150;

UNIVERSITY OF WISCONSIN, Madison: to enable Dr. P. K. Das, India Meteorological Department, New Delhi, to consult in the United States on numerical modeling of the atmosphere; $2,000;

JAPAN

DR. SADAO NISHI, Horticultural Research Station, Hiratsuka, Kanagawa: to visit centers of horticultural research in the United States; $2,185;

TOHOKU UNIVERSITY, Sendai: publication in English of a report on upland farming; $2,000;

JORDAN

KARIM KAMEL HUSSEINI, Ministry of Agriculture, Amman: to observe methods of arid land management in the western United States; $575;

KENYA

EAST AFRICAN COMMON SERVICES ORGANIZATION, Nairobi:

Laboratory equipment for the East African Agriculture and Forestry Research Organization; $60,000 through September, 1968;

Expansion of technical information resources and services in the library of the East African Agriculture and Forestry Research Organization; $50,320 through June, 1968;

TECWYN JONES, East African Agriculture and Forestry Research Organization, Nairobi: to visit European centers of crop protection research; $1,595;

MINISTRY OF AGRICULTURE AND ANIMAL HUSBANDRY, Nairobi: toward the expenses of a group to study agricultural education in Kenya; $19,000 for a two-year period;

UNIVERSITY COLLEGE, Nairobi (University of East Africa):

Practical immunology experiments on East Coast fever in the Faculty of Veterinary Science; $35,000;

Research on the physiology and endocrinology of the tsetse fly; $15,000;

Dr. G. M. Urquhart, University of Glasgow, Scotland; to serve as a consultant in helminthology in the Faculty of Veterinary Science; $1,300;

MEXICO

FRITZ ALBERT, University of Wisconsin, Madison: travel in Europe to select agricultural films for a Mexican film library; $1,720;

INTERNATIONAL MAIZE AND WHEAT IMPROVEMENT CENTER, Chapingo: establishment of a protein quality laboratory; $150,000 through June, 1969;

NATIONAL CENTER FOR LIVESTOCK RESEARCH, Palo Alto:

Dr. Sergio Brambila; to participate in the VIIth International Congress of Nutrition in Hamburg, Germany; $1,200;

Dr. Eduardo Rivera C.; to confer with Rockefeller Foundation staff and others in Colombia and to attend a symposium on rabies at the Communicable Disease Center in Atlanta, Georgia; $650;

Dr. Pedro Solana M.; to participate in a conference on the biology of *Mycoplasma* sponsored by the New York Academy of Sciences, and to consult with faculty at Texas A & M University; $575;

NATIONAL INSTITUTE OF AGRICULTURAL RESEARCH, Mexico City:

Silvestre Espino Tejeda; to attend the American Rice Congress; $450;

José Felipe Nuñez; to attend the National Rice Workers' Meeting in Little Rock, Arkansas; $385;

ROCKEFELLER FOUNDATION International Program in Agricultural Sciences: toward operating costs of the International Maize and Wheat Improvement Center, Chapingo; *see International, above;*

NATIONAL REPUBLIC OF CHINA

JOINT COMMISSION ON RURAL RECONSTRUCTION, Taipei: fish culture research by the Taiwan Fisheries Research Institute; $150,000 for a two-year period;

NIGERIA

NNAOKE OKERE ARUNSI, University of Nigeria, Nsukka: to visit agricultural libraries in the United States and Europe and to take training at the library of Michigan State University, East Lansing; $4,875;

DR. ROGER JOHN HAGGAR, Ahmadu Bello University, Zaria: to visit pasture research centers in Australia and the United States; $5,150;

ROCKEFELLER FOUNDATION International Program in Agricultural Sciences: Nigerian program; *see International, above;*

UNIVERSITY OF IBADAN: socio-economic research in the Kainji Dam region by the Nigerian Institute of Social and Economic Research; $15,000;

PERU

AGRARIAN UNIVERSITY, La Molina, Lima: research and teaching in agricultural economics and rural sociology in cooperation with North Carolina State University; $180,000 for a four-year period;

DR. MANUEL MORO, Veterinary Institute for Tropical and High Altitude Research, Lima: to visit veterinary centers in the United States and Latin America; $3,360;

PHILIPPINES

INTERNATIONAL RICE RESEARCH INSTITUTE, Los Baños: basic equipment for studies on the protein quality of rice; $15,000;

PHILIPPINE FISHERIES COMMISSION, Manila: fish culture research; $150,000 for a two-year period;

ROCKEFELLER FOUNDATION International Program in Agricultural Sciences: toward operating costs of the International Rice Research Institute, Los Baños; *see International, above;*

FELIXBERTO D. ROQUIA, Central Mindanao University, Musuan: travel to the University of Missouri, Columbia, for graduate study and research; $700;

UNIVERSITY OF THE PHILIPPINES:

Los Baños

Dr. Ramon V. Valmayor; plant collection in Thailand, Europe, Latin America, and the United States; $3,530;

Dr. Virgilio R. Carangal, University of Minnesota, St. Paul; to return to the Philippines to join the staff of the College of Agriculture; $1,500;

Dr. Cesar C. Jesena, Jr., Kansas State University, Manhattan; to return to the Philippines to join the staff of the College of Agriculture; $1,350;

Quezon City

Equipment for schistosomiasis research in the Institute of Hygiene; $15,000;

SUDAN

UNIVERSITY OF KHARTOUM:

Research on the ecology of bilharzia vectors in the Sudan; Sudanese £5,078 (about $14,830) for a three-year period;

To enable Dr. Gaafar M. Bakheit to serve as visiting lecturer in the Department of Political Science; to enable visiting scholars from the Middle East and Africa to travel to the University; Sudanese £2,650 (about $7,700) through June, 1968;

Dr. Mohamed Abdulla Nour; to visit agricultural programs in Asia; $2,660;

SWEDEN

DR. THORE DENWARD, University of Lund: to visit potato research centers in Mexico and to attend professional meetings in the United States; $5,250;

TANZANIA

COLLEGE OF AGRICULTURE, Morogoro: selected capital costs and recurrent expenditures; $58,803;

THAILAND

KASETSART UNIVERSITY, Bangkok:

Research on the quality and quantity of protein in rice; $25,000 through September, 1968;

Rapee Sagarik; to visit agricultural institutions in the United States, and to participate in the Fifth World Orchid Conference in Los Angeles, California; $3,450;

OPERATING EXPENSES of the rice and corn-sorghum research programs in Thailand; $100,000;

ROCKEFELLER FOUNDATION International Program in Agricultural Sciences: Inter-Asian Corn Program; *see International, above;*

UGANDA

MAKERERE UNIVERSITY COLLEGE, University of East Africa, Kampala:

Bilharziasis research in the Department of Medical Microbiology under the direction of Dr. David J. Bradley; $15,000;

Professor Y. K. Lule; to visit Rockefeller Foundation agricultural projects in India, the Philippines, and Latin America, and to have consultations in the United States and the United Kingdom; $4,035;

UNITED ARAB REPUBLIC

DR. ABDUL HAFIZ, Food and Agriculture Organization of the United Nations, Cairo, Egypt: to visit wheat and barley research centers in North America and Europe; $3,220;

UNITED KINGDOM

ST. ANTONY'S COLLEGE, University of Oxford, England: study of land and labor in Asia by Dr. Werner Klatt; $15,000 for a two-year period;

T. R. TARN, University of Birmingham, England: to visit potato research centers in North America; $3,850 through January, 1968;

UNITED STATES

CORNELL UNIVERSITY, Ithaca, New York:

Social science research under the direction of Professor Thomas T. Poleman on the nutritional and agricultural implications of rapid urbanization in tropical Africa; $43,000;

International training program in plant breeding at the New York State College of Agriculture; $22,000 for a three-year period;

Dr. Madison J. Wright; research in tropical forage plants at the Division of Tropical Pastures, Commonwealth Scientific and Industrial Research Organization, Brisbane, Australia; $4,550;

ESTES PARK CENTER FOR RESEARCH AND EDUCATION, Colorado: support of a seminar on United States food policy in relation to world hunger; $1,166;

FUND FOR THE INTERNATIONAL CONFERENCE OF AGRICULTURAL ECONOMISTS, Chicago, Illinois: travel expenses of participants in the Thirteenth International Conference of Agricultural Economists in Sydney, Australia; $25,000;

GULF COAST RESEARCH LABORATORY, Ocean Springs, Mississippi: studies on inorganic nutrient assimilation rates in estuarine ponds, directed by Dr. Walter Abbott; $15,000;

KANSAS STATE UNIVERSITY ENDOWMENT ASSOCIATION, Manhattan: evaluation for insect resistance of germplasm in Mexican and Colombian corn banks, directed by Dr. Reginald H. Painter; $13,320;

NATIONAL ACADEMY OF SCIENCES, Washington, D.C.: multidisciplinary research and training program, administered by the Africa Science Board's Subcommittee on the Development of Water Resources in Africa, under the direction of Professor Gilbert F. White; $100,000 for a three-year period;

PURCHASE AND DISTRIBUTION of 700 copies of *The Millets*, a bibliography, published by the Scarecrow Press, New York, to research workers and agricultural institutions in the developing countries; $2,660;

PURDUE UNIVERSITY, Lafayette, Indiana:

To enable Dr. Homer T. Erickson to participate in a project of collection of plant materials in Brazil; $10,000;

Dr. Helmut Kohnke; to participate in the Pan American Congress of Soil Conservation in São Paulo, and to visit agronomy centers in Brazil; $2,250;

Dr. A. J. Ullstrup; to participate in the International Symposium on Plant Pathology in New Delhi, and to visit grain research centers in India; $2,150;

Dr. Edwin T. Mertz; to attend the Third Inter-Asian Maize Improvement Workshop in New Delhi, India; $1,675;

Dr. Paul L. Crane; to visit The Rockefeller Foundation's corn breeding program in Colombia; $1,270;

TEXAS A & M UNIVERSITY, College Station:

Evaluation of artificial insemination techniques on ranch cattle in Mexico, by José L. Escrivá; $1,200 for a two-year period;

Dr. Charles W. Livingston, Jr., and Dr. Fred D. Maurer; to explore in Mexico the possibility of establishing a cooperative research project on caprine pleuropneumonia with the National Center for Livestock Research, Palo Alto, Mexico; $900;

TULANE UNIVERSITY OF LOUISIANA, New Orleans: research on means of identifying amino acids in proteins and protein fractions; $70,000 through January, 1969;

UNITED STATES DEPARTMENT OF AGRICULTURE:

Beltsville, Maryland

Dr. Lucia Pearson; to collect data on experimental dairy herds at research centers in Colombia; $1,012;

Washington, D.C.

Foster E. Mohrhardt; to visit centers in India and Southeast Asia to study the possibilities for an international network of agricultural libraries; $825;

UNIVERSITY OF ARIZONA, Tucson:

Research under the direction of Dr. Maurice M. Kelso on water resources in relation to social and economic growth in an arid environment; $25,000 through September, 1969;

Research on agricultural development and cultural change in northwest Mexico, directed by Professor Harland Padfield, Department of Anthropology; $8,000;

UNIVERSITY OF CALIFORNIA:

Berkeley

Research in methods of field assessment of protein-calorie malnutrition by Dr. Robert B. Bradfield, Department of Nutritional Sciences; $11,400;

Research on the fungus *Fusarium* under the direction of Dr. William C. Snyder; $4,050;

Davis

Research in the Department of Agricultural Zoology on anatomical adaptation for cellulose digestion in herbivores; $15,000 for a two-year period;

Research on the efficiency of compensatory growth in animals by Jeffrey J. Walker; $3,000;

Research on the economic and other institutional forces that affect the food industry, particularly in developing countries, directed by Professor D. B. DeLoach, Department of Agricultural Economics; $2,500;

Riverside

Support and travel costs for Jesús Castro Franco, graduate student in the Department of Plant Pathology; $2,000 for a two-year period;

Dr. Nathaniel T. Coleman, Dry-Lands Research Institute; to visit soil science centers in Colombia; $1,200;

San Francisco

Toward research by the San Francisco Medical Center on schistosome-echinostome interactions in snails in Brazil; $8,730;

UNIVERSITY OF CHICAGO, Illinois: research, by Professor Gilbert F. White, on the development and use of international water resources in Africa; $7,000;

UNIVERSITY OF ILLINOIS, Urbana: travel costs of selected staff members and recent graduates of Indian agricultural universities engaged in postgraduate study in the United States; $19,500 for a three-year period;

UNIVERSITY OF MINNESOTA, St. Paul:

Dr. Vernon W. Ruttan; to attend the Eleventh Pacific Science Congress in Tokyo, Japan, and to visit agricultural centers in the Philippines; $2,095;

Dr. J. C. Sentz; to visit corn improvement programs in Mexico; $485;

UNIVERSITY OF NEBRASKA, Lincoln: to enable Dr. William B. Allington to assist with the plant pathology program at the Colombian Institute of Agriculture, Bogotá; $2,718;

UNIVERSITY OF NEBRASKA FOUNDATION, Lincoln: research on the physiology of sorghum yield and on sorghum management as they relate to genetic improvement; $533,000 for a five-year period;

UNIVERSITY OF PENNSYLVANIA, Philadelphia: support of a workshop on protection of the preschool child, under the auspices of the VIIth International Congress of Nutrition, in Hamburg, Germany; $3,000;

UNIVERSITY OF WISCONSIN, Madison:

Research on the economic and social implications of schistosomiasis control in St. Lucia, West Indies; $195,000 through September, 1969;

Research on the nature of resistance in tuber-bearing solanums to bacterial wilt; $11,484;

Research on the biology of wild animal species in East Africa; $10,000;

Development of a plan for research on the social and economic effects of schistosomiasis control in St. Lucia, West Indies; $7,500;

WEST VIRGINIA UNIVERSITY FOUNDATION, Morgantown: to enable the director of libraries to consult in the United States, Europe, and Africa on development of a scientific information service for the East African Agriculture and Forestry Research Organization; $2,500;

DR. HARRY C. YOUNG, Oklahoma State University, Stillwater: to participate in the International Symposium of Plant Pathology in New Delhi, India, and to consult on plant diseases in Europe, Israel, India, the Far East, and Hawaii; $2,540;

WEST INDIES

Cooperative projects in schistosomiasis research and control in St. Lucia: construction expenses; $78,000;

See also International, above.

CHILE

UNIVERSITY OF CHILE, Santiago:

Study on the feasibility and effectiveness of an expanded family planning program outside the metropolitan area of Santiago; $300,000 for a three-year period;

Research on the feasibility and effectiveness of family planning measures undertaken in the postpartum period; $150,000 for a three-year period;

COLOMBIA

UNIVERSITY OF VALLE, Cali:

Population studies under the direction of the University Committee for Population Studies (CUIP); $125,000 for a two-year period;

Development of a University Center for the Protection of Mother and Family, under the auspices of the University Committee for Population Studies (CUIP) and the Department of Obstetrics and Gynecology; $56,000 for a two-year period;

HONG KONG

CHINESE UNIVERSITY OF HONG KONG: study of the population of Hong Kong by Professor Chen Cheng-siang; $15,000 for a two-year period;

INDIA

INDIAN COUNCIL OF MEDICAL RESEARCH, New Delhi: research equipment for its Reproductive Physiology Unit at Bombay directed by Dr. Shanta S. Rao; $19,300 for a two-year period;

MEXICO

COLEGIO DE MEXICO, Mexico City: research program in demography in its Center for Economic and Demographic Studies; $90,000 for a three-year period;

PHILIPPINES

DR. DOMICIANA DAUIS-LAWAS, University of the Philippines, Manila: to study cytogenetics at the University of Wisconsin, Madison; $3,500;

TANZANIA

DAR ES SALAAM SCHOOL OF MEDICINE: development of population studies under the direction of Dr. Christopher H. Wood; $15,000;

THAILAND

DR. CHARAS YAMARAT, and DR. KASARN CHARTIKAVANIJ, University of Medical Sciences, Bangkok: to study the organization and programs of population centers in the United States; $4,600;

TURKEY

MINISTRY OF HEALTH AND SOCIAL ASSISTANCE, Ankara: equipment for the School of Public Health for use in the Turkish Demographic Survey; $6,700;

UNITED STATES

COLUMBIA UNIVERSITY, New York: toward construction of a building for the International Institute for the Study of Human Reproduction; $1,500,000;

DUKE UNIVERSITY, Durham, North Carolina: study of differential fertility and population growth in the United States by Dr. Reynolds Farley, assistant professor of sociology; $8,000;

INTERNATIONAL PLANNED PARENTHOOD FEDERATION—WESTERN HEMISPHERE REGION, New York: toward the costs of the Eighth International Conference of the Federation, in Santiago, Chile; $25,000;

MOUNT SINAI SCHOOL OF MEDICINE, New York: research on motivation for family planning among economically disadvantaged groups; $24,950;

PLANNED PARENTHOOD FEDERATION OF AMERICA, New York: survey of family planning curricula in United States schools of nursing, by Miss Ruth Martin; $15,000;

POPULATION COUNCIL, New York:

Fellowships for candidates from Africa, Asia, and Latin America to be awarded over a five-year period; $500,000;

International study of the effectiveness of family planning measures undertaken in the postpartum period; $350,000 for a two-year period;

RESEARCH FOUNDATION OF STATE UNIVERSITY OF NEW YORK, Albany: scholarships and training grants to enable foreign nurse-midwives to undertake training in family planning at the Downstate Medical Center; $88,900 for a two-year period;

UNIVERSITY OF COLORADO, Boulder: research on the relationship between population growth and economic development in Mexico, directed by Professor Wyn F. Owen, Center for International Economic Studies; $9,000;

UNIVERSITY OF HAWAII, Honolulu: planning conference on population problems, at the East-West Center; $15,000;

UNIVERSITY OF MICHIGAN, Ann Arbor: studies of the teaching of population matters and family planning in professional schools; $15,000;

UNIVERSITY OF NORTH CAROLINA, Chapel Hill:

Preparation of educational materials on population and development of a computerized information retrieval service; $400,000 for a three-year period;

Establishment of a family planning unit in the Department of Obstetrics and Gynecology of the School of Medicine; $260,000 for a five-year period;

WESTERN RESERVE UNIVERSITY, Cleveland, Ohio: **teaching and research programs in the Department of Obstetrics and Gynecology in population dynamics and human reproduction; $210,000 for a five-year period.**

UNIVERSITY DEVELOPMENT

INTERNATIONAL

ROCKEFELLER FOUNDATION International Program in University Development:

Salaries, travel, and other expenses of Foundation field staff for 1967		$ 596,300
Visiting faculty requested by universities abroad		1,130,607
Program centers—for 1967 expenses		
Chile	$ 65,795	
Colombia	65,000	
East Africa		
Kenya	16,400	
Tanzania	16,600	
Uganda	17,400	
Nigeria	25,000	
Philippines	37,200	
Thailand	137,025	380,420
Other developmental expenses for 1967		120,000
TOTAL—Appropriations made in 1966		$2,227,327

AUSTRALIA

DR. SYDNEY SUNDERLAND, University of Melbourne: to observe developments in medical education in university centers in Brazil, Colombia, Peru, and Jamaica; $1,000;

BRAZIL

UNIVERSITY OF MINAS GERAIS, Belo Horizonte:

Rockefeller Foundation International Program in University Development; visiting faculty requested by the University of Minas Gerais; *see International, above*;

Dr. John T. Bernhard, Brigham Young University, Provo, Utah; consultant, University Planning Committee;

Equipment for the Central Institute of Physics; $41,115;

CANADA

McGILL UNIVERSITY, Montreal: visiting faculty appointments in Africa, Asia, and Latin America, to be administered by its Centre for Developing-Area Studies; $300,000 through June, 1971;

CHILE

INSTITUTIONS IN SANTIAGO:

Agricultural Research Institute

Research in cooperation with the University of Chile; $50,000 through December, 1968;

Catholic University of Chile

Development of research and teaching in labor economics with the assistance of Professor H. Gregg Lewis, University of Chicago; $30,650 through December, 1968;

Equipment for the Center of Economic Studies; $21,000;

Equipment for the Laboratories of Neurophysiology and of Electron Microscopy; $15,000;

Research in the Center of Economic Studies, directed by Professors James Gavan and Raúl Yver; $14,700;

Development of an undergraduate research program in the Department of History under the direction of Professor Ricardo Krebs; $11,520;

University of Chile

Equipment and supplies for the development of advanced undergraduate and graduate training programs in the Faculty of Sciences; $100,000 through December, 1968;

Research and the development of a graduate studies program in the Center of Research on American History; $66,500;

Support of graduate training and research in the Institute of Economics; $23,500;

Tufts University, Medford, Massachusetts;

To enable Arnold J. Bauer to accept a teaching-research assignment in American history; $12,450 for a 15-month period;

To enable Frederick Z. Jaspersen to accept a teaching-research assignment in economics; $12,450 for a 15-month period;

Mrs. Amalia Rodriguez, chief librarian; to visit libraries in the United States; $2,770;

Alvaro Jara, professor of economic history; to attend professional meetings and have consultations in Europe and South America; $2,000;

ROCKEFELLER FOUNDATION International Program in University Development: Chilean program; *see International, above;*

COLOMBIA

ROCKEFELLER FOUNDATION International Program in University Development: Colombian program; *see International, above;*

UNIVERSITY OF VALLE, Cali:

Rockefeller Foundation International Program in University Development; visiting faculty requested by the University of Valle; *see International, above;*

Dr. J. Leon Helguera, Vanderbilt University, Nashville, Tennessee; visiting professor in the Faculty of Philosophy, Letters, and History;

Julio Retamal Favereau, University of Chile, Santiago; visiting professor in the Faculty of Philosophy, Letters, and History;

