

**PRESIDENT'S
TEN-YEAR REVIEW &
ANNUAL REPORT 1971
THE ROCKEFELLER FOUNDATION**

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³ Beginning December 1971.

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¹ Retired June 1971.

² Beginning July 1971.

³ To take office July 1, 1972.

⁴ Beginning February 1971.

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¹ Through January 1971.

² Beginning April 1971.

³ Beginning September 1971.

⁴ Temporary appointment completed.

⁵ Beginning February 1971.

⁶ Beginning May 1971.

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¹ Retired June 1971.

² Temporary appointment completed.

³ Beginning August 1971.

⁴ Resigned May 1971.

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¹ Resigned December 1971.

² Through August 1971.

³ Through November 1971.

⁴ Temporary appointment completed.

⁵ Through January 1971.

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¹ Temporary appointment completed.

² Beginning December 1971.

³ Beginning September 1971.

⁴ Through July 1971.

⁵ On assignment in California.

⁶ Beginning October 1971.

⁷ Beginning August 1971.

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¹ Resigned October 1971.

² On leave of absence.

³ Temporary appointment completed.

⁴ On assignment in Ceylon.

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¹ Temporary appointment completed.

² Beginning February 1971.

³ Resigned June 1971.

⁴ Beginning July 1971.

⁵ Resigned August 1971.

⁶ Beginning June 1971.

⁷ On assignment at the University of Minnesota beginning September 1971.

⁸ Beginning September 1971.

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¹ Through July 1971.

² Through August 1971.

³ Beginning September 1971.

⁴ Beginning October 1971.

⁵ Beginning August 1971.

⁶ Retired September 1971.

⁷ Beginning November 1971.

⁸ Beginning February 1971.

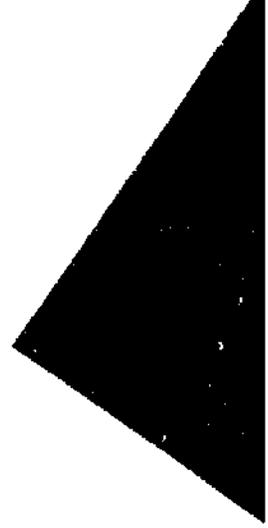
⁹ On leave of absence.

¹⁰ Beginning March 1971.

A NOTE CONCERNING THE ILLUSTRATIONS

The President's Ten-Year Review is illustrated with portraits of a few of the many men and women who have devoted themselves during the past decade to promoting the well-being of mankind in areas also of interest to the Foundation.

THE OFFICERS



PRESIDENT'S TEN-YEAR REVIEW

J. George Harrar, a biologist by training, has led The Rockefeller Foundation through the sixties in its effort to come to grips with such fundamental, world-wide problems as hunger, ill-health, and inequality.



Photograph Excised Here

INTRODUCTION

In other years it has been the custom for the Foundation's presidents to open the annual report with a summary of work performed or a report on a subject of timely importance. This year the Foundation's officers are depriving their President of these pages: J. G. Harrar, who has headed The Rockefeller Foundation since 1961, will retire on July 1, 1972.

The decade of Dr. Harrar's presidency coincided with one of the most turbulent in American history. Within the limits of self-analysis, this brief report will seek to articulate the main thrusts of the Foundation's programs during that decade and the rationale for their selection over other possibilities. It will touch on disappointments as well as successes, realized or potential. Hopefully, inquiring readers will get some answers as to how the climate of the sixties influenced the Foundation's decisions and what impact the Foundation, under the leadership of a remarkable man, has had on these times.

George Harrar was born in Painesville, Ohio. He was educated at Oberlin, and trained as a biologist at Iowa State and the University of Minnesota, where he received the Ph.D. In 1943, in the middle of a highly successful career in university teaching, he was asked by The Rockefeller Foundation to apply scientific techniques to drastically raise the quantity and quality of food production in Mexico—then a have-not nation on our own border. Over the span of the 10 years that he lived in Mexico, he became the chief architect of what has since become known as the Green Revolution. As modern agriculture took hold dramatically in many parts of the world, Dr. Harrar assumed increasing responsibilities for other interests of the Foundation; in 1961 he took over the presidency from Dean Rusk.