Oswaldo Silva Galdomes, University of Chile, Santiago; visiting professor in the Faculty of Philosophy, Letters, and History;

Dr. D. A. G. Waddell, University of Edinburgh, Scotland; visiting professor in the Faculty of Philosophy, Letters, and History;

Salaries and salary supplements for university personnel; $100,000;

Toward development of facilities of the University Hospital; $50,000 through December, 1968;

Materials for the library; $40,000;

Construction of administrative facilities; $30,000;

Construction of offices and classrooms; equipment for the Candelaria Rural Health Center; $30,000;

Postgraduate training awards for non-Colombians; $30,000;

Accounting equipment for the Medical Center; $20,000;

Strengthening of the administrative services of the University Hospital; $20,000;

Administrative consultative services; $17,000;

Faculty development in the School of Nursing; $15,000;

University of Florida, Gainesville; exchange program of doctors and nurses between its Health Center and the University of Valle Medical Center; $15,000;

To enable Miss Carmela Cavero, Downstate Medical Center, New York, to serve as visiting professor in the School of Nursing; $11,000;

Socio-economic survey of the state of Valle by the Center of Economic Research; $9,800;

Equipment for its language laboratory; $8,900;

Michigan State University, East Lansing; to enable Douglas D. Hedley to serve as research assistant to Dr. Gerald I. Trant, visiting professor of agricultural economics; $7,500;

To enable Dr. Dan A. Sullivan, Washington University, St. Louis, Missouri, to serve as visiting professor of geology; $6,500;

Research in agricultural economics by the Center of Economic Research; $5,530;

To enable Guillermo Antonio Falk and Jesús Hernando Velosa to attend a course in "Structures" at Stuttgart Technical University, Federal Republic of Germany; $4,000;

Appointment of Carlos Sterling to the Department of History; $3,500;

Equipment for the library; $3,500;

To enable José Ignacio Borrero H. and Dr. Henrique Tono to observe biology teaching programs and to attend professional meetings in the United States; $2,040;

Elbert S. Moore; advanced study in the United States in linguistics and language teaching; $1,800;

Dr. Pablo Medina; study in the United States in laboratory diagnostic procedures in leptospirosis and tuberculosis; $1,600;

Dr. Jorge Escobar Soto; to visit nurse-midwife and family planning programs and observe hospital administration in the United States; $1,550;

To enable Dr. Timothy Loeb to serve as visiting assistant professor of biology; $1,500;

José Aníbal Patiño Rodriguez; to study aquatic biology in the United States; $1,265;

Equipment for administrative services; $1,100;

Miss Eliza C. Avellar, Department of Public Health, Berkeley, California; to visit the University of Valle for a family planning conference and for professional discussions; $945;

Dr. William van B. Robertson, Stanford University School of Medicine, Palo Alto, California; to observe developments in the Department of Physiological Sciences in Cali and to visit medical schools in Medellín and Bogotá; $900;

Dr. William A. Wimsatt, Cornell University, Ithaca, New York; to observe developments in the biological sciences at the University of Valle; $875;

Seminar on the humanities; $500;

CONGO

Lovanium University, Kinshasa: research and training in political science in the Institute of Economic and Social Research, under the direction of Professor Benoît Verhaegen; $7,500;

KENYA

Rockefeller Foundation International Program in University Development: East African program; *see International, above;*

University College, Nairobi (University of East Africa—*see also Tanzania and Uganda*):

Support of the Faculty of Veterinary Science; 1,400,000 East African shillings (about $200,200);

Research in economics and the social sciences; 376,000 East African shillings (about $53,770);

Support of the Social Science Division of the Institute for Development Studies; 144,095 East African shillings (about $20,600);

Research in the Cultural Division of the Institute for Development Studies; 77,000 East African shillings (about $11,000);

University of Michigan, Ann Arbor; to enable Robert Posner to accept a teaching assignment in economics; $10,625;

Rice University, Houston, Texas; to enable Alan R. Waters to accept a teaching assignment in economics; $10,533;

Christian Michelsen Institute, Bergen, Norway; research on the East African economy by H. E. Dahl; $9,000;

Books in American and in African history for the Department of History; $3,500;

Research materials for the Department of Government and Administration; 20,980 East African shillings (about $3,000);

Research in India on the history of the Asians in East Africa, by J. S. Mangat, Department of History; $1,023;

MEXICO

ING. DANIEL AMADOR URIBE and ING. RAMON MONROY OLIVAR, National School of Agriculture, Chapingo: to visit universities in the United States; $1,750;

NIGERIA

MRS. ADETOUN BAILEY, Federal Ministry of Health, Lagos: to visit nursing centers in Africa; $3,190;

ROCKEFELLER FOUNDATION International Program in University Development: Nigerian program; *see International, above;*

UNIVERSITY OF IBADAN:

Rockefeller Foundation International Program in University Development; visiting faculty requested by the University of Ibadan; *see International, above;*

Dr. Edwin R. Dean, Columbia University, New York; research fellow, Nigerian Institute of Social and Economic Research;

Dr. Philip J. Foster, University of Chicago, Illinois; visiting professor of sociology for 15 months;

Professor Max Boyd Rosselot, Miami University, Oxford, Ohio; consultant, Academic Office;

Dr. Lee C. Soltow, Ohio University, Athens; visiting scholar, Nigerian Institute of Social and Economic Research;

Dr. Robert Lee Wilson, Ohio Wesleyan University, Delaware; visiting professor of mathematics, and manager, IBM Computer Center, for two years;

Support of the rural health center at Igbo-Ora; £64,130 (about $180,800);

Establishment of a Reading Centre in the Faculty of Arts; $100,000 through September, 1969;

Support of the Department of Psychiatry, Neurology, and Neurosurgery; £27,342 (about $77,100);

Establishment of a language laboratory in the Faculty of Arts; $60,000 through September, 1969;

Research fellowships in the Department of Veterinary Medicine; Nigerian £12,900 (about $36,765) through June, 1968;

Lectureships in the Faculty of Agriculture; Nigerian £11,000 (about $31,350) through June, 1968;

Support of medical training posts; £7,359 (about $20,983);

Appointment of a medical librarian; £5,750 (about $16,388) through June, 1968;

University of the West Indies, Mona, Jamaica; to enable Dr. Errol Hill to spend a second year in residence at the School of Drama; £4,006 (about $11,300);

Equipment for the Department of Chemistry; $7,500;

Dr. H. R. Albrecht, North Dakota State University, Fargo; to participate in a survey of the Faculty of Agriculture; $5,200;

Dr. O. S. Willham, Oklahoma State University, Stillwater; to participate in a survey of the Faculty of Agriculture; $4,425;

Dr. G. D. H. Bell, Plant Breeding Institute, Trumpington, Cambridge, England; to participate in a survey of the Faculty of Agriculture; $3,640;

Dr. Glenn H. Beck, Kansas State University, Manhattan; to participate in a survey of the Faculty of Agriculture; $3,575;

S. J. Okudu; to visit universities in the United Kingdom and the United States to observe administrative procedures; $3,525;

Mrs. Felicia Apenasomi Iweze; to observe the administration and operation of metabolic units in the United Kingdom and the United States; $2,880;

Dr. Oladipo O. Akinkugbe; to visit medical centers in the United States; $2,850;

Dr. H. R. Chheda; to visit pasture breeding and seed production centers in the United States; $2,550;

Dr. Babatunde Oladipo Amure; to visit university schools of nursing in the United States; $2,500;

J. O. Hunwick; to visit Arabic and Islamic studies centers in the United States, the United Kingdom, and the Middle East; $2,300;

Joel Adedeji; to visit theatre centers in the United States; $1,720;

For use by the Department of Arabic and Islamic Studies toward the costs of an Arabic training program at the Institut Bourguiba des Langues Vivantes in Tunisia; Nigerian £563 (about $1,600);

Computer service for a study by Professor Q. B. O. Anthonio, Department of Agricultural Economics; Nigerian £550 (about $1,570);

Dr. Richard R. Willcox, St. Mary's Hospital and King Edward VII Hospital, London, England; consultation on the establishment of a venereal diseases teaching unit in the Faculty of Medicine; $1,120;

PHILIPPINES

ROCKEFELLER FOUNDATION International Program in University Development: Philippine program; *see International, above;*

UNIVERSITY OF THE PHILIPPINES:

Rockefeller Foundation International Program in University Development; visiting faculty requested by the University of the Philippines; *see International, above;*

Dr. Charles W. Kegley, Wagner College, New York; visiting professor of philosophy;

Dr. Elder James Olson, University of Chicago, Illinois; visiting professor of English;

Los Baños

Scholarship program for Southeast Asian students in the College of Agriculture; $30,000;

Support of the cooperative corn improvement project of the College of Agriculture; $4,500;

Development of the irrigation system at the College of Agriculture; $1,855;

Manila

To enable Rustico M. Vicente, College of Medicine, to take advanced training in medical electronics at the University of Wisconsin and to attend the annual meeting of the American Federation of Biological Scientists; $6,000;

Dr. Paulo C. Campos; to visit rural community health teaching centers and medical schools in India and Southeast Asia; $1,700;

Quezon City

Development of the Social Sciences and Humanities Center; $250,000 through June, 1969;

Development of a rural community health teaching service; $75,000 through August, 1969;

Faculty housing; $75,000;

Toward construction of an international center; $55,000;

Research equipment for the Department of Pharmacology, College of Medicine; $35,000;

Dr. Herbert A. Krause, Augustana College, Sioux Falls, South Dakota; to serve for 19 months as visiting professor in the Department of English and Comparative Literature; $28,325;

Advanced study program for the Division of Natural Sciences faculty; $25,000 through 1969;

Research equipment and supplies in the Department of Physiology; $25,000;

Conference, in the School of Economics, on Indonesian economic stabilization; $20,000;

Research equipment for the Department of Biochemistry, College of Medicine; $20,000;

Dr. Agustin Kintanar, Jr.; research in the United States on financing economic development in underdeveloped countries; $15,000;

Research equipment and supplies in the Department of Anatomy; $15,000;

Completion of a study of the Philippine financial system and its relation to economic development; 27,690 Philippine pesos (about $7,340);

Equipment for the Eye Research Institute, College of Medicine; $7,000;

Library materials and teaching aids for the Institute of Hygiene; $7,000;

Strengthening the library of the Department of English and Comparative Literature; $5,000;

Professor Remigio E. Agpalo; to study recent developments in political science in Europe and the United States; $3,000;

Study of utilization patterns in rural health units by Mrs. Amelia Mangay-Maglacas, Institute of Hygiene; $2,100;

Library materials in the field of philosophy; $500;

SUDAN

UNIVERSITY OF KHARTOUM:

Rockefeller Foundation International Program in University Development; visiting faculty requested by the University of Khartoum; *see International, above;*

Dr. Bessie McNiel, Des Moines, Iowa; visiting professor and head of the Department of Home Economics;

Toward the program of the Sudan Unit; Sudanese £3,000 (about $8,760);

Language research project under the direction of Professor M. Macmillan of the Department of English; Sudanese £2,920 (about $8,525) for a three-year period;

A. R. A. Agib; travel to housing research centers in the United States, Great Britain, and Europe; $4,500;

Dr. Hussein El Sayed Osman; to visit centers of research in animal production and genetics, in the United States and Sweden; $3,850;

Mohamed El Nasri; travel to preventive medicine and veterinary public health centers in Lebanon, Europe, and the United States; $3,750;

Professor Syed Ahmad; to visit economics studies centers in the United States; $3,600;

Dr. Abdel Hamid Osman; to visit animal husbandry centers in Europe and Egypt; $3,175;

Dr. Ali E. Kambal; travel to plant breeding centers in Europe and Ethiopia; $3,000;

Dr. Ali M. Kheir; to visit chemistry departments in the United States; $2,920;

Dr. Leonard L. Morris, University of California, Davis; to serve as visiting professor in the Department of Horticulture; $2,900;

Professor Mekki Shibeika; research in Great Britain on the history of the Nile valley; $2,900;

Dr. Harry H. Laidlaw, University of California, Davis; to visit the apicultural teaching and research programs of the University; $2,620;

Dr. Ali Ahmed Suliman; travel to the United States in connection with research on public finance; $2,550;

Dr. Daoud Mustafa; to observe developments in medical education in the United States; $2,545;

Dr. J. L. Cloudsley-Thompson; to visit centers of desert research in the United States; $900;

TANZANIA

ROCKEFELLER FOUNDATION International Program in University Development: East African program; *see International, above*;

UNIVERSITY COLLEGE, Dar es Salaam (University of East Africa—*see also Kenya and Uganda*):

Research in economics; 161,300 East African shillings (about $23,390);

To enable Dr. K. E. Svendsen to serve as visiting research professor in the Economic Research Bureau; 152,885 East African shillings (about $21,560) through July, 1968;

Research by John Allen in Swahili literature; 93,133 East African shillings (about $13,135);

Study visits to Makerere University College and the University College, Nairobi, by staff members; 79,000 East African shillings (about $11,300);

Developmental research program in geography; $10,750;

To enable Miss Catherine Hoskyns to serve as visiting lecturer in the Institute of Public Administration; 41,360 East African shillings (about $6,000);

Dr. Herbert Shore, University of Denver, Colorado; to serve as visiting consultant in drama; $3,450;

THAILAND

INSTITUTIONS IN BANGKOK:

Rockefeller Foundation International Program in University Development; visiting faculty requested by universities in Bangkok; *see International, above*;

Dr. H. Peter Gray, Wayne State University, Detroit, Michigan; visiting professor in the Faculty of Economics, Thammasat University;

Dr. Donald Hindley, Brandeis University, Waltham, Massachusetts; visiting scholar in political science at Chulalongkorn and Thammasat Universities;

Agricultural experiment station development in Thailand; $100,000 for an 18-month period;

Dr. Moody E. Prior, Northwestern University, Evanston, Illinois; to serve as an adviser on the development of graduate education in Thailand; $16,600;

Thammasat University

University of California, Berkeley; research on Thai intellectual life, while serving as visiting professor in the Faculty of Liberal Arts, by Professor Herbert P. Phillips; $5,000;

University of Medical Sciences

Development of the Faculty of Medical Sciences; $250,000;

Equipment for the Faculty of Medical Sciences; $250,000;

To enable Dr. Anek Singhakowint to serve as laboratory director at the Faculty of Medical Sciences; $16,750 through July, 1971;

Graduate scholarships in the Faculty of Medical Sciences under the direction of Dr. David Schafer; $15,000;

Mrs. Sanguansook Chantawongse, Siriraj Hospital; to observe recent developments in nursing in the United States; $3,700;

To enable Dr. Narong Chomchalow, Northern Illinois University, De Kalb, to return to Bangkok to serve in the Department of Biology; $1,650;

Mrs. Duanpen Chatikanond; to visit selected university schools of nursing in the United States; $1,125;

ROCKEFELLER FOUNDATION International Program in University Development: Thai program; *see International, above;*

UGANDA

ROCKEFELLER FOUNDATION International Program in University Development: East African program; *see International, above;*

UNIVERSITY OF EAST AFRICA, Kampala *(see also Kenya and Tanzania)*:

Faculty development in its three constituent colleges; 476,863 East African shillings (about $68,190);

Appointment of a liaison officer; 170,100 East African shillings (about $24,325) for an 18-month period;

Columbia University, New York; research, by Professor L. Gray Cowan, on educational administration at the community level in Kenya in cooperation with the three constituent colleges; $13,800 through January, 1968;

University of California, Davis; to enable Dunstan Ireri to complete advanced training in agricultural economics; $4,975;

Support of the work of the Councils for Agricultural, Medical, and Veterinary Education, the Social Science Research Council, and other academic groups; 30,000 East African shillings (about $4,230);

Dr. Rupert Emerson, Harvard University, Cambridge, Massachusetts; to lecture in the departments of political science at the three constituent colleges; $3,100;

Lawi Odero Andrew, Wye College, University of London, England; research in agricultural economics in East Africa; $900;

MAKERERE UNIVERSITY COLLEGE, University of East Africa, Kampala:

Rockefeller Foundation International Program in University Development; visiting faculty requested by Makerere University College; *see International, above;*

Professor Locksley G. E. Edmondson, University of Waterloo, Ontario, Canada; visiting lecturer in international relations;

Teaching and research programs in the Faculty of Agriculture; 730,720 East African shillings (about $104,000);

Support of its Master of Arts program in African studies; 627,414 East African shillings (about $89,715);

Political science research program in the East African Institute of Social Research; 230,000 East African shillings (about $32,890);

Development of the Kasangati health center; $25,800;

To enable Nelson Kasfir, Harvard University, to serve as visiting lecturer in the Department of Political Science and Public Administration; $10,000;

Graduate teaching assistants in the Faculty of Social Sciences; 60,000 East African shillings (about $8,580);

To enable Dr. Lawrence Ekpebu, University of Ibadan, Nigeria, to serve as visiting lecturer in the Department of Political Science and Public Administration; $2,500;

UNITED KINGDOM

UNIVERSITY OF SUSSEX, England: visiting faculty appointments in Africa, Asia, and Latin America, to be administered by its Overseas Relationships Committee; $150,000 through June, 1971;

UNITED STATES

PRINCETON UNIVERSITY, New Jersey: political science research on the Sudan by Peter K. Bechtold; $4,500;

UNIVERSITY OF DENVER, Colorado: visiting faculty appointments in Africa, Asia, and Latin America, to be administered by its Graduate School of International Studies; $120,000 through June, 1971;

UNIVERSITY OF TEXAS, Austin: research, under the direction of Dr. John P. Harrison, on the Spanish American university in the twentieth century; $4,500.

UNITED STATES

ALBARWILD THEATRE ARTS, New York: playwrights' training at its Playwrights Unit and production of new plays and revivals of American classics at the Cherry Lane Theatre; $197,500 for a three-year period;

AMERICAN DANCE THEATER, New York: to study the problems involved in establishing a permanent repertory company for contemporary dance; $1,000;

AMERICAN WIND SYMPHONY ORCHESTRA, Pittsburgh, Pennsylvania: services of a professional administrator; $15,000;

BRUCE BAILLIE, Berkeley, California: film making in the United States and abroad; $11,750 for a two-year period;

BALLET THEATRE FOUNDATION, New York: toward administrative costs of the American Ballet Theatre; $25,000;

ROBERTS BLOSSOM, New York: to devote full time to creative work and research in mixed media—film, dance, music, and drama; $13,200 for a 24-month period;

STANLEY BRAKHAGE, Rollinsville, Colorado: to devote full time to film making; $14,400 over a 36-month period;

BRANDEIS UNIVERSITY, Waltham, Massachusetts: to enable the Opera Company of Boston to bring Schoenberg's *Moses and Aaron* to students at several institutions; $21,800;

BROOKLYN COLLEGE OF THE CITY UNIVERSITY OF NEW YORK: for use by the Advanced Institute for Development of American Repertory Theater, to enable delegates and observers at the Twelfth International Theater Institute Congress to visit theatre centers in the United States; $14,750;

GENE BRUCK, music critic and recording expert, New York: to prepare a study of problems connected with making and distributing recordings of modern American music; $9,200;

FREDERIC BURK FOUNDATION FOR EDUCATION, San Francisco, California: contemporary music series sponsored by San Francisco State College in cooperation with the San Francisco Symphony Orchestra; $5,000;

BUTLER UNIVERSITY, Indianapolis, Indiana: toward performances and seminars in local high schools by the Strolling Players; $1,750;

CALIFORNIA INSTITUTE OF TECHNOLOGY, Pasadena: study of the interrelationships of science, technology, and society; $200,000 through June, 1969;

CARNEGIE INSTITUTE OF TECHNOLOGY, Pittsburgh, Pennsylvania: advanced training program in theatre; $160,000;

CHELSEA THEATER CENTER, New York: program in support of new plays; $15,000;

CLEVELAND INSTITUTE OF MUSIC, Ohio: toward the establishment, in collaboration with Case Institute of Technology, of the University Circle Contemporary Chamber Music Ensemble; $15,500;

COLUMBIA UNIVERSITY, New York:

Toward establishment of the Group for Contemporary Music as a permanent component in the University's program in the arts; $24,900 through October, 1968;

Program of professional associates in theatre; $14,350;

Work in musical composition by Mario Davidovsky; $6,000;

TONY CONRAD, New York: creative work and research in film, music, and performance; $14,400 over a 36-month period;

MRS. ROSALYN DREXLER, playwright, New York: to devote full time to writing; $5,800;

EDUCATIONAL BROADCASTING CORPORATION, New York:

Program development; $250,000;

Production of a series of television programs based on rehearsals and performances of classical drama; $172,000 for a two-year period;

FEREIDOUN M. ESFANDIARY, New York: to devote full time to writing; $4,650;

PAUL FOSTER, playwright, New York: to devote full time to writing; $6,550;

FOUNDATION FOR REPERTORY THEATER OF RHODE ISLAND, Providence: performances for Rhode Island high school students by the Trinity Square Playhouse; $15,000;

FREE SOUTHERN THEATER, New Orleans, Louisiana: public performances and workshops in culturally deprived districts of the South; $77,340 through May, 1970;

FRANK GAGLIANO, playwright, New York: to devote full time to writing; $6,250;

MARTIN GOTTFRIED, drama critic, New York: to visit theatre centers in the United States, Canada, and Europe; $2,800;

MARTHA GRAHAM FOUNDATION FOR CONTEMPORARY DANCE, New York: preparation of a national tour by the Company; $25,000;

GRINNELL COLLEGE, Iowa: to establish the Lenox String Quartet in residence on the campus; $60,000 for a three-year period;

WYNN HANDMAN, American Place Theatre, New York: to visit theatre centers in Europe, North Africa, and Turkey; $2,550;

HARVARD UNIVERSITY, Cambridge, Massachusetts: support of experimental productions in musical theatre in collaboration with the Juilliard School of Music; $8,430;

INDIANA UNIVERSITY FOUNDATION, Bloomington: historical study, by Professor Kate Hevner Mueller, of the repertoires of major American symphony orchestras; $12,000 through April, 1968;

ITHACA FESTIVAL OF THE CLASSICS, New York: toward implementing the artistic program of the Ithaca Festival Theater and developing a program of cooperation with regional academic institutions; $320,000 through May, 1973;

JEROME MAX, playwright, New York: to devote full time to writing; $11,900 through January, 1968;

MILLS COLLEGE, Oakland, California: to establish the San Francisco Tape Music Center and the Mills Performing Group as a joint center for creative and performing arts; $200,000 through June, 1970;

NEW YORK PUBLIC LIBRARY: performances of new music by the Composers Forum, New York; $12,900 for a three-year period;

NEW YORK UNIVERSITY: professional training and creative work in theatre in its School of the Arts; $750,000 for a five-year period;

OAKLAND UNIVERSITY, Rochester, Michigan: participation by Latin American choral conductors in Robert Shaw's master classes at the Meadow Brook Music Festival; $7,500;

OPERA ASSOCIATION OF NEW MEXICO, Santa Fe: support of the Santa Fe Opera's apprentice program for singers; $15,000;

PITTSBURGH PLAYHOUSE SCHOOL OF THE THEATRE, Pennsylvania:

Preparation of theatre materials for distribution to other theatres and schools by the Vanguard Projects Division; $14,850 for an 18-month period;

Support of its program and development of cooperative activities with institutions of higher learning in Pittsburgh; $10,000;

PORTLAND STATE COLLEGE, Oregon: program of concerts and seminars by its Group for Contemporary Music at educational institutions; $15,000;

FREDERIK PRAUSNITZ, New England Conservatory of Music, Boston, Massachusetts: research on the interpretation of contemporary orchestral music; $3,600;

SHELDON RENAN, El Cerrito, California: to complete a study of American independent film-makers; $2,270;

KENNETH REXROTH, San Francisco, California: to observe traditional and experimental theatre in Europe and the Far East; $7,250;

RONALD B. RIBMAN, playwright, New York: to devote full time to writing; $7,050;

SARAH LAWRENCE COLLEGE, New York: establishment of the Aeolian Chamber Players as a group-in-residence to present concerts and workshops of contemporary music; $101,000 for a three-year period;

SARATOGA PERFORMING ARTS CENTER, Saratoga Springs, New York: toward the costs of establishing an East Coast branch of the Congress of Strings; $30,000 through September, 1969;

SHARON CREATIVE ARTS FOUNDATION, Connecticut: young people's summer workshop in the arts; $2,500;

SOUTHWESTERN AT MEMPHIS, Tennessee: summer youth theatre at the Front Street Theatre; $38,000 for a two-year period;

STETSON UNIVERSITY, DeLand, Florida: to enable public school music teachers to participate in the Florida Music Festival Institute; $7,000;

THEATER IN THE STREET, New York: outdoor dramatic productions in underprivileged neighborhoods; $69,540 through February, 1970;

THEATRE INCORPORATED, New York: training program for members of the Association of Producing Artists Repertory Company; $20,828;

ROBERT L. UNGER, playwright, Freeport, New York: to devote full time to writing; $7,750;

UNIVERSITY OF ALASKA, Fairbanks: participation of ten professional instructor-performers in the Alaska Festival of Music; $5,000;

UNIVERSITY OF BUFFALO FOUNDATION, New York: further development of the work of the Creative Associates in music, under the joint direction of Lukas Foss and Allen D. Sapp, Jr.; $150,000 through May, 1968;

UNIVERSITY OF CHICAGO, Illinois:

Toward costs of an experimental production at the University by a professional repertory theatre; $11,000;

Support of a conference on the liberal arts; $5,000;

UNIVERSITY OF CINCINNATI, Ohio: experimental program in theatre with the Playhouse in the Park; $23,200;

UNIVERSITY OF MINNESOTA, Minneapolis: workshop in performance for high school student musicians in cooperation with the Minneapolis Symphony Orchestra; $13,000;

UNIVERSITY OF PENNSYLVANIA, Philadelphia: toward consolidation of the Penn Contemporary Players as a performing ensemble; $23,500;

UNIVERSITY OF SOUTHERN CALIFORNIA, Los Angeles: toward the costs of establishing a West Coast branch of the Congress of Strings; $30,000 through September, 1969;

UNIVERSITY OF UTAH, Salt Lake City: toward the establishment of a professional dance repertory company; $370,000 through April, 1970;

STAN VANDERBEEK, Stony Point, New York: experimental work in cinema; $14,500 for a three-year period;

VILLANOVA UNIVERSITY, Pennsylvania: support of an advanced training program for playwrights within its Theatre Department; $34,200 for a three-year period;

LANFORD WILSON, playwright, New York: to devote full time to writing; $6,450;

YALE UNIVERSITY, New Haven, Connecticut: faculty appointments in the School of Drama; $390,000 for a five-year period.

University—Symphony Orchestra Program

The following universities or symphony orchestras have received grants enabling the orchestras to lengthen their regular seasons, spending the extra time on university campuses performing works primarily by young, lesser-known American composers:

ARIZONA STATE UNIVERSITY, Tempe: Phoenix Symphony Orchestra; $8,950;

DALLAS SYMPHONY ORCHESTRA, Texas, in association with Southern Methodist University, Baylor University, North Texas State University, Texas Christian University, and the University of Texas; $10,125;

GOUCHER COLLEGE, Baltimore, Maryland: Baltimore Symphony Orchestra; $19,500;

MUSICAL ARTS ASSOCIATION, Cleveland, Ohio: Cleveland Orchestra in association with local colleges; $30,000;

NEW ORLEANS PHILHARMONIC SYMPHONY ORCHESTRA, Louisiana, in association with the University of Southern Mississippi, Southeastern Louisiana College, and Millsaps College; $19,250;

UNIVERSITY OF CINCINNATI, Ohio: Cincinnati Symphony Orchestra; $18,185;

UNIVERSITY OF HOUSTON, Texas: Houston Symphony Orchestra; $19,000;

UNIVERSITY OF SOUTHERN CALIFORNIA, Los Angeles: Los Angeles Philharmonic Orchestra; $45,000 through June, 1968;

UNIVERSITY OF WASHINGTON, Seattle: Seattle Symphony Orchestra; $18,322.

Composers-in-residence Program

In support of a program enabling composers to spend a year in residence with major symphony orchestras, a total of $33,800 was appropriated. The following individual awards were made:

PHILHARMONIC-SYMPHONY SOCIETY OF NEW YORK: to enable David Amram to serve as composer-in-residence with the New York Philharmonic;

MUSICAL ARTS ASSOCIATION, Cleveland, Ohio: to enable Russell Smith to serve as composer-in-residence with the Cleveland Orchestra;

DALLAS SYMPHONY ORCHESTRA, Texas: to enable Thomas Wirtel to serve as composer-in-residence;

SEATTLE SYMPHONY ORCHESTRA, Washington: to enable Alan Hovhaness to serve as composer-in-residence.

Creative Writing and Literary Scholarship Program

In support of creative writing and literary scholarship, a total of $167,465 was appropriated. The following individual awards were made, in most cases administered by a college or university:

MISS ELIZABETH BISHOP, Rio de Janeiro, Brazil;

PHILIP BOOTH (Syracuse University, New York);

KENNETH BURKE (Bennington College, Vermont);

FRED CHAPPELL (University of North Carolina at Greensboro);

WILLIAM EASTLAKE (University of New Mexico, Albuquerque);

MISS JEAN GARRIGUE (Smith College, Northampton, Massachusetts);

HARVEY GROSS (University of California, Irvine);

THOMSON GUNN (University of California, Berkeley);

DONALD HARINGTON (Windham College, Putney, Vermont);

JOHN HAWKES (Brown University, Providence, Rhode Island);

ANTHONY HECHT (University of Rochester, New York);

HENRY HURT, JR. (University of Mississippi, University);

CLAUDE KOCH (La Salle College, Philadelphia, Pennsylvania);

CORMAC MCCARTHY (University of Tennessee, Knoxville);

WRIGHT MORRIS (San Francisco State College, California);

ROBERT PHARR (Columbia University, New York);

PHILIP ROTH (University of Pennsylvania, Philadelphia);

MRS. KATHARINE TOPKINS (Pomona College, Claremont, California);

MISS EUDORA WELTY (Millsaps College, Jackson, Mississippi);

DR. JOHN WILLIAMS (University of Denver, Colorado).

TOWARD EQUAL OPPORTUNITY FOR ALL

UNITED STATES

ATLANTA UNIVERSITY CENTER CORPORATION: appointment of an executive secretary and provision of supportive services; $130,000 through June, 1971;

BANK STREET COLLEGE OF EDUCATION, New York: establishment and operation of a Division of Field Action; $525,000 through December, 1972;

RUSSELL H. BARRETT, University of Mississippi, University: to visit universities and political science research centers in the United States; $4,500;

BROOKLYN COLLEGE OF THE CITY UNIVERSITY OF NEW YORK: completion of a college talent search project; $25,000 through August, 1968;

COLUMBIA UNIVERSITY, New York:

Leonard Jeffries, Jr.; to complete research in Africa on the politics of development in the Ivory Coast; $6,000;

Toward a study of the Urban Corps of the City of New York by the University's Bureau of Applied Social Research; $6,000;

DARTMOUTH COLLEGE, Hanover, New Hampshire: trial ABC programs in selected public high schools; $130,000 for a five-year period;

DUKE UNIVERSITY, Durham, North Carolina: program of student assistance designed to advance equality of college educational opportunity for graduates of Southern high schools; $250,000 through June, 1975;

EARLHAM COLLEGE, Richmond, Indiana: prefreshman and freshman reinforcement program; $25,000 through June, 1968;

EMORY UNIVERSITY, Georgia: program of student assistance designed to advance equality of college educational opportunity for graduates of Southern high schools; $250,000 through June, 1975;

FISK UNIVERSITY, Nashville, Tennessee:

Student assistance grants; $150,000 for a seven-year period;

Staff and recruitment costs; $100,000 for a three-year period;

Faculty appointments; $80,000;

Administrative surveys; $25,000;

Special summer assignments for faculty members; $20,000 through December, 1968;

HARVARD UNIVERSITY, Cambridge, Massachusetts: special summer law program for Negro college students from the South; $77,000;

HAVERFORD COLLEGE, Pennsylvania:

Post-baccalaureate fellowships for selected college graduates who plan to enter graduate schools to prepare for careers in college teaching; $450,000 through June, 1969;

Undergraduate teaching program in African studies in cooperation with Lincoln University, Pennsylvania; $15,000 for a two-year period;

HUNTER COLLEGE OF THE CITY UNIVERSITY OF NEW YORK: for use by the Hunter College High School toward the costs of a special program of compensatory education for disadvantaged students; $35,000 through June, 1968;

INDEPENDENT SCHOOLS TALENT SEARCH PROGRAM, Boston: ABC summer programs at cooperating colleges; $400,000 for a five-year period;

LINCOLN UNIVERSITY, Pennsylvania:

Program of student recruitment and financial assistance; $250,000 through June, 1972;

Educational reinforcement for selected entering students; $200,000 through June, 1969;

To appoint a writer-in-residence at Lincoln University and Haverford College, Pennsylvania; $15,000 for a two-year period;

OBERLIN COLLEGE, Ohio: experimental summer school program for disadvantaged high school students; $15,000 through December, 1968;

OCCIDENTAL COLLEGE, Los Angeles, California: program for the discovery and assistance of talented students from minority groups; $275,000 through December, 1975;

PHELPS-STOKES FUND, New York: toward support of its biennial publication, *Negro Facts and Figures*; $25,000;

PRINCETON UNIVERSITY, New Jersey:

Experimental summer school program for talented disadvantaged high school students; $68,000 through December, 1968;

Expansion of its library collection on the American Negro; $19,500 for a two-year period;

SOUTHERN EDUCATION FOUNDATION, Atlanta, Georgia: to enable Bruce N. Robinson to pursue doctoral studies in economics at the University of Oklahoma; $4,000;

SOUTHERN METHODIST UNIVERSITY, Dallas, Texas: research on production functions and income distribution in agriculture and industry by Dr. Finis Welch; $24,000 for a three-year period;

SOUTHERN REGIONAL COUNCIL, Atlanta, Georgia:

Support of its work in the South; $250,000 for a six-year period;

Toward the expenses of the White House Conference "To Fulfill These Rights"; $10,000;

TULANE UNIVERSITY OF LOUISIANA, New Orleans: program of student assistance designed to advance equality of college educational opportunity for graduates of Southern high schools; $250,000 through June, 1975;

UNIVERSITY OF CALIFORNIA, Riverside: toward a study of school desegregation in Riverside; $10,000;

UNIVERSITY OF TEXAS, Austin: to enable Benjamin Daise to pursue doctoral studies in philosophy; $5,000;

VANDERBILT UNIVERSITY, Nashville, Tennessee: program of student assistance designed to advance equality of college educational opportunity for graduates of Southern high schools; $250,000 through June, 1975;

WALDEN SCHOOL, Washington, D.C.: general support; $15,000;

WASHINGTON UNIVERSITY, St. Louis, Missouri: work-study career development program for financially handicapped high school graduates; $150,000 for a three-year period;

WESTERN RESERVE ACADEMY, Hudson, Ohio: summer program for boys from junior high schools in the Summit County-greater Akron area; $5,275;

WESTERN WASHINGTON STATE COLLEGE, Bellingham: summer program for disadvantaged junior high school students; $100,000 through June, 1968;

WOODROW WILSON NATIONAL FELLOWSHIP FOUNDATION, Princeton, New Jersey: support of its Teaching Internship Program; $600,000 through June, 1972;

YALE UNIVERSITY, New Haven, Connecticut: transitional year program for talented disadvantaged high school graduates; $225,000 through June, 1969.

ALLIED INTERESTS

MNS: Medical and Natural Sciences; AS: Agricultural Sciences; HSS: Humanities and Social Sciences; IP: Inter-Program

INTERNATIONAL

ROCKEFELLER FOUNDATION International Program in Virus Research:

Salaries, travel, and other expenses of Foundation field staff		$ 433,700
Virus laboratories		
Brazil	$ 62,650	
Colombia	72,275	
India	67,000	
United States	35,250	237,175
TOTAL—Appropriations made in 1966		$ 670,875 (MNS)

ROCKEFELLER FOUNDATION International Program in Field Research in Medical Sciences, Nutrition, and Population Problems:

Salaries, travel, and other expenses of Foundation field staff	$ 681,400
India	58,000
TOTAL—Appropriations made in 1966	$ 739,400 (MNS)

ROCKEFELLER FOUNDATION Inter-Program Centers:

Indian Program Center, New Delhi	$ 76,500
Villa Serbelloni Research and Conference Center	222,750
TOTAL—Appropriations made in 1966	$ 299,250 (IP)

ROCKEFELLER FOUNDATION unallocated contingency reserve for International Programs — $ 150,000

ARGENTINA

UNIVERSITY OF CUYO, Mendoza: support of its Faculty of Medical Sciences; $100,000 through August, 1968; (MNS)

BRAZIL

FOR PROJECTS IN GENETICS research and training at Brazilian institutions:

University of Rio Grande do Sul, Pôrto Alegre

Support of the Laboratory of Animal Genetics; $10,700; (MNS)

Support of the Laboratory of Molecular Genetics; Cr. 5,600,000 and $3,660 (about $6,740); (MNS)

University of São Paulo

Ribeirão Prêto

Research equipment for the Department of Genetics, and travel to Costa Rica by Dr. J. Paulin; $2,500; (MNS)

São Paulo

Research in the Laboratory of Animal Genetics; $7,000; (MNS)

Research in the Laboratory of Medical Genetics of the Faculty of Medicine; $4,800; (MNS)

Brazilian Society of Genetics, São Paulo

Research and training in genetics; $6,700; (MNS)

To enable delegates to participate in the International Symposium on Genetics in Piracicaba; $3,000; (MNS)

University of Minas Gerais, Belo Horizonte: genetics research in the Institute of Biology; $1,300; (MNS)

ROCKEFELLER FOUNDATION International Program in Virus Research: Belém Virus Laboratory; *see International, above;*

UNIVERSITY OF SAO PAULO: research by Dr. José Antunes Rodrigues, Faculty of Medicine, Ribeirão Prêto; $3,900; (MNS)

CHILE

CATHOLIC UNIVERSITY OF CHILE, Santiago (*now part of University Development, see page 145*):

Equipment for electron microscope studies under the direction of Dr. Carlos Doggenweiler, Faculty of Medicine; $7,000; (MNS)

Research in the Department of Neurophysiology, by Dr. Jaime Alvarez Marín; $5,000; (MNS)

Toward the costs of a transportable tent for its Teatro de Ensayo; $1,770; (HSS)

COUNCIL OF RECTORS OF CHILEAN UNIVERSITIES, Santiago: equipment, supplies, and basic reference works for its National Information and Documentation Center (CENID); $15,000; (IP)

UNIVERSITY OF CHILE, Santiago (*now part of University Development, see page 145*):

Research equipment for Dr. Smiljan Kukolj, Department of Renal and Electrolytic Physiology, School of Medicine; $7,750; (MNS)

Equipment and supplies for virus research by Dr. Romilio Espejo; $5,000; (MNS)

COLOMBIA

NATIONAL UNIVERSITY OF COLOMBIA, Bogotá: reorganization and modernization of its fiscal procedures; $23,000 for a two-year period; (AS)

UNIVERSITY OF VALLE, Cali:

Rockefeller Foundation International Program in Virus Research; virus studies at the University of Valle; *see International, above;*

Construction and equipment of a building for the Department of Preventive Medicine to house virologic and other research and training activities; $146,000 for a two-year period; (MNS)

Dr. Carlos Sanmartín; to visit laboratories in Europe and the United States and to attend a virology symposium in Czechoslovakia; $2,000; (MNS)

ETHIOPIA

DURI MOHAMMED, Haile Sellassie I University, Addis Ababa: research in Great Britain and the United States on foreign capital and economic development in Ethiopia; $2,280; (HSS)

INDIA

ALL INDIA INSTITUTE OF MEDICAL SCIENCES, New Delhi:

Dr. Harcharan Das Tandon; to visit pathology centers in the United Kingdom and the United States; $2,900; (MNS)

Dr. Sardari Lal Kalra; to visit virology centers in the Far East; $1,600; (MNS)

DIRECTORATE GENERAL OF HEALTH SERVICES, Government of India, New Delhi:

Miss P. Annamma Cherian; to visit nursing centers in North America; $4,135; (MNS)

Dr. Subhadra Anant Chitale; to visit the United States National Library of Medicine, Bethesda, Maryland, and library centers in Chicago and Rome, Italy; $3,300; (MNS)

INDIA INTERNATIONAL CENTRE, New Delhi: general support; $50,000 for a three-year period; (IP)

DR. RUTH M. MYERS, Christian Medical College, Vellore: to visit virus research centers in the United States and Southeast Asia, and to attend the Eleventh Pacific Science Congress in Tokyo, Japan; $1,700; (MNS)

ROCKEFELLER FOUNDATION International Program in Field Research in Medical Sciences, Nutrition, and Population Problems; *see International, above;*

ROCKEFELLER FOUNDATION International Program in Virus Research: Virus Research Centre, Poona; *see International, above;*

ROCKEFELLER FOUNDATION Inter-Program Center: Indian Program Center, New Delhi; *see International, above;*

UNIVERSITY OF DELHI:

Visiting faculty in humanities and social sciences requested by the University of Delhi; *see Rockefeller Foundation International Program in University Development, page 144;*

Dr. S. William Halperin, University of Chicago, Illinois; visiting professor of history; (HSS)

Professor Keiichiro Nakagawa, University of Tokyo, Japan; visiting professor of economic history; (HSS)

Equipment for the Department of Economics and Commerce and its library; $6,750; (HSS)

Herbert Haslam, visiting reader, Department of Music; additional support; $4,533; (HSS)

Professor R. K. Das Gupta; to visit language and comparative literature centers in Asia, the United States, and England; $3,500; (HSS)

ISRAEL

HEBREW UNIVERSITY OF JERUSALEM: study of Israel's relations with the great powers by Mordechai Gazit, Ministry of Foreign Affairs, Jerusalem; $14,500 for a two-year period; (HSS)

ITALY

VILLA SERBELLONI, Bellagio: Research and Conference Center of The Rockefeller Foundation; *see International, above;*

MEXICO

NATIONAL INSTITUTE OF ANTHROPOLOGY AND HISTORY, Mexico City: to enable Dr. Isabel Kelly to complete a study of the chronology of prehistoric tombs in the State of Colima; $2,500; (IP)

NIGERIA

AHMADU BELLO UNIVERSITY, Zaria: to enable Arabic language students at Abdullahi Bayero College, Kano, to study in Khartoum, Sudan; Nigerian £1,000 (about $3,000); (HSS)

UNIVERSITY OF IBADAN:

Arbovirus research program in the Faculty of Medicine; £27,100 (about $77,235); (MNS)

Field operations under the direction of Dr. Ottis R. Causey in connection with the arbovirus research program at the University of Ibadan; $3,000 for a three-year period; (MNS)

PANAMA

DR. SUNTHORN SRIHONGSE, Gorgas Memorial Laboratory, Balboa Heights, Canal Zone: to visit virus laboratories in South America; $1,600; (MNS)

SUDAN

INSTITUTE OF DEVELOPMENT STUDIES, University of Sussex, Brighton, England: research on agricultural economics in the Sudan by D. John Shaw; £4,420 (about $12,475); (HSS)

SWITZERLAND

UNIVERSITY OF BASEL: research and writing by Hans Saner on the political thought of Immanuel Kant; $10,000 for a two-year period; (HSS)

UGANDA

DR. GEORGE WILLIAM KAFUKO, East African Virus Research Institute, Entebbe: to visit arthropod-borne virus research laboratories in the United States, Jamaica, Trinidad, and Brazil; $4,400; (MNS)

UNITED KINGDOM

PROFESSOR W. H. MORRIS-JONES, Institute of Commonwealth Studies, University of London: to undertake research in India on the internal organization of the Congress Party and to serve as adviser to the Faculty of Social Sciences, University of Delhi; $3,740; (HSS)

UNITED STATES

AMERICAN INSTITUTE OF BIOLOGICAL SCIENCES, Washington, D.C.: development of its program; $30,000; (MNS)

BROWN UNIVERSITY, Providence, Rhode Island: English language teaching program in the United Arab Republic; $23,500; (HSS)

CALIFORNIA STATE DEPARTMENT OF PUBLIC HEALTH, Berkeley:

Dr. Edwin H. Lennette; to visit virus laboratories in Southeast Asia, and to attend the meetings of the Committee of the United States—Japan Cooperative Medical Science Program, in Tokyo, Japan; $2,457; (MNS)

Dr. Richard W. Emmons; to participate in the Eleventh Pacific Science Congress in Tokyo, Japan, and to visit virus laboratories in Hawaii; $1,420; (MNS)

CARNEGIE ENDOWMENT FOR INTERNATIONAL PEACE: training programs for young foreign service officers from the new nations; $500,000 through September, 1970; (HSS)

COLUMBIA UNIVERSITY, New York:

Studies in environmental pollution by the School of Engineering and Applied Science for a survey by the New York City Council on Science and Technology; $25,000; (MNS)

Study of Indonesian economic development by Bian Tie Khouw; $8,850; (HSS)

To enable O. Edmund Clubb to continue his study of Sino-Russian relations; $3,700; (HSS)

CORNELL UNIVERSITY, Ithaca, New York:

Planning conference on international education; $25,000; (IP)

To enable Dr. Clinton Rossiter to undertake an analytical study of the development of the United States from 1776 to 1860; $13,750 for a one-year period beginning approximately June 1, 1967; (HSS)

LUIGI EINAUDI, Cambridge, Massachusetts: to complete work on Marxism in Latin America during the decade following World War II; $4,850; (HSS)

HARVARD UNIVERSITY, Cambridge, Massachusetts:

Toward the costs of a five-year program of fellowships in the Institute of Politics of its Graduate School of Public Administration; $200,000; (HSS)

To provide the services of Dr. Osler L. Peterson to the Department of Preventive Medicine of its Medical School; $100,000 for a five-year period; (MNS)

INDIANA UNIVERSITY FOUNDATION, Bloomington: study of the Nazi economy from 1937 to 1942 by Dr. Arthur Schweitzer, Indiana University; $13,000; (HSS)

INSTITUTE OF INTERNATIONAL EDUCATION, New York: support of its programs of counseling and information services to facilitate international student exchange; $300,000 through June, 1972; (IP)

NATIONAL ACADEMY OF SCIENCES, Washington, D.C.: to enable Dr. Juan Salcedo, Jr., Philippine National Science Development Board, to attend a workshop in the United States; $1,120; (IP)

NEW YORK STATE HISTORICAL ASSOCIATION, Cooperstown: preparation of a book on the Secretaries General of the League of Nations and the United Nations by Raymond B. Fosdick; $3,000 through January 24, 1969; (IP)

DR. ROBERT GRIFFITH PAGE, University of Chicago, Illinois: to attend the Third World Congress on Medical Education in New Delhi, India, and to visit medical schools in Europe and the Middle and Far East; $2,600; (MNS)

PAN AMERICAN DEVELOPMENT FOUNDATION, Washington, D.C.:

Distribution of equipment to technical institutions in Peru and Chile; $15,000; (IP)

Seminars for Latin Americans on conservation of natural resources; $15,000 for a three-year period; (AS)

PRINCETON UNIVERSITY, New Jersey: to enable Dr. Kenneth L. Maxwell to continue as a visiting scholar at the Woodrow Wilson School of Public and International Affairs; $5,000; (HSS)

REPRODUCTION AND DISTRIBUTION OF A THESIS BY MISS INES DURANA, University of Valle, Cali, Colombia, entitled *Selected Library References in Spanish for Basic Nursing Programs in Latin America*; $3,000; (MNS)

ROCKEFELLER FOUNDATION International Program in Virus Research: virus studies at Berkeley, California; *see International, above;*

SOLAR ENERGY SOCIETY, Arizona State University, Tempe: support of its library, travel program, and quarterly publication; $20,000 for a two-year period; (AS)

SYRACUSE UNIVERSITY, New York: study by Dr. Gerard J. Mangone of United States technical assistance provided through United Nations agencies; $10,000; (HSS)

UNIVERSITY OF CALIFORNIA:

Berkeley

Dr. Wendell M. Stanley; to lecture and to observe virus centers in Japan; $3,000; (MNS)

Dr. William C. Reeves; to participate in the Eleventh Pacific Science Congress in Tokyo, Japan, and to visit virus laboratories and field areas in Japan, Alaska, and Hawaii; $1,740; (MNS)

Los Angeles

To enable Dr. E. Bradford Burns to undertake a study of the development and patterns of Brazil's foreign policy; $11,501; (HSS)

UNIVERSITY OF PENNSYLVANIA, Philadelphia: toward completion of studies by Dr. Erwin A. Gutkind of the School of Fine Arts on improvement in the design of the urban environment; $35,000 for a three-year period; (HSS)

WELLESLEY COLLEGE, Massachusetts: to enable Dr. Philip M. Phibbs to conduct a study of the instruments of Indian diplomacy; $17,000 for a 14-month period; (HSS)

WESTERN RESERVE UNIVERSITY, Cleveland, Ohio: to enable Dr. H. Pierre Secher to undertake a comparative study of the ideological dimensions of modern civil-military relations in West Germany and in Israel; $8,700 for a 16-month period; (HSS)

YALE UNIVERSITY, New Haven, Connecticut:

Toward the costs of Rockefeller Foundation participation in the Yale Arbovirus Research Unit in the Department of Epidemiology and Public Health of the School of Medicine; $306,000; (MNS)

To enable Eugene V. Rostow, Sterling Professor of Law and Public Affairs, to complete his research and writing on constitutional order and change; $11,500 for a one-year period beginning approximately February, 1967; (HSS)

Training program in virology for medical students; $5,000 through April, 1968; (MNS)

Dr. Scott B. Halstead, School of Medicine; to visit virus laboratories in India; $490; (MNS)

WEST INDIES

UNIVERSITY OF THE WEST INDIES, Mona, Jamaica:

Support of the Department of Social and Preventive Medicine in its Faculty of Medicine; $75,000 for a five-year period; (MNS)

To enable Professor Fred Warner Neal, Claremont Graduate School and University Center, California, to serve as visiting professor in international relations; $25,300; (HSS)

To enable Dr. Maurice Waters, Wayne State University, Detroit, Michigan, to serve as visiting professor in international relations; $24,300; (HSS)

Air conditioning system at the Trinidad Regional Virus Laboratory; $905. (MNS)

FELLOWS AND SCHOLARS 1966

FELLOWS AND SCHOLARS

F: Fellow; S: Scholar; AS: Agricultural Sciences; ARTS: Arts; HSS: Humanities and Social Sciences; MNS: Medical and Natural Sciences

ARGENTINA

OSCAR SAMUEL MALAMUD Ing.Agr., University of Buenos Aires, 1964. Plant Science—Pathology. Appointed from National Institute of Agricultural Technology. Place of study: U.S.A. S-AS

BRAZIL

AIR MIGUEL COLOMBO BARRETTO Dipl. (Pharmaceutics), University of Bahia, 1954. Parasitology—Schistosomiasis. Appointed from University of Bahia. Place of study: U.S.A. S-MNS

ANIVALDO PEDRO COBRA M.S., Texas A & M University, 1958. Agricultural Engineering. Appointed from University of São Paulo. Piracicaba. Place of study: U.S.A. S-AS

ROMAIN ROLLAND GOLGHER M.D., Catholic University of Minas Gerais, 1961. Virology. Appointed from Catholic University of Minas Gerais. Place of study: U.S.A. F-MNS

WALDEMAR MOURA FILHO Eng.Agr., Rural University of the State of Minas Gerais, 1955. Soil Science. Appointed from Rural University of the State of Minas Gerais. Place of study: U.S.A. S-AS

RONALDO REIS D.V.M., University of Minas Gerais, 1959. Animal Science—Pathology. Appointed from University of Minas Gerais. Place of study: U.S.A. S-AS

CHILE

JOSE F. ARAOS Ing.Agr., Catholic University of Chile, 1961. Soil Science—Fertility and Management. Appointed from Agricultural Research Institute. Place of study: U.S.A. S-AS

PATRICIO AZOCAR CABRERA Ing.Agr., University of Chile, Santiago, 1959. Plant Science—Pastures and Forages. Appointed from Agricultural Research Institute. Place of study: U.S.A. S-AS

SERGIO BOISIER ETCHEVERRY Comm.Eng., University of Chile, Valparaiso, 1964. Economics. Appointed from University of Chile. Place of study: U.S.A. S-HSS

JUAN CARLOS COLLARTE R. Ing.Agr., University of Chile, Santiago, 1964. Agricultural Economics. Appointed from University of Chile. Place of study: England. S-HSS

GUSTAVO F. CUBILLOS M.S., Purdue University, 1962. Animal Science—Nutrition and Physiology. Appointed from Agricultural Research Institute. Place of study: U.S.A. S-AS

SERGIO DE LA CUADRA FABRES Comm.Eng., Catholic University of Chile, 1966. Economics. Appointed from Catholic University of Chile. Place of study: U.S.A. S-HSS

RICARDO FFRENCH-DAVIS M. M.A., University of Chicago, 1961. Economics. Appointed from Catholic University of Chile. Place of study: U.S.A. S-HSS

JUAN M. GASTO CODERCH M.S., Colorado State University, 1963. Plant Science—Agronomy. Appointed from University of Chile, Santiago. Place of study: U.S.A. S-AS

DOMINIQUE HACHETTE F. M.A., University of Chicago, 1961. Economics. Appointed from Catholic University of Chile. Place of study: U.S.A. S-HSS

ALDO L. NORERO M.S., Oregon State University, 1961. Soil Science—Fertility. Appointed from Catholic University of Chile. Place of study: U.S.A. S-AS

PATRICIO PARODI PINEDO M.S., Purdue University, 1963. Plant Science—Genetics and Breeding. Appointed from Agricultural Research Institute. Place of study: U.S.A. S-AS

ERNESTO SCHIEFELBEIN F. Comm.Eng., University of Chile, Santiago, 1960. Education. Appointed from University of Chile. Place of study: U.S.A. S-HSS

JORGE TAPIA VIDELA Bachelor (Public Administration), University of Chile, Santiago, 1960. Political Science. Appointed from University of Chile. Place of study: U.S.A. S-HSS

JORGE TOCORNAL CORREA M.D., Catholic University of Chile, 1960. Surgery. Appointed from University of Chile, Santiago. Place of study: U.S.A. F-MNS

SERGIO OSVALDO TRIVELLI GRANDAL Ing.Agr., Catholic University of Chile, 1960. Plant Science—Agronomy. Appointed from Catholic University of Chile. Place of study: U.S.A. S-AS

BORIS YOPO PAIVA M.S., Cornell University, 1961. Education—School and College Administration. Appointed from Catholic University of Chile. Place of study: U.S.A. S-AS

COLOMBIA

ALFONSO BASTIDAS COLLAZOS B.A., Free University, Bogotá, 1964. Linguistics. Appointed from University of Valle. Place of study: U.S.A. S-HSS

RALPH ERNEST COTTERILL B.S.A., University of Toronto, Canada, 1963. Economics. Appointed to join faculty of University of Valle. Place of study: U.S.A. S-HSS

HECTOR JOSE GOMEZ C. M.D., National University of Colombia, Bogotá, 1963. Pharmacology. Appointed from University of Valle. Place of study: U.S.A. F-MNS

HERNANDO GUTIERREZ DE LA ROCHE M.S., University of Georgia, 1964. Animal Science—Nutrition and Physiology. Appointed from Colombian Institute of Agriculture. Place of study: U.S.A. S-AS

DOUGLAS DARWIN HEDLEY B.S.A., University of Guelph, Canada, 1965. Economics. Appointed to join faculty of University of Valle. Place of study: U.S.A. S-HSS

RODRIGO LORA SILVA Chem.Eng., Industrial University of Santander, 1954. Soil Science. Appointed from Colombian Institute of Agriculture. Place of study: U.S.A. S-AS

ENRIQUE LOW MURTRA M.S., Southern Illinois University, 1964. Economics. Appointed from University of Valle. Place of study: U.S.A. S-HSS

JOSE GUILLERMO MATEUS VALLES M.S., University of Wisconsin, 1963. Animal Science—Parasitology. Appointed from Colombian Institute of Agriculture. Place of study: U.S.A. S-AS

JAMES K. MCKENZIE B.S.A., University of Toronto, Canada, 1962. Agricultural Economics. Appointed to join faculty of University of Valle. Place of study: U.S.A. S-HSS

DIEGO MEJIA GOMEZ M.D., University of Valle, 1963. Internal Medicine. Appointed from University of Valle. Place of study: U.S.A. F-MNS

SAMUEL PALACIOS RIVERA Lic., Pedagogical and Technological University of Colombia, 1956. Linguistics. Appointed from University of Valle. Place of study: U.S.A. S-HSS

ALFREDO ROA MEJIA M.A., University of Florida, 1964. Economics. Appointed from University of Valle. Place of study: U.S.A. S-HSS

GUSTAVO ERNESTO SANCHEZ A. B.S., University of Valle, 1966. Chemistry. Appointed from University of Valle. Place of study: U.S.A. S-MNS

HUGO ALFONSO TORRES M.Sc., Ohio State University, 1964. Economics. Appointed from University of Valle. Place of study: U.S.A. S-HSS

MANUEL JOSE TORRES ANJEL D.V.M.&Z., National University of Colombia, Bogotá, 1964. Food Science. Appointed from National University of Colombia. Place of study: U.S.A. S-AS

CONGO

YVON BONGOY Lic. (Economics), Lovanium University, 1964. Economics. Appointed from Lovanium University. Place of study: U.S.A. S-HSS

COSTA RICA

JOSE HUMBERTO ECHEVERRIA B.S., University of Costa Rica, 1962. Animal Science—Nutrition and Physiology. Appointed from University of Costa Rica. Place of study: U.S.A. S-AS

ECUADOR

CESAR OSWALDO ALTAMIRANO Dipl. (Audio-Visual Aids), Brazil, 1958. Mass Media—Film. Appointed from National Institute of Agricultural Research. Place of study: Mexico. S-AS

MARIO LENIN LALAMA HIDALGO Ing.Agr., Central University, 1964. Plant Science—Genetics and Breeding. Appointed from National Institute of Agricultural Research. Place of study: Mexico. S-AS

GALO EDMUNDO ROMERO ROMO M.S., Iowa State University, 1964. Plant Science—Genetics and Breeding. Appointed from National Institute of Agricultural Research. Place of study: U.S.A. S-AS

GUATEMALA

LUIS FELIPE ROSALES P. D.V.M., University of San Carlos, 1962. Veterinary Science. Appointed from University of San Carlos. Place of study: U.S.A. S-AS

HONDURAS

WILLY LUCIO VILLENA DUCHEN M.Sc., University of Nebraska, 1963. Plant Science—Genetics and Breeding. Appointed from DESARRURAL, San Pedro Sula. Place of study: U.S.A. S-AS

INDIA

MADAN LAL BHATIA D.M., All India Institute of Medical Sciences, 1963. Cardiology. Appointed from All India Institute of Medical Sciences. Place of study: U.S.A. F-MNS

NIRMAL KUMAR CHAKRABARTI Ph.D., State Agricultural Research Institute, Calcutta, 1956. Plant Science—Pathology. Appointed from Central Rice Research Institute. Place of study: U.S.A. F-AS

BIPAN CHANDRA Ph.D., University of Delhi, 1963. History. Appointed from University of Delhi. Place of study: U.S.A. F-HSS

KHIROD CHANDRA DAS M.S., University of Missouri, 1963. Agricultural Engineering. Appointed from Orissa University of Agriculture and Technology. Place of study: U.S.A. S-AS

SHAMBHU NATH DUBEY M.S., Indian Agricultural Research Institute, New Delhi, 1955. Plant Science. Appointed from Jawaharlal Nehru Agricultural University. Place of study: U.S.A. S-AS

OM PRAKASH GHAI M.D., Mahatma Gandhi Memorial Medical College, 1958. Pediatrics. Appointed from All India Institute of Medical Sciences. Place of study: U.S.A. F-MNS

KAMAL RAJ LODHA M.Sc., Ohio State University, 1960. Animal Science—Parasitology. Appointed from University of Udaipur. Place of study: U.S.A. S-AS

DALIP SINGH MALIK M.S., University of Illinois, 1960. Plant Science—Agronomy. Appointed from Jawaharlal Nehru Agricultural University. Place of study: U.S.A. S-AS

AVTAR SINGH MINHAS M.S., Punjab Agricultural College, Lyallpur, 1941. Plant Science —Genetics and Breeding. Appointed from Punjab Agricultural University, Ludhiana. Place of study: U.S.A. S-AS

KHALEEQ AHMAD NAQVI Ph.D., University of Lucknow, 1953. Economics. Appointed from University of Delhi. Places of study: France, England, U.S.A. F-HSS

SHRIRANG PARSHURAM NETKE M.S., University of Illinois, 1959. Animal Science—Nutrition and Physiology. Appointed from Jawaharlal Nehru Agricultural University. Place of study: U.S.A. S-AS

K. C. SHARMA Ph.D., Agra University, 1963. Soil Science—Plant Nutrition. Appointed from Uttar Pradesh Agricultural University. Place of study: U.S.A. F-AS

RADHEY MOHAN SHARMA M.S., Central Veterinary Laboratory, Weybridge, England, 1956. Veterinary Science. Appointed from Punjab Agricultural University, Hissar. Place of study: U.S.A. S-AS

HARDEV SINGH Ph.D., University of Delhi, 1960. Plant Science—Pathology. Appointed from University of Delhi. Place of study: U.S.A. F-AS

CHABOLU SREERAMULU M.Sc., Andhra University, 1963. Plant Science—Genetics and Breeding. Appointed from Government of Andhra Pradesh. Place of study: U.S.A. S-AS

ISRAEL

DAN YARON Ph.D., Iowa State University, 1960. Economics. Appointed from Hebrew University of Jerusalem. Place of study: U.S.A. F-AS

KENYA

SHEM ARUNGU OLENDE B.Eng.Sc., University of Western Ontario, Canada, 1965. Engineering. Appointed from University College, Nairobi. Place of study: England. S-MNS

DAN MAXWELL ETHERINGTON M.S., Cornell University, 1962. Economics. Appointed from University College, Nairobi. Place of study: U.S.A. S-HSS

HIRAM KARANI B.Sc., Makerere University College, Uganda, 1964. Economics. Appointed from University College, Nairobi. Place of study: U.S.A. S-HSS

CHRISTOPHER NGARUA KARUE B.Sc., Makerere University College, Uganda, 1965. Animal Science—Nutrition and Physiology. Appointed from East African Agriculture and Forestry Research Organization. Place of study: U.S.A. S-AS

GODFREY MURIUKI B.A., Makerere University College, Uganda, 1964. History. Appointed from University College, Nairobi. Place of study: England. S-HSS

BENJAMIN WAMBUA NGUNDO B.S., Hillsdale College, 1964. Plant Science—Nematology. Appointed from East African Agriculture and Forestry Research Organization. Place of study: U.S.A. S-AS

PIUS ALOIS OKELO B.Eng., University of Sheffield, England, 1965. Electrical Engineering. Appointed from University College, Nairobi. Place of study: England. S-MNS

MEXICO

EDUARDO-PABLO CORREA-GIRON D.V.M., National University of Mexico, 1966. Animal Science—Virology. Appointed from National Center for Livestock Research. Place of study: U.S.A. S-AS

MARIA DEL ROSARIO GREEN Lic., National University of Mexico, 1963. Economics. Appointed from Colegio de México. Place of study: U.S.A. S-HSS

FIDEL MARQUEZ SANCHEZ M.S., Iowa State University, 1964. Plant Science—Genetics and Breeding. Appointed from National School of Agriculture, Chapingo. Place of study: U.S.A. S-AS

ERNESTO MORENO MARTINEZ M.S., National School of Agriculture, Chapingo, 1964. Plant Science—Pathology. Appointed from National Institute of Agricultural Research. Place of study: U.S.A. S-AS

BOSCO ANTONIO MURO GONZALEZ M.A., Colegio de México, 1966. Economics. Appointed from Colegio de México. Place of study: U.S.A. S-HSS

GELACIO PEREZ UGALDE M.S., University of Wisconsin, Madison, 1962. Plant Science—Genetics and Breeding. Appointed from National Institute of Agricultural Research. Place of study: U.S.A. S-AS

VICTOR MANUEL SORIA-MURILLO Certificate (Business), Stanford University, 1966. Economics. Appointed from University of Guadalajara. Place of study: U.S.A. S-HSS

ENRIQUEZ SUAREZ GAONA M.A., Colegio de México, 1965. Sociology. Appointed from Colegio de México. Place of study: U.S.A. S-HSS

ARTEMIO TIJERINA MENCHACA M.S., National School of Agriculture, Chapingo, 1963. Plant Science—Pathology. Appointed from International Maize and Wheat Improvement Center. Place of study: U.S.A. S-AS

GILBERTO VALENZUELA ROBLES B.S., University of Sonora, 1962. Soil Science. Appointed from La Campana Experimental Ranch, Chihuahua. Place of study: U.S.A. S-AS

NATIONAL REPUBLIC OF CHINA

SHIH-TIEN HSU M.S., University of the Philippines, College, 1966. Plant Science—Pathology. Appointed from Chung-Hsing University. Place of study: U.S.A. S-AS

BANG-FANG WU M.S., University of the Philippines, College, 1966. Plant Science—Agronomy. Appointed from National Taiwan University. Place of study: U.S.A. S-AS

NIGERIA

MUSA OLADIPUPO AJILOGBA ABDUL B.A., University of London, England, 1964. Islamic Studies. Appointed from University of Ibadan. Place of study: Canada. S-HSS

ALICE OLAWUMI ADEYEMI S.C.M., Lewisham Hospital, England, 1954. Psychiatric Nursing. Appointed from University of Ibadan. Place of study: U.S.A. S-MNS

FELIX NATAMA AKHIONBARE B.Sc., University of Ibadan, 1965. Animal Science. Appointed from University of Ibadan. Place of study: U.S.A. S-AS

RACHEL OLUFUNMILAYO AKINDELE R.M.N., Hollymoor Hospital, England, 1964. Social Study. Appointed from University of Ibadan. Place of study: Scotland. S-MNS

EMMANUEL ADESANYA DOSUMU S.R.M.N., Netherne Hospital, England, 1961. Psychiatric Nursing. Appointed from University of Ibadan. Place of study: U.S.A. S-MNS

JOHN CHUKUNELU EBIE M.D., University of Ibadan, 1964. Psychiatry—Neurology. Appointed from University of Ibadan. Place of study: Scotland. F-MNS

MICHAEL EHIMEN EDO M.I.A., Columbia University, 1966. Economics. Appointed from University of Ibadan. Place of study: U.S.A. S-HSS

THEODORE IDIBIYE FRANCIS D.T.M.&H., Liverpool School of Tropical Medicine, England, 1962. Medicine. Appointed from University of Ibadan. Place of study: U.S.A. F-MNS

OLUFEMI OYINLOLA KUJORE B.N., McGill University, Canada, 1962. Administration of Nursing Education. Appointed from University of Ibadan. Place of study: U.S.A. S-MNS

ALEXANDER OLUFEMI LEWIS Dipl. (Economic Development), Victoria University of Manchester, England, 1961. Economics. Appointed from University of Ife, Ibadan. Place of study: England. S-HSS

VICTORIA IFEYINWA ADA MOJEKWU S.R.N., University College Hospital, Ibadan, 1956. Nursing Education. Appointed from University of Ibadan. Place of study: U.S.A. S-MNS

RAPHAEL ASUERINMEN ODIHIRIN M.S., Rutgers—the State University of New Jersey, 1964. Plant Science—Nematology. Appointed from Ministry of Agriculture, Ibadan. Place of study: U.S.A. S-AS

SAMSON OLAJUWON OLAYIDE M.S., University of California, Davis, 1964. Agricultural Economics. Appointed from University of Ibadan. Place of study: U.S.A. S-HSS

ABIODUN OYEWOLE OYENEYE S.R.N., Harold Wood Hospital, England, 1961. Psychiatric Nursing. Appointed from University of Ibadan. Place of study: U.S.A. S-MNS

MARIA ORUFONOMO TSEKIRI S.C.M., Sharoe Green Hospital, England, 1964. Psychiatric Nursing. Appointed from University of Ibadan. Place of study: U.S.A. S-MNS

PERU

WILFREDO SERGIO SALHUANA M.S., North Carolina State College, 1960. Animal Science—Genetics and Breeding. Appointed from Agrarian University. Place of study: U.S.A. S-AS

HUGO EDUARDO SANCHEZ CAMPOS Ing.Agr., Agrarian University, 1952. Plant Science—Genetics and Breeding. Appointed from Agrarian University. Place of study: U.S.A. S-AS

MARIANO SEGURA BUSTAMANTE M.S., Colorado State University, 1962. Plant Science—Agronomy. Appointed from Ministry of Labor. Place of study: U.S.A. S-AS

PHILIPPINES

GERARDO M. ACAY B.A., University of the Philippines, Quezon City, 1960. Philosophy. Appointed from University of the Philippines. Place of study: U.S.A. S-HSS

IGNACIO LOPEZ ALAVA B.S., University of the Philippines, Quezon City, 1961. Mathematics. Appointed from University of the Philippines. Place of study: U.S.A. S-MNS

BUENA S. BACULI M.D., University of the Philippines, Quezon City, 1959. Histology—Histochemistry. Appointed from University of the Philippines, Manila. Place of study: U.S.A. F-MNS

NESTOR S. BAUTISTA M.D., University of the Philippines, Manila, 1955. Anatomy. Appointed from University of the Philippines. Place of study: U.S.A. F-MNS

ROMEO M. BAUTISTA M.A., University of the Philippines, Quezon City, 1966. Economics. Appointed from University of the Philippines. Place of study: U.S.A. S-HSS

VITALIANO B. BERNARDINO, JR. M.D., University of the Philippines, Manila, 1962. Ophthalmic Pathology. Appointed from University of the Philippines. Place of study: U.S.A. F-MNS

MANUEL FLORES BONIFACIO M.S., University of Wisconsin, 1965. Sociology. Appointed from University of the Philippines, Quezon City. Place of study: U.S.A. S-HSS

SESAN MANZA CASTRO M.D., University of the Philippines, Manila, 1961. Gross Anatomy. Appointed from University of the Philippines. Place of study: U.S.A. F-MNS

FLORENCIO ROBLES CHAVEZ M.D., University of the Philippines, Manila, 1959. Physiology. Appointed from University of the Philippines. Place of study: U.S.A. F-MNS

AUGUSTUS C. DAMIAN, JR. M.D., University of the Philippines, Manila, 1963. Physiology. Appointed from University of the Philippines. Place of study: U.S.A. F-MNS

ROLANDO ALTAREJOS DANAO M.S., University of the Philippines, Quezon City, 1965. Mathematics. Appointed from University of the Philippines. Place of study: U.S.A. S-MNS

VIRGILIO GASPAR ENRIQUEZ B.A., University of the Philippines, Quezon City, 1961. Psychology—Social Psychology. Appointed from University of the Philippines. Place of study: U.S.A. S-HSS

ROGELIO DAVID FELICIANO B.A., University of the Philippines, Quezon City, 1960. Economics and Rural Life. Appointed from International Rice Research Institute. Place of study: U.S.A. S-AS

RAMON S. LIWANAG M.A., Ohio State University, 1962. Sociology. Appointed from University of the Philippines, Quezon City. Place of study: U.S.A. S-HSS

ROBERTO SANCHEZ MARIANO M.S., University of Illinois, 1965. Statistics. Appointed from University of the Philippines, Quezon City. Place of study: U.S.A. S-HSS

ASUNCION C. MITERIA-AUSTRIA M.A., Columbia University, 1958. Psychology. Appointed from University of the Philippines, Quezon City. Place of study: U.S.A. S-HSS

ROMEO URDANETA QUINTANA M.S., University of Hawaii, 1965. Plant Science—Agronomy. Appointed from University of the Philippines, College. Place of study: U.S.A. S-AS

HENRY P. SAMONTE M.S., University of the Philippines, College, 1965. Soil Science. Appointed from University of the Philippines. Place of study: U.S.A. S-AS

MERCEDES ESMERALDA SOBERANO B.S., University of the Philippines, Quezon City, 1960. Biochemistry. Appointed from University of the Philippines. Place of study: U.S.A. S-MNS

FRANCISCA G. TAN GATUE B.S., University of the Philippines, Quezon City, 1952. Chemistry. Appointed from University of the Philippines. Place of study: U.S.A. S-MNS

VICTOR O. TANTENGCO M.D., University of the Philippines, Manila, 1955. Public Health Nutrition. Appointed from University of the Philippines. Place of study: U.S.A. F-MNS

SUDAN

EL HAG ALI EL HAG AHMED A/DALLA B.A., University of Khartoum, 1966. Linguistics. Appointed from University of Khartoum. Place of study: England. S-HSS

MUTWAKIL AHMED AMIN M.A., University of London, England, 1956. Geography. Appointed from University of Khartoum. Place of study: U.S.A. S-HSS

SABIR MOHAMMED MAGDOUB EL BIHARI B.V.Sc., University of Khartoum, 1965. Medical Entomology. Appointed from University of Khartoum. Place of study: U.S.A. S-MNS

IBRAHIM AHMED EL HARDALLO B.A., University of London, England, 1964. Semitic Studies. Appointed from University of Khartoum. Place of study: England. S-HSS

MANSOUR FARIS HUSSEIN B.V.Sc., University of Khartoum, 1965. Veterinary Pathology. Appointed from University of Khartoum. Place of study: U.S.A. S-AS

MAMOUN DAOUD EL KHALIFA Ph.D., University of Zagreb, Yugoslavia, 1964. Botany. Appointed from University of Khartoum. Place of study: U.S.A. F-MNS

FATHIA SAAD MURSAL Certificate, Khartoum Nursing College, 1962. Maternal and Child Health Nursing. Appointed from Ministry of Health. Place of study: Canada. S-MNS

AMIR IBRAHIM MOHED NOUR Dipl. (Fine Arts), University of London, England, 1962. Fine Arts. Appointed from Ministry of Education. Place of study: U.S.A. S-HSS

MOHAMED SADIQ RASHEED B.Sc., University of Khartoum, 1966. Economics. Appointed from University of Khartoum. Place of study: U.S.A. S-HSS

TANZANIA

JOSEPH M. N. KAKOOZA LL.B., National University of Ireland, Dublin, 1959. Legal Studies. Appointed from University College, Dar es Salaam. Place of study: U.S.A. S-HSS

ABDUL MOHAMED HUSSEIN SHERIFF M.A., University of California, Los Angeles, 1966. History. Appointed from University College, Dar es Salaam. Place of study: England. S-HSS

THAILAND

AMNUAY THITHAPANDHA B.S., University of Adelaide, Australia, 1965. Pharmacology. Appointed from University of Medical Sciences. Place of study: U.S.A. S-MNS

AMNUEY SUWANAKIJBORIHARN M.P.A., Indiana University, 1965. Political Science. Appointed from National Institute of Development Administration. Place of study: U.S.A. S-HSS

APICHAI PUNTASEN B.Sc.(Econ.), Thammasat University, 1963. Economics. Appointed from Thammasat University. Place of study: U.S.A. S-HSS

ARWOOTH NA LAMPANG M.Agr., North Carolina State College, 1960. Plant Science—Genetics and Breeding. Appointed from Ministry of Agriculture. Place of study: U.S.A. S-AS

BHINYO BHANIJBHAND B.S., University of Queensland, Australia, 1965. Biochemistry. Appointed from University of Medical Sciences. Place of study: U.S.A. S-MNS

BUNLUE KHONGCHANTRA LL.B., Thammasat University, 1963. Sociology. Appointed from Thammasat University. Place of study: U.S.A. S-HSS

CHARAN CHANTALAKHANA M.S., Iowa State University, 1962. Animal Science—Animal Husbandry. Appointed from Kasetsart University. Place of study: U.S.A. S-AS

CHATTHIP NARTSUPHA M.A., Tufts University, 1965. Economics. Appointed from Chulalongkorn University. Place of study: U.S.A. S-HSS

DUANGCHAI MUKTAPRAKORN B.S., Boston University, 1960. Nursing Service Administration. Appointed from University of Medical Sciences. Place of study: U.S.A. S-MNS

KAMOL SOMVICHIAN M.A., New York University, 1961. Political Science. Appointed from Chulalongkorn University. Place of study: U.S.A. S-HSS

KANCHANA SINDHVANANDA M.A., University of Michigan, 1956. English. Appointed from Thammasat University. Place of study: U.S.A. S-HSS

KLOM SOMBATSIRI B.Sc., Kasetsart University, 1956. Plant Science—Genetics and Breeding. Appointed from Ministry of Agriculture. Place of study: India. S-AS

KUMPOL ISARANKURA Ph.D., University College of North Wales, Bangor, 1965. Marine Biology. Appointed from Chulalongkorn University. Place of study: U.S.A. F-MNS

LANTOM SANGCHANTAI B.S., University of Medical Sciences, 1961. Nursing. Appointed from University of Medical Sciences. Place of study: U.S.A. S-MNS

LIANGCHAI LIMLOMWONGSE B.Sc., University of Western Australia, Perth, 1965. Physiology. Appointed from University of Medical Sciences. Place of study: U.S.A. S-MNS

NISANART SUCHARIKUL B.A., Thammasat University, 1964. Sociology. Appointed from Thammasat University. Place of study: U.S.A. S-HSS

PANYA POONYATHAWON B.Sc., Kasetsart University, 1955. Entomology. Appointed from Department of Agriculture. Place of study: U.S.A. S-AS

PHANU SITTHISOMWONG D.D.S., University of Medical Sciences, 1963. Microbiology. Appointed from University of Medical Sciences. Place of study: U.S.A. F-MNS

PICHIT TOSUKHOWONG B.S., University of Adelaide, Australia, 1965. Biochemistry. Appointed from University of Medical Sciences. Place of study: U.S.A. S-MNS

PONGSRI LEKAWATANA B.A., Victoria University of Manchester, England, 1954. Linguistics. Appointed from Chulalongkorn University. Place of study: U.S.A. S-HSS

PRASERT SOBHON B.Sc., University of Western Australia, Perth, 1965. Anatomy. Appointed from University of Medical Sciences. Place of study: U.S.A. S-MNS

PREEYA SEVIKUL B.Sc., University of Medical Sciences, 1960. Maternal and Child Nursing. Appointed from University of Medical Sciences. Place of study: U.S.A. S-MNS

PRIYA VONGTHONGSRI M.Ed., University of Illinois, 1962. Literature. Appointed from Thammasat University. Place of study: U.S.A. S-HSS

SANCHAWI SAIBUA M.A., Central Michigan University, 1962. Linguistics. Appointed from Thammasat University. Place of study: U.S.A. S-HSS

SINEE SILAPAKAMPISES B.S., University of Medical Sciences, 1958. Nursing. Appointed from University of Medical Sciences. Place of study: U.S.A. S-MNS

SUDHA SETAMANIT M.A., University of Leeds, England, 1959. Literature. Appointed from Chulalongkorn University. Place of study: U.S.A. S-HSS

SUKANYA NITUNGKORN B.Sc.(Econ.), Thammasat University, 1963. Economics. Appointed from Thammasat University. Place of study: U.S.A. S-HSS

SUPAP MONKOLPRASIT M.A., Stanford University, 1963. Marine Biology. Appointed from Kasetsart University. Place of study: U.S.A. S-MNS

SUTHIRA ARJUVATANA B.S., Jersey City State College, New Jersey, 1965. Public Health Nursing. Appointed from Ramathibodi Nursing School. Place of study: U.S.A. S-MNS

TAWEE MUENNIKORN B.Sc. (Econ.), Thammasat University, 1963. Economics. Appointed from Thammasat University. Place of study: U.S.A. S-HSS

VASAN THANYAMANTA M.S., Chulalongkorn University, 1966. Statistics. Appointed from Thammasat University. Place of study: U.S.A. S-HSS

VIRABONGSA RAMANGKURA B.A., Chulalongkorn University, 1965. Economics. Appointed from Chulalongkorn University. Place of study: U.S.A. S-HSS

WISIT PHIJAISANIT M.D., University of Medical Sciences, 1961. Hospital Administration. Appointed from University of Medical Sciences. Place of study: U.S.A. F-MNS

YUT SAKDEJAYONT LL.B., Thammasat University, 1963. Sociology. Appointed from Thammasat University. Place of study: U.S.A. S-HSS

UGANDA

WILLIAM BAZETERRA BANAGE Ph.D., University of Durham, England, 1960. Soil Science. Appointed from Makerere University College. Place of study: England. F-AS

SAMWIRI KARUGIRE B.A., Makerere University College, 1966. History. Appointed from Makerere University College. Place of study: England. S-HSS

GULAMABAS GULAMHUSEN SIVJEE B.S., Makerere University College, 1963. Geophysics. Appointed from Makerere University College. Place of study: U.S.A. S-MNS

UNITED ARAB REPUBLIC

ELHAM HUSSEIN TALAAT M.Sc., Ain Shams University, 1965. Plant Science—Genetics and Breeding. Appointed from Agricultural Research Station, Sakha, Mouhafazeh Kafr-El-Sheikh. Place of study: U.S.A. S-AS

UNITED STATES

ROBERT MALCOLM AHN B.A., University of Oxford, England, 1965. Literature. Appointed from Fisk University. Place of study: England. S-HSS

FRAN BENNETT M.S., University of Wisconsin, 1952. Drama—Movement. Appointed from Tyrone Guthrie Theater, Minneapolis. Place of study: England. F-ARTS

HENRIETTE ETOILE LENORE DUPREE M.A., Indiana University, 1957. Drama. Appointed from Fisk University. Place of study: U.S.A. S-HSS

JOHN EDWARD MCCLUSKEY M.A., Columbia University, 1957. Literature. Appointed from Fisk University. Place of study: U.S.A. S-HSS

MARTIN SAMUEL WOLFE M.D., Cornell University, 1961. Tropical Medicine—Hygiene. Appointed from Cornell Medical Division, Bellevue Hospital. Place of study: England. F-MNS

URUGUAY

EDMUNDO DA FONTOURA GASTAL Ing.Agr., Rural University of the South, Brazil, 1957. Agricultural Economics. Appointed from Inter-American Institute of Agricultural Sciences. Place of study: Brazil. S-HSS

FINANCIAL STATEMENTS 1966

FINANCIAL SUMMARY FOR 1966

The Trustees of The Rockefeller Foundation approved $41.8 million in new appropriations during 1966.

The Foundation's five major areas of interest received a total of $31.9 million, allocated as follows: Toward the Conquest of Hunger—$8.6 million; University Development—$7.8 million; Problems of Population—$3.8 million; Toward Equal Opportunity—$4.9 million; Aiding Our Cultural Development—$3.3 million, and for projects closely related to these five program areas—$3.5 million. Grants in aid were funded with $1.9 million, and fellowships with $3.3 million. Appropriations of $2.4 million were made for New York program expenses and $2.3 million for administrative services.

These new commitments bring to a total of $911 million the appropriations of The Rockefeller Foundation during the 53 years of its existence.

Payments during 1966 on current and prior appropriations were $34.9 million. These payments were made from the Foundation's income for the year of $30.8 million and from $4.1 million of principal. By the end of 1966, the Foundation's total payments for the 53-year period were $833.9 million, of which $695.7 million was paid from income, while $138.2 million was paid from principal.

At December 31, commitments for future payments aggregated $77.1 million.

The Foundation continued the diversification of its investments by the sale of 133,500 shares of Standard Oil Company (New Jersey) capital stock. The proceeds, together with the proceeds from the sales of other securities, were reinvested in other common stocks.

The financial statements, and the opinion of Haskins & Sells, independent public accountants, are presented in the following pages.

ACCOUNTANTS' OPINION

HASKINS & SELLS
CERTIFIED PUBLIC ACCOUNTANTS

TWO BROADWAY
NEW YORK 10004

February 15, 1967

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, 1966 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, 1966 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, 1966

ASSETS

MARKETABLE SECURITIES—at cost or market value at date of gift or receipt (quoted market value, $733,019,735)	$267,316,673
CASH ON HAND AND ON DEPOSIT	1,045,285
ADVANCES AND ACCOUNTS RECEIVABLE	849,794
PROPERTY—at nominal or depreciated amount	120,707
TOTAL	$269,332,459

FUNDS AND OBLIGATIONS

PRINCIPAL FUND	$191,933,525
UNPAID APPROPRIATIONS	77,068,633
ACCOUNTS PAYABLE	209,594
PROPERTY FUND	120,707
TOTAL	$269,332,459

STATEMENT OF INCOME AND APPROPRIATIONS

FOR THE YEAR ENDED DECEMBER 31, 1966

INCOME:		
Dividends		$ 28,884,050
Interest		1,900,187
		30,784,237
APPROPRIATIONS:		
During the year	$ 41,843,499	
Less refunds and lapses of unexpended balances	757,130	41,086,369
EXCESS OF APPROPRIATIONS OVER INCOME FOR THE YEAR CHARGED TO PRINCIPAL FUND		$ 10,302,132

STATEMENT OF PRINCIPAL FUND

FOR THE YEAR ENDED DECEMBER 31, 1966

BALANCE, JANUARY 1, 1966	$190,751,658
ADD:	
Excess of proceeds from sales of securities over ledger amount	11,392,150
Contributions received	91,849
	202,235,657
DEDUCT:	
Excess of appropriations over income for the year	10,302,132
BALANCE, DECEMBER 31, 1966	$191,933,525

SUMMARY OF APPROPRIATIONS AND PAYMENTS

FOR THE YEAR ENDED DECEMBER 31, 1966

UNPAID APPROPRIATIONS, JANUARY 1, 1966		$ 70,875,635
APPROPRIATIONS:		
During the year	$ 41,843,499	
Less refunds and lapses of unexpended balances	757,130	41,086,369
		111,962,004
PAYMENTS:		
During the year	34,928,281	
Less refunds on appropriations	34,910	34,893,371
UNPAID APPROPRIATIONS, DECEMBER 31, 1966		$ 77,068,633

SUMMARY OF TRANSACTIONS IN MARKETABLE SECURITIES

FOR THE YEAR ENDED DECEMBER 31, 1966

Ledger Amount of Securities, January 1, 1966		$240,478,335
Purchased	$ 75,085,485	
Otherwise Acquired	497	75,085,982
		315,564,317
Sold	35,612,753	
Redeemed at Maturity	12,630,698	
Amortization of Bond Premiums	4,193	48,247,644
Ledger Amount of Securities, December 31, 1966		$267,316,673

TRANSACTIONS IN MARKETABLE SECURITIES

FOR THE YEAR ENDED DECEMBER 31, 1966

PURCHASED:		LEDGER AMOUNT
$ 9,000,000	U. S. Treasury Bills	$ 8,809,941
800,000	U. S. 1½% Treasury Notes due October 1, 1966	798,875
2,000,000	U. S. 4% Treasury Bonds due August 15, 1970	1,934,375
1,500,000	U. S. 4% Treasury Bonds due February 15, 1972	1,436,250
1,000,000	U. S. 4⅛% Treasury Bonds due November 15, 1973	952,812
3,000,000	Federal Home Loan Banks 5¾% Bonds due June 26, 1967	3,000,000
2,000,000	Federal Home Loan Banks 4⅜% Bonds due March 1, 1968	1,974,375
3,000,000	Federal Land Banks 4¼% Bonds due October 20, 1969	2,925,000
13,500,000	Federal National Mortgage Association Notes	13,327,610
2,500,000	Federal National Mortgage Association 5⅞% Debentures due September 10, 1968	2,493,125
2,000,000	Federal National Mortgage Association 4⅜% Debentures due April 10, 1969	1,965,000
3,000,000	Federal National Mortgage Association 6% Debentures due December 12, 1969	3,010,313
6,500,000	The Chase Manhattan Bank 5.50% Certificates of Deposit	6,500,000
14,900	shares American Home Products Corporation	1,065,359
20,000	" American Telephone & Telegraph Company	1,086,123
20,000	" Crown Zellerbach Corporation	898,865
26,200	" DuPont (E. I.) de Nemours and Company	5,118,969
107,900	" Firestone Tire & Rubber Company	4,836,429
5,000	" General Electric Company	455,572
27,700	" General Motors Corporation	2,404,260
8,100	" Great American Insurance Company	533,124

TRANSACTIONS IN MARKETABLE SECURITIES *continued*

FOR THE YEAR ENDED DECEMBER 31, 1966

PURCHASED: *concluded*			LEDGER AMOUNT
25,000	shares	Hanna Mining Company	$ 1,205,114
931	"	International Business Machines Corporation (exercise of 37,240 rights)	265,361
6,900	"	International Business Machines Corporation	2,180,284
35,000	"	International Nickel Company of Canada, Ltd.	2,780,762
54,000	"	National Steel Corporation	2,328,901
30,000	"	Southern Company (The)	798,686
			$ 75,085,485

OTHERWISE ACQUIRED:			
300,000	shares	Consolidated Natural Gas Company received in a stock split on 300,000 shares owned of record December 7, 1966	—
1	share	International Business Machines Corporation received as a contribution	$ 497
12,407	shares	International Business Machines Corporation received in a stock split on 24,814 shares owned of record May 3, 1966	—
60,000	"	Kennecott Copper Corporation received in a stock split on 30,000 shares owned of record June 1, 1966	—
300,000	"	Mobil Oil Corporation received in a stock split on 300,000 shares owned of record May 18, 1966	—
735	"	Monsanto Company received as a stock dividend on 36,781 shares owned of record November 4, 1966	—
26,000	"	The Southern Company received in a stock split on 26,000 shares owned of record November 24, 1965	—
			$ 497

SOLD:			PROCEEDS	LEDGER AMOUNT
$ 7,000,000		U. S. Treasury Bills	$ 6,848,101	$ 6,848,101
12,000,000		U. S. 2½% Treasury Bonds due December 15, 1964-69	11,201,250	11,556,563
5,000,000		Federal National Mortgage Association Notes	4,937,775	4,937,775
5,000,000		The Chase Manhattan Bank 5.50% Certificates of Deposit	5,000,000	5,000,000
50,000	shares	Goodrich (B. F.) Company	2,913,380	1,839,893
30,000	"	Inland Steel Company	919,374	749,508
90,000	"	Kennecott Copper Corporation	2,723,821	1,756,180
45,000	"	Phelps Dodge Corporation	2,598,578	1,186,128
27,217	"	Philips Gloeilampenfabrieken	892,129	1,047,594
133,500	"	Standard Oil Company (New Jersey)	8,970,470	690,997
		Fractional share	25	14
			$ 47,004,903	$ 35,612,753

TRANSACTIONS IN MARKETABLE SECURITIES *concluded*

FOR THE YEAR ENDED DECEMBER 31, 1966

REDEEMED AT MATURITY:		PROCEEDS	LEDGER AMOUNT
$ 3,000,000	U. S. Treasury Bills	$ 2,941,988	$ 2,941,988
800,000	U. S. 1½% Treasury Notes due October 1, 1966	798,875	798,875
8,500,000	Federal National Mortgage Association Notes	8,389,835	8,389,835
500,000	The Chase Manhattan Bank 5.50% Certificate of Deposit	500,000	500,000
		$ 12,630,698	$ 12,630,698

SCHEDULE OF MARKETABLE SECURITIES

DECEMBER 31, 1966

FIXED INCOME SECURITIES	LEDGER AMOUNT	MARKET VALUE
U. S. Government Obligations	$ 17,275,635	$ 17,313,125
U. S. Government Agency Obligations	15,367,813	15,419,375
Certificates of Deposit	1,000,000	1,000,000
Corporate Bonds	9,549,879	8,273,750
	43,193,327	42,006,250
COMMON STOCKS	224,123,346	691,013,485
Total	$267,316,673	$733,019,735

FIXED INCOME SECURITIES	PAR	LEDGER AMOUNT	MARKET VALUE
U. S. Government Obligations:			
Notes			
3⅝%–February 15, 1967	$ 12,000,000	$ 11,957,198	$ 11,979,375
Bonds			
3⅞%–May 15, 1968	1,000,000	995,000	987,500
4%–August 15, 1970	2,000,000	1,934,375	1,937,500
4%–February 15, 1972	1,500,000	1,436,250	1,447,500
4¼%–November 15, 1973	1,000,000	952,812	961,250
	17,500,000	17,275,635	17,313,125

SCHEDULE OF MARKETABLE SECURITIES *continued*

DECEMBER 31, 1966

FIXED INCOME SECURITIES *concluded*	PAR	LEDGER AMOUNT	MARKET VALUE
U. S. Government Agency Obligations:			
Federal Home Loan Banks Bonds			
5¾%–June 26, 1967	$ 3,000,000	$ 3,000,000	$ 3,005,625
4⅜%–March 1, 1968	2,000,000	1,974,375	1,978,750
Federal Land Banks Bonds			
4¼%–October 20, 1969	3,000,000	2,925,000	2,910,000
Federal National Mortgage Association Debentures			
5⅛%–September 10, 1968	2,500,000	2,493,125	2,518,750
4⅜%–April 10, 1969	2,000,000	1,965,000	1,950,000
6%–December 12, 1969	3,000,000	3,010,313	3,056,250
	15,500,000	15,367,813	15,419,375
Certificates of Deposit:			
The Chase Manhattan Bank 5.50%–January 3, 1967	1,000,000	1,000,000	1,000,000
Corporate Bonds:			
American Telephone & Telegraph Company 3⅛%–July 1, 1990	2,000,000	2,038,877	1,640,000
Dallas Power & Light Company 4¼%–December 1, 1986	500,000	502,829	432,500
General Motors Acceptance Corporation 5%–August 15, 1977	1,000,000	975,000	952,500
Illinois Bell Telephone Company 4¼%–March 1, 1988	1,000,000	1,009,710	862,500
International Bank for Reconstruction and Development 3½%–October 15, 1971	1,000,000	980,000	895,000
Michigan Bell Telephone Company 4⅜%–December 1, 1991	1,000,000	1,016,199	850,000
The Mountain States Telephone & Telegraph Company 4⅜%–February 1, 1988	1,000,000	1,008,860	875,000
Pacific Gas & Electric Company 4½%–December 1, 1986	1,000,000	1,010,008	891,250
Public Service Electric & Gas Company 4⅜%–November 1, 1986	1,000,000	1,008,396	875,000
	9,500,000	9,549,879	8,273,750
TOTAL FIXED INCOME SECURITIES	$ 43,500,000	$ 43,193,327	$ 42,006,250

SCHEDULE OF MARKETABLE SECURITIES *concluded*

DECEMBER 31, 1966

COMMON STOCKS	SHARES	LEDGER AMOUNT	MARKET VALUE
Aluminum Company of America	19,200	$ 1,213,867	$ 1,504,800
American Electric Power Company, Inc.	132,392	1,074,601	5,163,288
American Home Products Corporation	53,100	3,628,841	4,254,637
American Smelting & Refining Company	66,000	1,894,808	3,894,000
American Telephone & Telegraph Company	175,926	4,636,063	9,675,930
Consolidated Natural Gas Company	600,000	3,603,294	17,175,000
Consumers Power Company	49,700	2,509,303	2,516,063
Continental Insurance Company	48,875	2,064,961	3,885,562
Continental Oil Company	300,000	2,015,418	21,225,000
Corning Glass Works	35,000	4,728,113	10,815,000
Crown Zellerbach Corporation	82,500	3,391,122	3,671,250
Dow Chemical Company	52,476	2,527,688	3,233,834
DuPont (E. I.) de Nemours and Company	36,200	7,460,147	5,194,700
Eastman Kodak Company	118,600	7,790,263	15,151,150
Firestone Tire & Rubber Company	137,900	6,120,822	6,343,400
Ford Motor Company	492,891	22,948,266	18,976,303
General Electric Company	189,000	11,631,709	16,726,500
General Motors Corporation	195,532	10,481,427	12,880,670
Great American Insurance Company	37,800	2,420,259	2,301,075
Hanna Mining Company	94,075	4,377,577	4,891,900
Hartford Fire Insurance Company	102,000	2,178,528	7,930,500
Hooker Chemical Corporation	70,860	2,681,249	2,595,248
Insurance Company of North America	50,000	2,411,908	4,312,500
International Business Machines Corporation	45,052	7,232,802	16,736,818
International Nickel Company of Canada, Ltd.	145,000	5,548,322	12,723,750
International Paper Company	251,402	2,861,119	6,379,326
Marathon Oil Company	212,241	3,708,384	13,318,123
McGraw-Edison Company	83,200	1,635,791	2,724,800
Minnesota Mining & Manufacturing Company	100,000	6,312,717	7,800,000
Mobil Oil Corporation	600,000	7,778,152	28,050,000
Monsanto Company	37,516	792,447	1,547,535
National Cash Register Company	26,250	1,821,986	1,775,156
National Steel Corporation	134,000	5,870,415	5,376,750
Owens-Corning Fiberglas Corporation	40,000	2,530,742	2,640,000
Peoples Gas Light & Coke Company	84,000	1,057,373	2,919,000
Pittsburgh Plate Glass Company	61,800	3,981,579	3,360,375
Scott Paper Company	123,000	4,064,000	3,351,750
Security First National Bank (Los Angeles)	34,998	1,655,686	1,714,902
Southern Company (The)	82,000	1,815,272	2,367,750
Standard Oil Company of California	231,525	1,893,562	13,920,441
Standard Oil Company (Indiana)	2,000,000	14,184,718	96,500,000
Standard Oil Company (New Jersey)	4,090,849	21,174,260	258,746,199
Travelers Corporation (The)	100,000	856,385	3,800,000
Union Carbide Corporation	60,000	2,973,773	2,835,000
Union Tank Car Company	100,000	593,187	5,737,500
United States Steel Corporation	55,000	2,797,695	2,021,250
Upjohn Company	50,000	2,529,555	3,418,750
Western Bancorporation	60,000	2,057,273	1,830,000
Weyerhaeuser Company	150,000	2,605,917	5,100,000
TOTAL COMMON STOCKS		$224,123,346	$691,013,485

PAYMENTS 1966

Approximately 80 per cent of all 1966 payments were made in the United States, including expenditures for equipment and supplies purchased for shipment to foreign grantees. Payments marked ( ) represent refunds.

INTERNATIONAL

Cooperative programs of The Rockefeller Foundation

Conquest of Hunger—field staff in the Agricultural Sciences	$1,955,990
University Development—program development and field staff in the Humanities and Social Sciences	777,843
Virus Research Program—field staff	512,510
Field Research in Medical Sciences, Nutrition, and Population Problems	573,377

Organization of American States

Inter-American Institute of Agricultural Sciences, Costa Rica	
Conference on agricultural education	15,000
Library development in Brazil	15,000
Secretariat for the Inter-American Association of Agricultural Librarians and Documentalists	15,000
Secretariat for Latin American Association of Plant Science	15,916

United Nations

Economic Commission for Asia and the Far East	
Demographic program	27,000
Food and Agriculture Organization, Italy	
Training awards for Middle Eastern wheat specialists	(4,923)
Travel expenses of delegates	7,500

ARGENTINA

Institute of Biochemical Investigations

Contribution toward fellowship operations	500

National Institute of Agricultural Technology

Travel expenses of visiting professors	4,538

National University of Córdoba

Institute of Pharmacology	4,201

Torcuato di Tella Institute

International Center for Comparative Social Research	29,000
Latin American Center for Advanced Musical Studies	53,156

University of Buenos Aires

Faculties of Medical Sciences, Pharmacy and Chemistry, and Exact and Natural Sciences	3,162

Other support

Fellowships and scholarships for individuals	23,959
Miscellaneous	47

PAYMENTS 1966

AUSTRALIA	
Australian National University	
Research on arboviruses in New Guinea	7,500
University of Adelaide	
Faculty assignment to the Agricultural Research Institute, Santiago, Chile	8,200
University of Melbourne	
Research in human genetics	(1,467)
University of New England	
Contribution toward fellowship operations	500
University of Queensland	
Contribution toward fellowship operations	1,000
Heron Island Research Station	18,382
Other support	
Travel grants to individuals	6,619
BELGIUM	
College of Europe	
Study of the European Economic Community	13,500
Other support	
Fellowships, scholarships, and travel grants to individuals	4,312
BOLIVIA	
Fellowships and scholarships for individuals	5,827
BRAZIL	
Brazilian Society of Genetics	
Research in genetics	10,974
International symposium	2,589
Faculty of Medical and Biological Sciences of Botucatú	
Research in the Laboratory of Animal Genetics	1,378
Faculty of Philosophy, Sciences, and Letters of Rio Claro	
Studies on bee genetics, management, and behavior	570
Getulio Vargas Foundation	
Advanced training for Brazilian economists	(1,981)
Institute of Agronomy of the State of São Paulo	
Tropical Center of Food Research and Technology	63,399
Rural University of the State of Minas Gerais	
Contribution toward fellowship operations	500
Development of its School of Domestic Science and study of native plants	30,076
São Paulo State Secretariat of Agriculture	
Research at the Animal Nutrition Research Center	15,974

PAYMENTS 1966

University of Bahia	
Research in the Laboratory of Human Genetics	3,23:
University of Brasilia	
Research in the Department of Genetics	4,92:
University of Brazil	
Faculty of Medicine	2,923
University of Minas Gerais	
Faculty of Medicine	37,663
Research in the Institute of General Biology	1,374
University of Paraná	
Research in the Laboratory of Human Genetics	6,330
Catalogue of neotropical bees	4,764
University of Rio Grande do Sul	
Research in the Laboratory of Human Genetics	2,370
Research in the Laboratory of Animal Genetics	1,321
Research in the Laboratory of Molecular Genetics	4,177
Advanced training in economic sciences	10,976
Faculty of Medicine and Institute of Natural Sciences	8,334
University of São Paulo	
Research in the Laboratory of Human Genetics	4,610
Research in the Laboratory of Animal Genetics	6,666
Research at the School of Agriculture, Piracicaba	68,946
Research in the Department of Genetics	2,500
Cooperative programs	
Belém Virus Laboratories	57,610
Visiting faculty (University of Minas Gerais)	18,233
Other support	
Support of work in the creative arts	6,000
Fellowships, scholarships, and travel grants to individuals	131,675
CANADA	
Canadian Forestry Education Study Group	
Study of forestry education	5,000
McGill University	
Contribution toward fellowship operations	1,500
Study of the uncommitted nations	10,000
University of Manitoba	
Research on Triticale, a wheat-rye hybrid	17,519
CEYLON	
Fellowships and scholarships for individuals	60

PAYMENTS 1966

CHILE	
Agricultural Research Institute	
Library development, research, and training	43,478
Cooperative research projects	20,504
Catholic University of Chile	
Faculty of Agronomy	11,545
Development in neurology, marine biology, and nuclear medicine	6,468
Electron microscope studies	5,773
Department of Neurophysiology	4,014
Equipment for the Conjunto de Musica Antigua	4,933
Equipment for the Teatro de Ensayo	1,562
Research in the Center of Economic Studies	7,350
Undergraduate research program in history	3,900
University of Chile	
Center of Graduate Studies on American History	63,884
Research in the Graduate School of Economics	48,067
Institute of Economics	18,556
Library improvement	459
Population research and family planning programs	62,910
Department of General Biochemistry	803
Research on malnutrition in infants and preschool children	15,000
Research in the Faculty of Medicine	1,747
Faculty of Medicine library	64,402
Department of Virology	5,000
University of Concepción	
Research in the Faculty of Agronomy	2,392
Visiting professor in agricultural economics	16,250
Cooperative program	
International Development Center, Santiago	69,997
Other support	
Fellowships, scholarships, and travel grants to individuals	252,002
COLOMBIA	
Colombian Association of Faculties of Medicine	
General support	15,000
Colombian Institute of Agriculture	
General support	48,768
University of the Andes	
Department of Biology and premedical program	47,043
Research and training in political science	3,599
University of Antioquia	
School of Library Science	43,200

PAYMENTS 1966

University of Valle	
Contribution toward fellowship operations	1,000
Development and equipment for the library	50,054
Development of the University hospital and medical school	63,100
Faculty of Medicine	347,394
Construction of administrative facilities	30,000
Development of administrative services	10,885
General development	100,000
General support for the School of Nursing	22,579
Candelaria Rural Health Center	30,000
Research in tropical diseases	3,959
Department of Preventive Medicine	140,000
Nutrition research program	16,366
Population studies	62,500
Program in reproductive physiology	3,317
Postgraduate training awards	30,000
Faculty of Architecture	4,147
Research in agricultural economics	5,371
Research on grains and other products with the Colombian Institute of Agriculture	800
Department of Biology	7,141
Seminar on the humanities	500
Toward costs of a socio-economic survey	9,800
Language laboratory	285
Faculty training in linguistics and language teaching	1,792
Xavier University	
Division of Microbiology	14,455
Cooperative programs	
Colombian and Andean Centers	249,890
International Maize and Wheat Improvement Center activities in Colombia	4,032
University Development Program Center (University of Valle)	53,841
Virus Laboratories, Cali	38,467
Visiting faculty (University of Valle)	64,000
Other support	
Fellowships, scholarships, and travel grants to individuals	379,635
CONGO	
Lovanium University	
Research on political institutions in Africa	3,883
Equipment and supplies	5,224
Research and training in political science	7,500
Other support	
Fellowships and scholarships for individuals	16,017
COSTA RICA	
Fellowships, scholarships, and travel grants to individuals	45,452

PAYMENTS 1966

DENMARK	
Fellowships and scholarships for individuals	3,021
ECUADOR	
National Institute of Agricultural Research	
Laboratory equipment	29,272
Cooperative programs	
Colombian and Andean Centers—Cooperative activities in Ecuador	30,165
Other support	
Fellowships, scholarships, and travel grants to individuals	32,398
Miscellaneous	60
EL SALVADOR	
University of El Salvador	
Department of Microbiology	85
ETHIOPIA	
Haile Sellassie I University	
Central Agricultural Experiment Station	13,298
Other support	
Fellowships, scholarships, and travel grants to individuals	42,231
FINLAND	
University of Helsinki	
Virus research	3,812
FRANCE	
Institute of Applied Economic Sciences	
Research on food production and demand in Senegal	14,400
National Advanced Institute of Agronomy	
Contribution toward fellowship operations	1,000
Practical School of Higher Studies	
Contribution toward fellowship operations	1,000
University of Aix-Marseilles	
Research in biochemistry	6,038
Other support	
Fellowships, scholarships, and travel grants to individuals	2,407
GERMANY	
Bavarian Academy of Sciences	
Tibetan studies	(151)
Fridericiana Technical University	
Contribution toward fellowship operations	1,000

PAYMENTS 1966

University of Freiburg	
Contribution toward fellowship operations	1,000
Other support	
Travel grants to individuals	945
GHANA	
Kwame Nkrumah University of Science and Technology	
Research in the School of Agriculture	306
Other support	
Fellowships and scholarships for individuals	5,946
GUATEMALA	
University of San Carlos	
Medical library	7,500
Research in the Faculties of Veterinary Medicine and Agronomy and the Institute of Animal Husbandry	17,292
Other support	
Fellowships, scholarships, and travel grants to individuals	29,750
GUYANA	
Fellowships and scholarships for individuals	3,927
HONDURAS	
Cooperative Agency for Rural Development	
Equipment for its crop program	915
Pan American Agricultural School	
General development	20,329
Plant science symposium	15,000
Other support	
Fellowships and scholarships for individuals	12,890
HONG KONG	
Chinese University of Hong Kong	
Study of the population of Hong Kong	15,000
INDIA	
All India Institute of Medical Sciences	
Teaching hospital	407,568
Teaching and research equipment	28,490
Central Potato Research Institute	
Research equipment	1,362
Christian Medical College, Vellore	
Training of medical record department staff	2,579
Research equipment	36,295

PAYMENTS 1966

INDIA *(cont'd)*	
India International Centre	
General support	3,151
Indian Agricultural Research Institute	
Library development	6,633
Indian Cancer Research Centre	
Research in biophysics	9,520
Indian Council of Medical Research	
Research at the Nutrition Research Laboratories, Hyderabad	26,650
Indian School of International Studies	
Research materials	27,250
Staff training program	8,579
Indian Statistical Institute	
Research and training	(262)
Medical College, Trivandrum	
Scholarships in the School of Nursing	329
Osmania Medical College	
Department of Biochemistry	3,154
Punjab Agricultural University	
Construction plans for a home science college	7,500
Development of an experiment station	48,923
Seth Gordhandas Sunderdas Medical College	
Teaching and research	92,008
Sri Avinashilingam Home Science College	
Equipment for nutrition studies	9,388
University of Delhi	
Department of Botany	3,559
Comparative studies of Western and Indian music	16,815
Department of Economics	6,260
University of Lucknow	
Residency program	(146)
Uttar Pradesh Agricultural University	
Experiment station	28,198
Cooperative programs	
Ballabhgarh Rural Health Centre	65,482
Indian Program Center	87,682
Indian Agricultural Program	323,633
International Maize and Wheat Improvement Center activities in India	(3)
Virus Research Centre, Poona	55,994
Visiting faculty (University of Delhi)	21,130
Other support	
Fellowships, scholarships, and travel grants to individuals	366,868
Miscellaneous	(77)

PAYMENTS 1966

INDONESIA	
Fellowships and scholarships for individuals	6,574
IRAN	
Fellowships and scholarships for individuals	6,178
ISRAEL	
Hebrew University of Jerusalem	
Research on ancient agricultural systems in the Negev	26,000
Research in international relations	1,750
Study of Israel's relations with the great powers	1,000
Other support	
Fellowships and scholarships for individuals	4,312
ITALY	
University of Pavia	
Research in international relations	(151)
University of Rome	
Contribution toward fellowship operations	500
University of Turin	
Research in human genetics	32,544
Research in the Institute of Political Science	4,500
Villa Serbelloni	
Research and Conference Center of The Rockefeller Foundation	195,617
JAMAICA	
University of the West Indies	
Faculty of Medicine	15,000
Research and training in international relations	25,300
Faculty exchanges with the University of Valle	2,960
JAPAN	
International Christian University	
Study of the effects of higher education	3,202
Japan Women's University	
Library materials	10,678
Keio University	
Research in biochemistry	11,490
Kihara Institute for Biological Research	
Research on hybrid wheat	7,500
National Institute of Health	
Research in virology and rickettsiology	12,083
Other support	
Fellowships, scholarships, and travel grants to individuals	15,887

PAYMENTS 1966

KENYA	
East African Common Services Organization	
East African Agriculture and Forestry Research Organization	25,683
East African Veterinary Research Organization	20,000
Egerton College	
Program in agricultural education	7,033
Development of African staff	5,945
Ministry of Agriculture and Animal Husbandry	
Plant Breeding Station, Njoro	26,251
Study of agricultural education in Kenya	9,798
University of East Africa	
University College, Nairobi	
Contribution toward fellowship operations	1,000
Research on the tsetse fly	9,373
Study of veterinary institutions	6,905
Visiting faculty	528
Meeting of political scientists	725
Support of the Social Science Division of the Institute for Development Studies	14,685
Research program in the Cultural Division of the Institute for Development Studies	10,772
Research on the history of the Asians in East Africa	1,023
Research in economics and related social sciences	52,527
Research and teaching in economics	44,176
Department of Government and Administration	2,250
Faculty of Veterinary Science	97,860
Library acquisitions in African history	(1,067)
Research in the basic sciences	9,795
East Coast fever research	16,753
Other support	
Fellowships, scholarships, and travel grants to individuals	86,706
KOREA	
Ministry of Foreign Affairs	
International relations library	42
LEBANON	
Fellowships and scholarships for individuals	6,642
LIBERIA	
Cuttington College and Divinity School	
Program in economics and business administration	15,113
Faculty development	(1,665)
Economic research program	2,500
University of Liberia	
Horticulture program	15,000

PAYMENTS 1966

MALAWI	
Fellowships and scholarships for individuals	2,510
MALAYSIA	
Fellowships and scholarships for individuals	16,998
MEXICO	
Colegio de México	
Contribution toward fellowship operations	500
Research in demography	21,026
Graduate history program	28,545
Teaching and research in linguistics and Spanish American literature	2,789
Program in humanities and social sciences	11,233
International Maize and Wheat Improvement Center, Chapingo	
General support	353,700
Protein quality laboratory	39,567
Mexican Center of Writers	
Creative writing program	6,500
National Institute of Agricultural Research	
Development of facilities	786,165
Seminar on agricultural communications	844
National Institute of Anthropology and History	
Archaeological study	2,500
National Institute of Nutrition	
Equipment	9,564
Hospital for Nutritional Diseases	32,090
National School of Agriculture	
Graduate School	311,414
National University of Mexico	
Graduate training in chemistry and biochemistry	39,218
Research in the Department of Biochemistry	5,414
Technological Institute of Monterrey	
School of Agriculture	28,947
University of Guanajuato	
Department of Physiology	8,496
University of the State of Veracruz	
Faculty of Veterinary Medicine and Animal Husbandry	7,090
Delegate to the annual meeting of the American Association of University Presses	350
Cooperative programs	
International Maize and Wheat Improvement Center	219,678
Mexican research center	170,830

PAYMENTS 1966

MEXICO *(cont'd)*	
Other support	
Fellowships, scholarships, and travel grants to individuals	328,021
Miscellaneous	13
NATIONAL REPUBLIC OF CHINA, TAIWAN	
Joint Commission on Rural Reconstruction	
Fish culture research	93,280
Other support	
Fellowships and scholarships for individuals	32,847
NETHERLANDS	
University of Amsterdam	
Contribution toward fellowship operations	1,000
Other support	
Fellowships and scholarships for individuals	60
NEW ZEALAND	
University of Canterbury	
Contribution toward fellowship operations	1,000
Other support	
Travel grants to individuals	(4)
NICARAGUA	
Fellowships and scholarships for individuals	9,170
NIGERIA	
Ahmadu Bello University	
Travel to the Sudan for students of Arabic	2,815
University of Ibadan	
Research fellowships in the Department of Veterinary Medicine	12,018
Research in the Department of Veterinary Medicine	6,001
Development of the drama program	26,934
Department of Chemistry	67,577
Medical library	9,837
Research by the Nigerian Institute of Social and Economic Research	15,000
Arabic training program	1,571
Shipment of textbooks	182
Maize improvement research	99
Research program in the Faculty of Agriculture	20,082
Lectureships in the Department of Agriculture	15,392
Lectureships in agricultural economics	2,948
Department of Nursing	69,950
Research in rural pediatrics and nutrition	19,104

PAYMENTS 1966

Arbovirus research	62,720
Institute of African Studies	151,093
Faculty of Medicine	11,888
Rural health center at Igbo-Ora	126,885
Research on the breeding of pasture grasses	355
Computer services for a study in agricultural economics	1,548
Training in the Data Processing Centre	1,880
Appointment of an environmental engineer in the Department of Preventive and Social Medicine	3,365
Department of Psychiatry, Neurology, and Neurosurgery	67,630
Medical training posts	32,398
Department of Surgery	(1,182)
Cooperative programs	
Planning for an international institute of tropical agricultural research	5,735
University Development Program Center (University of Ibadan)	9,838
Visiting faculty (University of Ibadan)	87,470
Special field operations	1,392
Other support	
Fellowships, scholarships, and travel grants to individuals	206,133
PAKISTAN	
Central Institute of Islamic Research	
Support of research	2,205
Other support	
Fellowships and scholarships for individuals	6,885
PANAMA	
Fellowships and scholarships for individuals	560
PERU	
Agrarian University	
Research and teaching in agricultural economics and rural sociology	47,657
Cooperative research with the Agricultural Research and Extension Service	56,251
Agricultural Research and Extension Service	
Cooperative program with the Agrarian University	57,687
University of San Marcos	
Faculty of Veterinary Medicine	32,685
Other support	
Fellowships, scholarships, and travel grants to individuals	72,181
PHILIPPINES	
Ateneo de Manila University	
Department of Chemistry	139

PAYMENTS 1966

PHILIPPINES *(cont'd)*	
International Rice Research Institute	
Research on protein quality in rice	15,000
Philippine Fisheries Commission	
Fish culture research	75,000
University of the Philippines	
Graduate training and research in the Department of Economics	15,154
School of Economics	12,000
Staff travel, consultation, and study	4,440
Advanced training for future faculty members	10,316
University Press	64,452
Research in the United States and Europe by faculty members	16,971
Faculty development in the Division of Natural Sciences	10,426
Scholarship program in the College of Agriculture	30,000
Eye Research Institute	3,301
Faculty research in the Departments of English and Comparative Literature, History, Political Science, and Sociology	4,550
Library facilities for the Department of English and Comparative Literature	1,621
Library materials	313
Research equipment for the Department of Medicine	199
Research equipment for the Department of Physiology	16,861
Department of Anatomy	12,563
Department of Parasitology	13,694
Cooperative corn project	8,005
Rural community health teaching service	44,782
Study of rural health units	2,100
Study of the Philippine financial system	7,144
Architectural consulting services for the Natural Sciences Research Center	10,000
Library	(482)
Construction of an International Center and faculty housing	134,509
Equipment for an irrigation system	8,782
Survey and engineering plans for a utility system	67,753
Cooperative programs	
International Rice Research Institute	426,875
University Development Program Center (University of the Philippines)	29,499
Visiting faculty (University of the Philippines)	73,072
Other support	
Fellowships, scholarships, and travel grants to individuals	482,628
POLAND	
Fellowships, scholarships, and travel grants to individuals	799
Miscellaneous	92
RHODESIA	
Agricultural Research Council of Rhodesia and Nyasaland	
Soil microbiologist	13,700

PAYMENTS 1966

University College of Rhodesia and Nyasaland	
Research on the Eur-African community of Rhodesia	(158)
Study of economic development in Rhodesia and East Africa	(1,128)
Research on African history	(166)
Study of schistosomiasis	5,116
Research on the history of Central Africa	(4,446)
Other support	
Fellowships, scholarships, and travel grants to individuals	13,479
ST. LUCIA	
Schistosomiasis Research and Control	
Development of a plan for social and economic research	2,973
Cooperative program in schistosomiasis research and control	460,855
SENEGAL	
University of Dakar	
Laboratory of Medical Biochemistry	434
Other support	
Travel grants to individuals	45
SIERRA LEONE	
Fellowships and scholarships for individuals	2,613
SINGAPORE	
University of Singapore	
Research in virus diseases	4,134
Miscellaneous	(8)
SOUTH AFRICA	
Fellowship for study in East Africa	4,027
SUDAN	
University of Khartoum	
Research program of the Sudan Unit	8,640
Research on representation systems in the Sudan and neighboring states	5,700
Program on arid lands problems	7,632
Research on the ecology of bilharzia vectors	14,828
General development	47,195
Teaching and research programs	(2,106)
Cooperative program	
Visiting faculty (University of Khartoum)	11,673
Other support	
Fellowships, scholarships, and travel grants to individuals	136,087

PAYMENTS 1966

SWEDEN	
Travel grants to individuals	5,250
SWITZERLAND	
Graduate Institute of International Studies	
Training and research in international organization and relations	38,605
International Press Institute	
Program for the Asian press	37,300
University of Basel	
Study on the political thought of Immanuel Kant	10,000
Other support	
Travel grants to individuals	6,249
TANZANIA	
College of Agriculture	
General support	79,969
Government of Tanzania	
Rural survey	(2,489)
Ministry of Health and Labour	
Training program for rural physicians	10,922
University of East Africa	
University College, Dar es Salaam	
Appointment of a documentary photographer-teacher	4,800
Library facilities	28,000
Visiting lecturer	5,790
Training of photographers	1,109
Appointment of a law cataloger	2,159
Development of economic research	22,553
Developmental research program in geography	10,750
Study visits for staff members	11,047
Other support	
Fellowships, scholorships, and travel grants to individuals	19,146
THAILAND	
Chulalongkorn University	
Research in biochemistry	3,484
Research equipment	289
Research on reproductive biology	10,000
Kasetsart University	
Experimental station development	34,815
Study of protein quality and quantity of rice	3,600
Scientific equipment	623
Research on the Thai diet	10,469

PAYMENTS 1966

Thammasat University	
Library of the Faculty of Economics	1,731
Preparation of Thai-language economics teaching materials	4,860
University of Medical Sciences	
Faculty of Medical Sciences	214,220
Appointment of a laboratory director at the Faculty of Medical Sciences	4,750
Equipment for research in nutritional biochemistry at the Faculty of Medical Sciences	254
Architectural consulting services for the Faculty of Medical Sciences	1,540
Graduate scholarships in the Department of Physiology	15,000
Travel of faculty member	1,650
Advisor on graduate education in Thailand	15,332
Cooperative programs	
University Development Program Center, Bangkok	68,575
Visiting faculty (Universities in Bangkok)	54,126
Other support	
Fellowships, scholarships, and travel grants to individuals	278,246
TRINIDAD	
University of the West Indies	
Faculty of Agriculture	28,535
Cooperative program	
Trinidad Regional Virus Laboratory	139,640
Other support	
Travel grants to individuals	3,821
TURKEY	
Ministry of Health and Social Assistance	
School of Public Health	4,000
Robert College	
Training of Turkish personnel	70,482
University of Ankara	
Hacettepe Faculty of Medicine	62,883
Other support	
Fellowships and scholarships for individuals	11,031
UGANDA	
Commonwealth Institute of Biological Control	
Biological control station	5,532
East African Common Services Organization	
Sorghum research program	5,821
University of East Africa	
Appointment of a liaison officer	12,622
Committee on Special Lectureships	2,000
Africanization of staff	66,785

PAYMENTS 1966

UGANDA *(cont'd)*	
Makerere University College	
Appointment of a visiting lecturer in international relations	2,500
Support of graduate teaching assistants	8,388
Kasangati health center	36,630
Research on economic development problems of East Africa	59,300
Political science research at the East African Institute of Social Research	32,200
Development of the Master of Arts program in African Studies	87,917
Faculty of Agriculture	51,150
Individual study and research in the United States	5,147
Cooperative programs	
University Development Program Center, Entebbe	41,149
Visiting faculty (University of East Africa)	197
Other support	
Fellowships, scholarships, and travel grants to individuals	85,402
Miscellaneous	47
UNITED ARAB REPUBLIC	
Fellowships, scholarships, and travel grants to individuals	17,482
UNITED KINGDOM	
England	
Ditchley Foundation	
Conferences on the needs of developing countries	8,070
Institute of Development Studies, University of Sussex	
Research on agricultural economics in the Sudan	6,168
Institute for Strategic Studies	
Research on strategic problems in non-Atlantic areas	12,500
Study of modern warfare	5,000
National Institute for Medical Research	
Contribution toward fellowship operations	500
Rothamsted Experimental Station	
Contribution toward fellowship operations	1,000
Royal Institute of International Affairs	
Studies of Islamic society and the West	5,921
University of Cambridge	
Contribution toward fellowship operations	3,000
Research and writing on world history	(2,606)
Study of naval policy and strategy at Churchill College	420
University of London	
Contribution toward fellowship operations	14,500
Research on subsistence agriculture in Uganda in the School of Oriental and African Studies	4,459

PAYMENTS 1966

Bilharziasis research	24,935
Research in human genetics	857
Research by scholars from the Far East, the Middle East, and Africa in economics and political science	5,876
Publication of selected writings of Jeremy Bentham	7,904
University of Oxford	
Contribution toward fellowship operations	6,000
Visiting fellows and scientists at St. Catherine's College	24,244
Study of land and labor in Asia at St. Antony's College	15,000
Research, graduate training, and library acquisitions for Nuffield College	27,399
Research in contemporary Indian history at All Souls College	7,000
Victoria University of Manchester	
Contribution toward fellowship operations	2,000
Other support	
Fellowships, scholarships, and travel grants to individuals	18,290
Miscellaneous	(3)
Scotland	
University of Edinburgh	
Contribution toward fellowship operations	3,000
University of Glasgow	
Contribution toward fellowship operations	1,000
Study of Soviet agriculture	3,000
Other support	
Travel grants to individuals	1,300
Wales	
University College of North Wales	
Contribution toward fellowship operations	1,000
UNITED STATES	
Alabama	
Auburn University	
Contribution toward fellowship operations	1,000
Research on freshwater pond fish culture	102,000
Alaska	
University of Alaska	
Alaska Festival of Music	5,000
Studies of grass and legume species	7,364
Arizona	
Solar Energy Society	
General support	13,000
University of Arizona	
Research on water resources	22,139
Research on unified water, food, and power production in a coastal desert community	44,500

PAYMENTS 1966

UNITED STATES *(cont'd)*	
California	
California College of Medicine	
Development of a medical school	100,000
California Institute of Technology	
Teaching and research on the interrelationships of science, technology, and society	10,500
Center for Advanced Study in Behavioral Sciences	
Study of the United States House of Representatives	5,500
Frederic Burk Foundation for Education	
Contemporary music series	5,000
Mills College	
Activities of the center for the creative and performing arts	64,000
Occidental College	
Contribution toward fellowship operations	1,000
Discovery and support of talented minority group students	63,102
Pomona College	
Creative writing project	2,500
San Francisco State College	
Study in political philosophy	12,785
Stanford University	
Contribution toward fellowship operations	5,500
Establishment of a professional theatre and a program for the M.F.A. degree	100,000
Research on natural product chemistry	23,293
Activities of the School of Medicine	301,975
Study of the determinants of change in tropical African agriculture	25,605
University of California	
Berkeley	
Contribution toward fellowship operations	59,500
Appointment of a visiting professor at Thammasat University, Thailand	5,000
Comparative studies in Latin American demography	17,919
Activities of the Department of Economics	17,375
Activities of the Department of Political Science	35,373
Research on the fungus *Fusarium*	4,050
Research in international relations	(710)
Studies in protein-calorie malnutrition assessment	11,400
The university orchestra program with the Oakland Symphony Orchestra Association	17,514
Creative writing project	7,500
Davis	
Economic research on the food industry	2,500
Faculty assignment to the University of Concepción, Chile	15,000
Research in the Department of Agricultural Zoology	15,000
Study in animal husbandry	3,000

PAYMENTS 1966

Study of tropical agriculture	5,500
Training in agricultural economics	4,975
Riverside	
Support of a Mexican graduate student	2,000
Staff assignment to the Colombian Institute of Agriculture	15,000
Study of school desegregation	25,000
Support of the Dry-Lands Research Institute	427,188
University of San Francisco	
Research on Vatican diplomacy	1,500
University of Southern California	
Contribution toward fellowship operations	2,000
Completion of works on diplomatic history	1,000
Training for music critics	114,257
The university orchestra program with the Los Angeles Philharmonic Orchestra	20,000
Cooperative program	
Research in virology	32,835
Individual study in political science	4,726
Colorado	
Colorado State University	
Contribution toward fellowship operations	5,500
Estes Park Center for Research and Education	
Seminar on United States food policy in relation to world hunger	1,166
University of Colorado	
Contribution toward fellowship operations	3,000
University of Denver	
Assignment of social science scholars to universities abroad	20,650
Creative writing project	14,000
Connecticut	
Connecticut College	
Creative writing project	7,000
Summer school program for talented disadvantaged high school students	50,000
Hotchkiss School	
Summer school program for talented disadvantaged high school students	74,400
Sharon Creative Arts Foundation	
Young people's workshop	2,500
Wesleyan University	
Contribution toward fellowship operations	500
Attendance of college instructors at its Graduate Summer School for Teachers	25,000
Creative writing project	1,500
Yale University	
Contribution toward fellowship operations	9,500
Research and training program of the Yale Arbovirus Research Unit	153,000

PAYMENTS 1966

Yale University *(cont'd)*	
Analysis of the changing role of government in respect to disadvantaged citizens	10,000
Program for completion of scholarly works by senior faculty members	65,450
Research on the General Agreement on Tariffs and Trade	5,000
Research on problems of conflict, consensus, and pluralistic democracy	3,559
Research on the history of the British Parliament	1,737
Support of the School of Drama	140,500
Study on American diplomacy at the Paris Peace Conference	2,500
Training in virology	10,000
Transitional year program for talented disadvantaged high school graduates	80,000
Travel in connection with a history of Germany	600
District of Columbia	
American Institute of Biological Sciences	
Support of its program	30,000
American University	
Seminars for junior diplomats	5,012
Association of State Universities and Land-Grant Colleges	
Coordination of programs for rural development in foreign countries	10,453
Catholic University of America	
Contribution toward fellowship operations	3,000
Folger Shakespeare Library	
Creative writing project	3,000
Georgetown University	
Contribution toward fellowship operations	2,000
George Washington University	
Contribution toward fellowship operations	500
Bibliography on sorghum and millet, and bibliographic training	15,185
National Academy of Sciences	
Travel expenses of a Philippine scientist	1,112
National Research Council	
Genetics study in Japan	(3,310)
Research on protein-rich foods	(3,482)
Overseas Education Fund of the League of Women Voters	
Citizenship education for women from Latin American countries	10,000
Pan American Development Foundation	
Distribution of equipment	15,000
Seminars in conservation	15,000
Permanent Committee for the Oliver Wendell Holmes Devise	
History of the Supreme Court	3,600
Population Reference Bureau	
Latin American educational program	30,000

PAYMENTS 1966

Smithsonian Institution	
Virus research in Belém, Brazil	(430)
Walden School	
General support	15,000
Washington Drama Society	
Training for the Arena Stage company	24,047
Florida	
Central Florida Junior College	
Appointment of a library consultant at Chulalongkorn University, Thailand	259
Stetson University	
Florida Music Festival Institute	7,000
University of Florida	
Contribution toward fellowship operations	9,500
Assignment of scholars to universities abroad	30,098
Exchange program of nurses and doctors with the University of Valle	15,000
Georgia	
Atlanta University	
General development	100,000
Development of the library	25,000
Support of the School of Library Service	38,164
Emory University	
Student assistance program	30,600
Mercer University	
Discovery and support of talented minority group students	7,500
Morehouse College	
Study programs for talented high school students	73,993
Southern Education Foundation	
Individual scholarship for doctoral studies	4,000
Southern Regional Council	
General support	50,000
Toward expenses of a White House Conference	10,000
University of Georgia	
Contribution toward fellowship operations	1,000
Hawaii	
Oceanic Foundation	
Fish culture research	123,100
University of Hawaii	
Contribution toward fellowship operations	2,000
Seminar on library education	10,000

PAYMENTS 1966

UNITED STATES *(cont'd)*

Illinois

American Library Association	
Library science program at the University of the Philippines	(1,492)
English edition of *Guide to Japanese Reference Books*	(532)
Association of American Medical Colleges	
Support of the Division of International Medical Education	25,000
Establishment of a secretariat for the Pan-American Federation of Associations of Medical Schools	15,000
Institute on International Medical Education	7,500
Northwestern University	
Contribution toward fellowship operations	3,500
University of Chicago	
Contribution toward fellowship operations	15,500
Research on international water resources in Africa	25,379
Research on economic effects of national agricultural policies	17,500
Research in the Center for the Study of American Foreign and Military Policy	13,500
Research in the Middle East and North Africa on problems of modernization	12,500
Expenses of Argentine economists at the National University of Cuyo	(5,660)
Research in Arabic literature	11,500
Research on American penal policy	(4,765)
Study of the relation of international trade to economic development	3,363
Editing of the papers of James Madison	16,618
Conference on the liberal arts	5,000
Program of economic research	1,262
Section of Nuclear Medicine	46,031
Program to foster the composition and performance of contemporary music	66,000
The university orchestra program with the Chicago Symphony Orchestra	27,500
Experimental production by the Goodman Memorial Theatre	15,000
University of Illinois	
Contribution toward fellowship operations	12,500
Travel costs of staff members	10,500

Indiana

Butler University	
Performances by the Strolling Players	1,750
Earlham College	
Reinforcement program for new students	10,000
Indiana University	
Contribution toward fellowship operations	3,500
Support of the Latin-American Music Center	18,664
Indiana University Foundation	
Study of the Nazi economy	13,000

PAYMENTS 1966

Purdue University	
Contribution toward fellowship operations	23,000
Plant collection in Brazil	10,000
University of Notre Dame	
Research on contemporary diplomacy	5,000
Iowa	
Grinnell College	
Discovery and support of talented minority group students	86,246
Iowa State University	
Contribution toward fellowship operations	17,500
University of Iowa	
Contribution toward fellowship operations	1,000
Program in contemporary music	28,800
Kansas	
Kansas State University	
Contribution toward fellowship operations	7,000
Kansas State University Endowment Association	
Germplasm evaluation	10,582
Kentucky	
University of Kentucky	
Contribution toward fellowship operations	1,000
Louisiana	
Free Southern Theater	
Performances in the Mississippi River delta area	14,840
Louisiana State University	
Contribution toward fellowship operations	2,000
Tulane University of Louisiana	
Contribution toward fellowship operations	3,000
Latin American legal and social sciences research and training	11,000
Research in amino-acid analysis	25,000
Support of the *Tulane Drama Review*	30,566
Student assistance program	35,491
Maryland	
Goucher College	
The college orchestra program with the Baltimore Symphony Orchestra	19,500
Johns Hopkins University	
Contribution toward fellowship operations	4,000
Research in the School of Advanced International Studies	34,801
Seminars for young diplomats	5,000
Study of irrigation techniques	(796)
Study of obstetrical care by nurse-midwives and interns	17,375

PAYMENTS 1966

UNITED STATES *(cont'd)*

University of Maryland	
Contribution toward fellowship operations	1,000
Massachusetts	
Amherst College	
Contribution toward fellowship operations	1,000
Boston University	
Contribution toward fellowship operations	4,000
Consultations on research in medical care	(112)
To enable a faculty member to visit African studies centers in Europe	4,000
Brandeis University	
Opera performances for students	21,800
Educational Services Incorporated	
Experimental summer institutes in mathematics and biology	(5,458)
Harvard University	
Contribution toward fellowship operations	19,000
Research on social and political development in the new nations	35,306
Visiting fellowships in international affairs	48,000
Economic research on input-output techniques	50,000
International legal studies and advanced training for Africans	13,371
Fellowship program in the Institute of Politics	200,000
Study on the origins of representative government	8,900
Research on the biology of the corn plant	4,437
Toward construction of a building to include schistosomiasis laboratories	750,000
Center for Population Studies	5,800
Study in family planning in Santiago, Chile	7,985
Cultural exchange between the United States and the Union of Soviet Socialist Republics	(200)
Special program in the Law School for Negro college students	41,690
Massachusetts Institute of Technology	
Contribution toward fellowship operations	3,000
Expenses of a visiting investigator	(698)
Mount Holyoke College	
Experimental summer school program for talented disadvantaged high school students	50,000
Smith College	
Creative writing project	10,000
Theatre Company of Boston	
Presentation of new plays	10,000
Tufts University	
Faculty assignment in economics at the University of Chile	12,450
Faculty assignment in American history at the University of Chile	12,450
University of Massachusetts	
Contribution toward fellowship operations	2,500

PAYMENTS 1966

Wellesley College	
Study of Indian diplomacy	17,000
Williams College	
Contribution toward fellowship operations	1,000
Program in music education and performance	7,000
Michigan	
Michigan State University	
Contribution toward fellowship operations	12,500
Economic research program	(867)
Research on the impact of the European Economic Community on Israel's economy	2,800
Oakland University	
The university orchestra program with the Detroit Symphony Orchestra	20,000
To invite Latin American conductors to a music festival	7,500
University of Michigan	
Contribution toward fellowship operations	6,500
Faculty assignment in economics at the University College, Nairobi	10,625
Study of campaign financing	15,000
Teaching of population matters in professional schools	15,000
Comparative analysis of legislative representation in Britain and the United States	3,070
Wayne State University	
Contribution toward fellowship operations	3,500
Cooperative program in nursing education	11,000
Minnesota	
Carleton College	
Discovery and support of talented minority group students	54,845
Minnesota Theatre Company Foundation	
Training for teachers of voice for theatre	32,574
St. Olaf College	
Contribution toward fellowship operations	1,000
Appointment of a visiting professor at the University of the Philippines	191
University of Minnesota	
Contribution toward fellowship operations	5,500
Advanced creative work in the theatre	68,925
High school musicians' workshop	13,000
Visiting faculty appointment at the National University of Colombia	(645)
Mississippi	
Gulf Coast Research Laboratory	
Estuarine ponds studies	15,000
Millsaps College	
Creative writing project	12,000
Mississippi State University	
Contribution toward fellowship operations	3,500

PAYMENTS 1966

UNITED STATES *(cont'd)*	
University of Mississippi	
Creative writing project	5,000
Missouri	
University of Missouri	
Contribution toward fellowship operations	2,000
Washington University	
Contribution toward fellowship operations	2,000
Program in urban design	(1,757)
Work-study program for high school graduates	30,400
Nebraska	
University of Nebraska	
Contribution toward fellowship operations	6,000
Plant pathology research in Colombia	2,718
Research in corn genetics	5,757
Research on sorghum improvement	126,000
New Hampshire	
Dartmouth College	
Experimental summer school program for talented disadvantaged high school students	50,000
Phillips Exeter Academy	
Special urban program in the summer school	21,269
University of New Hampshire	
Creative writing project	5,000
New Jersey	
Princeton University	
Contribution toward fellowship operations	5,500
Assignment of scholars to universities abroad	43,782
Princeton Cooperative Schools Program	84,730
Research in the Center of International Studies	25,000
John Foster Dulles Oral History Project	20,000
Office of Population Research	14,000
Studies of political and economic development in Asia	12,500
Faculty appointment to the Woodrow Wilson School of Public and International Affairs	5,000
Library collection on the American Negro	19,500
Political science research on the Sudan	4,500
Biography of Sir Mark Aurel Stein	2,000
Faculty appointment to the University of Ibadan	15,000
Study of charismatic leadership in the new states	6,475
Rutgers, the State University	
Contribution toward fellowship operations	1,000
Establishment of the Contemporary Chamber Ensemble as a group-in-residence	146,350

PAYMENTS 1966

Woodrow Wilson National Fellowship Foundation	
Teaching internship program	241,270
New Mexico	
Opera Association of New Mexico	
Apprentice program for singers	15,000
University of New Mexico	
Creative writing projects	15,050
New York	
Academy of American Poets	
Poetry program for New York public schools	10,000
Actors Studio	
Experimental work and training	12,000
Albarwild Theatre Arts	
Playwright training and production of new plays	112,500
American Academy of Dramatic Arts	
Contribution toward fellowship operations	1,000
American Dance Theater	
Establishment of a permanent company	1,000
American Place Theatre	
Support of its activities	77,745
Asia Society	
Country councils program	24,500
Ballet Theatre Foundation	
General support	25,000
Brooklyn College of the City University of New York	
College talent search project	33,750
Travel for delegates at the Twelfth International Theater Institute Congress	14,750
Carnegie Endowment for International Peace	
Training program for foreign service officers	320,067
Cold Spring Harbor Laboratory of Quantitative Biology	
Biological research program	17,000
Columbia University	
Contribution toward fellowship operations	8,500
Research by the Institute of Nutrition Sciences	7,499
Research in constitutional democracy	(4,000)
Research on the modern law of treaties	10,000
Research on the physiology of reproduction	12,500
Survey on environmental pollution	25,000
Study of Indonesian economic development	8,850
Study of political accommodation between the great powers	(663)
Study of Sino-Russian relations	3,700
Advanced science writing program	62,495

PAYMENTS 1966

Columbia University *(cont'd)*	
Ecological research	(600)
Faculty appointments to the University of Ibadan	(935)
Graduate School of Library Service	(556)
Musical composition	12,000
Study of the Urban Corps of the City of New York	6,000
Training program of the American Press Institute	12,023
Research in the Russian Institute	25,000
Research on international organizations in the School of International Affairs	15,260
Training of Indonesian librarians	2,444
Creative writing project	1,815
Cornell University	
Contribution toward fellowship operations	28,000
Conference on international education	25,000
Research in biochemistry	116
Social science research	30,000
Symposia on finer anatomy	(2,442)
Educational Broadcasting Corporation	
Program development	250,000
Encyclopaedia of the Social Sciences	(4,232)
Fordham University	
Contribution toward fellowship operations	1,000
Hunter College	
Compensatory education program	14,929
Institute of International Education	
International student exchange and services	50,000
International Planned Parenthood Federation — Western Hemisphere Region	
Conference in Santiago, Chile	25,000
Juilliard School of Music	
Contribution toward fellowship operations	1,000
Martha Graham Foundation for Contemporary Dance	
Preparation of a tour	25,000
Mount Sinai School of Medicine	
Research on motivation for family planning	24,950
National Health Council	
Study of uniform accounting and reporting with the National Social Welfare Assembly	40,000
National Repertory Theatre Foundation	
Development of community support and educational programs	25,000
National Urban League	
Leadership development program	150,000

PAYMENTS 1966

New School for Social Research	
Contribution toward fellowship operations	1,000
New York Public Library	
Performances by the Composers Forum	12,900
New York State Historical Association	
Preparation of a book by Raymond B. Fosdick	7,000
New York University	
Contribution toward fellowship operations	1,000
Completion of *A Critical and Historical Corpus of Florentine Painting*	7,500
Research on the process of multilateral diplomacy	8,800
Research on radiation hazards	34,146
New York Zoological Society	
Research and scientific equipment	25,000
Phelps-Stokes Fund	
Support of its publication, *Negro Facts and Figures*	25,000
Philharmonic-Symphony Society of New York	
Composer-in-residence	7,500
Planned Parenthood Federation of America	
Survey of family planning curricula	15,000
Population Council	
Fellowship program for technical assistance personnel	70,000
International study of postpartum family planning	175,000
Research Foundation of the State University of New York	
Contribution toward fellowship operations	3,000
Robert R. Moton Memorial Foundation	
Development of its conference center	25,000
Rockefeller University	
Contribution toward fellowship operations	2,000
Sarah Lawrence College	
Establishment of the Aeolian Chamber Players as a group-in-residence	33,050
Syracuse University	
Contribution toward fellowship operations	2,000
Theater Incorporated	
Training program	20,828
Theater in the Street	
Performances in disadvantaged neighborhoods	14,540
University of Buffalo Foundation	
The university orchestra program with the Buffalo Philharmonic Orchestra Society	30,000
University of Rochester	
Contributions toward fellowship operations	3,500

PAYMENTS 1966

UNITED STATES *(cont'd)*	
Volunteers for International Technical Assistance	
General support	26,500
Yeshiva University	
Contribution toward fellowship operations	1,000
Study of training and utilization of health personnel for underdeveloped countries	1,420
Planning Academic and Research Library Buildings, by Dr. Keyes D. Metcalf	
Purchase and distribution of 175 copies to Foundation-supported libraries	1,691
Consultants for the creative writing program	5,436
Cooperative programs—incidental support	
Faculty development in selected colleges	1,949
Research in virology	28,838
Rockefeller Archives and Research Center	
Plan for construction, management, and financing	2,389
Rockefeller Foundation—New York Office	
Administrative services	2,230,288
Medical and Natural Sciences	398,483
Agricultural Sciences	408,026
Humanities and Social Sciences	380,938
Arts	152,947
Inter-Program	884,094
Retirement plan past service liability	958,326
North Carolina	
Arts Councils of America	
General support	7,500
Duke University	
Contribution toward fellowship operations	1,500
Studies in forest hydrology	5,555
Study of African wildlife management	3,668
Study of differential fertility and population growth	8,000
Research in international relations	(556)
University of North Carolina	
Chapel Hill	
Support of the Department of Medicine	(4,415)
Development of a family planning unit	47,500
Educational materials on population and computerized information service	99,000
Raleigh	
Contribution toward fellowship operations	19,000
Research on maize genetics	13,618
North Dakota	
North Dakota State University	
Contribution toward fellowship operations	8,000

PAYMENTS 1966

Ohio	
Antioch College	
Discovery and support of talented minority group students	79,962
Cleveland Institute of Music	
University Circle Contemporary Chamber Music Ensemble	15,500
Musical Arts Association	
Composer-in-residence with the Cleveland Orchestra	8,000
Oberlin College	
Transitional year for graduate school preparation	6,000
Summer school program for talented disadvantaged high school students	28,320
Discovery and support of talented minority group students	73,000
Ohio State University	
Contribution toward fellowship operations	7,000
Plant pathology research	(162)
University of Cincinnati	
Experimental program in theatre	23,200
The university orchestra program with the Cincinnati Symphony Orchestra	17,787
Western Reserve Academy	
Contribution toward fellowship operations	1,000
Summer program demonstration project	5,275
Teaching and research program in population	7,000
Study of civil-military relations in the Federal Republic of Germany and in Israel	8,700
Oklahoma	
Oklahoma State University	
Contribution toward fellowship operations	4,500
Research by the Department of Animal Science	12,000
Oregon	
Oregon State University	
Contribution toward fellowship operations	5,500
To enable a faculty member to teach at Miles College, Birmingham, Alabama	1,633
Reed College	
Establishment of a humanities research center	116,112
Discovery and support of talented minority group students	44,528
Pennsylvania	
American Friends Service Committee	
Overseas family planning programs	47,910
American Wind Symphony Orchestra	
Services of a professional administrator	15,000
Carnegie Institute of Technology	
Training in theatre	160,000
Friends Neighborhood Guild	
Counseling and assistance for youth in disadvantaged neighborhoods	30,000

PAYMENTS 1966

UNITED STATES *(cont'd)*

Haverford College	
Cooperative undergraduate teaching program in African studies with Lincoln University	15,000
Post-baccalaureate program	132,500
Jefferson Medical College	
Contribution toward fellowship operations	1,000
La Salle College	
Creative writing project	8,650
Lincoln University	
Appointment of a writer-in-residence	7,500
Discovery and support of talented disadvantaged students	30,000
Educational reinforcement for freshmen	68,500
Pennsylvania State University	
Fruit tree research in Argentina	(1,196)
Research on goals of disadvantaged youth	15,000
Pittsburgh Playhouse School of the Theater	
Preparation of theatre materials	14,850
University of Pennsylvania	
Contribution toward fellowship operations	2,500
Study of Argentine nationalism	(1,304)
Creative writing project	8,000
Research on the Korean Communist movement	8,000
University of Pittsburgh	
Contribution toward fellowship operations	2,500
Research and training in radiation health	39,172
Villanova University	
Playwright training	8,200
Rhode Island	
Brown University	
Preparation of a course on standard English	81,941
Improvement of the teaching of English in the United Arab Republic	64,869
Foundation for Repertory Theater of Rhode Island	
Performances for high school students	15,000
South Dakota	
Augustana College	
Study of the United States frontier	9,000
Tennessee	
Fisk University	
Faculty appointments	78,316
General development	6,447
Pre-college program	10,000

PAYMENTS 1966

George Peabody College for Teachers	
Contribution toward fellowship operations	1,000
Knoxville College	
Southeastern regional summer study-skills program	11,400
Southwestern at Memphis	
Summer youth theatre project	17,977
University of Tennessee	
Exchange program with the Faculty of Medicine of the University of Valle, Colombia	25,526
Creative writing project	5,000
Vanderbilt University	
Contribution toward fellowship operations	1,000
Student assistance program	62,000
Graduate training program in economics and business administration	57,891
Texas	
Dallas Symphony Orchestra	
Performance of new works	19,813
Composer-in-residence	9,450
Rice University	
Faculty assignment in economics at the University College, Nairobi	10,533
Southern Methodist University	
Research on production functions and income distribution in agriculture and industry	8,000
Texas A & M University	
Contribution toward fellowship operations	11,500
Research on feral oats	4,000
Studies in nutrition of ruminant animals	1,784
Study of artificial insemination of ranch cattle in Mexico	1,200
University of Texas	
Contribution toward fellowship operations	2,000
Individual study in philosophy	5,000
Research in the Institute of Latin American Studies	15,000
Participation in an English language teaching program at the University of Valle, Colombia	(2,308)
Utah	
University of Utah	
Program in modern dance	6,925
Appointment of a visiting professor at the University of Ibadan, Nigeria	(571)
Modern dance repertory company	110,452
Utah State University	
Contribution toward fellowship operations	2,000
Vermont	
Windham College	
Creative writing project	7,200

PAYMENTS 1966

UNITED STATES *(cont'd)*	
Virginia	
Virginia Polytechnic Institute	
Contribution toward fellowship operations	6,000
Discovery and support of talented minority group students	13,000
Washington	
Seattle Symphony Orchestra	
Composer-in-residence	8,850
University of Washington	
Contribution toward fellowship operations	3,500
Study of the interstate relations of Indochina	12,400
Washington State University	
Contribution toward fellowship operations	3,000
Western Washington State College	
Educational program for disadvantaged junior high school students	49,850
West Virginia	
West Virginia University Foundation	
Information system for the East African Agriculture and Forestry Research Organization	2,374
Wisconsin	
Marquette University	
Contribution toward fellowship operations	1,500
University of Wisconsin	
Contribution toward fellowship operations	27,000
Potato research program	7,800
African appointments	64,198
Research in the Department of Plant Pathology	11,484
Travel for a visiting scientist	2,000
Conference on pathogenesis and metabolism in plants	(3,752)
Research on the biology of wild animals in East Africa	10,000
Program in international theatre	4,000
United States—general	
Fellowships, scholarships, and travel grants to individuals	101,203
Support of work in the creative arts	67,382
Net payments to U. S. institutions, less than $100	(278)
URUGUAY	
Research Institute of Biological Sciences	
Fellowships and research equipment	2,577
University of the Republic	
Research in obstetrical physiology	1,751
Other support	
Fellowships and scholarships for individuals	6,260

PAYMENTS 1966

VENEZUELA	
National Organization for Agricultural Research	
Maize improvement project	3,402
VIETNAM	
Fellowships and scholarships for individuals	5,655
TOTAL—1966 Net Payments	**$34,893,371**

SUMMARY OF FUNDS APPROPRIATED 1966

1966 APPROPRIATIONS AND ALLOCATIONS (pp. 131-170)	$31,541,265	
LESS ALLOCATIONS AND GRANTS IN AID FROM PRIOR YEAR APPROPRIATIONS INCLUDED ABOVE	7,998,790	$23,542,475
ADDITIONAL 1966 APPROPRIATIONS FOR LATER ALLOCATION BY EXECUTIVE COMMITTEE OR OFFICERS		8,440,074
GRANTS IN AID (1967)		1,898,000
FELLOWSHIPS AND SCHOLARSHIPS (1967)		3,295,000
NEW YORK BUDGETS (1967)		
MEDICAL AND NATURAL SCIENCES	380,695	
AGRICULTURAL SCIENCES	421,813	
HUMANITIES AND SOCIAL SCIENCES	440,133	
ARTS	171,172	
INTER-PROGRAM	918,614	
ADMINISTRATION	2,335,523	4,667,950
TOTAL APPROPRIATIONS, 1966		$41,843,499

INDEX

INDEX