HARRAR'S INHERITANCE

The Rockefeller Foundation was founded in 1913, endowed with substantial funds, and given as its concern the well-being of mankind throughout the world. No charter was ever simpler, no goal more ambitious. Its early days were devoted, with considerable success, to achieving control over great endemic diseases such as yellow fever and malaria. In the process the Foundation was instrumental in developing public health services as we know them today and in founding 22 public health schools in the United States and abroad. Its world-wide experience in disease control convinced the Foundation (somewhat reluctantly) that much basic research still needed to be done in the social as well as the hard sciences before health levels could be raised significantly. In the thirties, therefore, the Foundation pioneered the support of the then-fledgling life sciences. These fields of inquiry were concerned with little-understood basic physiological processes from which many years

later came the spectacular advances in such disciplines as biochemistry, molecular biology, and human genetics.

At the same time the Foundation supported much valuable work in international relations, political science, and economics in universities in this country and Europe.

With the presidency of Dean Rusk (1952-1961), the Foundation began to withdraw from the support of science and scholarship in Europe's great centers of learning, now well funded from other sources. Instead, it increasingly supported the application of knowledge to the overwhelming problems of newly emerging nations in Latin America, Africa, and Southeast Asia. By the time George Harrar assumed the presidency, the Foundation was firmly committed to work in the developing world where the needs of men were greatest, but it had not yet fully restructured its resources to focus on some of the key problems.

The Foundation, chartered almost a half-century before, still maintained its traditional academic character. A relatively decentralized organization, its divisions, structured along academic lines—Medical and Natural Sciences, Humanities, Social Sciences, Agricultural Sciences—exercised considerable autonomy. By and large, divisional officers, all highly trained specialists, saw their function as advancing the state of knowledge in their own disciplines by supporting the best work of the best men. Harrar, himself an academician for most of his professional life, was deeply committed to the scientific or scholarly approach to the world's complexities. But with a brilliant record of accomplishment in the field, he quickly made it clear that the Foundation now expected to see tangible results. With the exception of the program of the International Health Division, The Rockefeller Foundation had a long history of supporting science and scholarship for their own sakes; now it opted for the application of already-existing knowledge toward the well-being of mankind throughout the world. Harrar, in short, moved the Foundation from the library and laboratory into the fields and streets.

NEW PROGRAMS

In September of 1963 the Trustees adopted a short document, subsequently made public, which set forth five major goals to which the Foundation's resources would be devoted for the foreseeable future. These were, in the developing world, the overcoming of hunger and malnutrition, and the stimulation of a number of potentially strong universities. The stabilization of populations was to be emphasized here and abroad, and domestic goals were, in addition, the achievement of equal opportunity for all and the development of the nation's cultural resources. Subsequently, efforts toward the improvement of the quality of the environment in this country were begun. They

became a full-scale Foundation program in 1969. Currently, experience gained in the delivery of health care in some of the developing nations is being adapted on an experimental basis in the United States. If results justify, this endeavor might become a full-scale program.

In pursuit of these goals, the Foundation has taken two main approaches: grant making and staff support. In its overseas efforts dedicated to agricultural progress and development of universities, it has sent its own professional staff of agricultural, social, and medical scientists into the field. The Mexican Agricultural Program, headed for years by Dr. Harrar, is one of the best known and most successful of such overseas efforts; another is the Indian Agricultural Program, which was instrumental in introducing on the Asian subcontinent the so-called Green-Revolution wheats bred in Mexico. These overseas operating programs receive grants from the Foundation for special projects, as do the independent agricultural research institutes where a number of Foundation staff members are posted.

For its population work overseas and at home, as well as for its three major domestic programs, the Foundation has relied almost exclusively on making grants for projects carried out by other organizations, chiefly universities, but including school systems, community organizations, and cultural institutions. In the seventies the Foundation expects to modify this policy and make staff appointments in some of its programs within the United States. Three staff members are already working in the field in the program concerned with environmental quality, and field consultants are a part of the equal opportunity effort; this approach may soon be extended to other areas where it seems opportune.

PRIORITIES OF THE SIXTIES

These ambitious undertakings at home and abroad have constituted the Foundation's program during the past decade. Although obviously of fundamental importance to the well-being of mankind, by what reasoning were they selected over other objectives of perhaps equal significance?

John D. Rockefeller 3rd was among the first, some 40 years ago, to alert the world to the consequences of unchecked population growth. In 1952 he founded the Population Council and currently serves as chairman of the President's Commission on Population Growth and the American Future.



Photograph Excised Here

The decision to focus on the developing world was made because there the sum total of human needs is very great. Since the majority of the people of these countries live on the land, and since periodic famine and chronic malnutrition are endemic among them, massive increases in food production were judged to be an absolute necessity. The short supply of men and women trained to participate in the development of their own countries was another: hence the University Development Program. Finally, the fact that hard-won social and economic gains are being cancelled by runaway population increases clearly mandates efforts to stabilize populations.

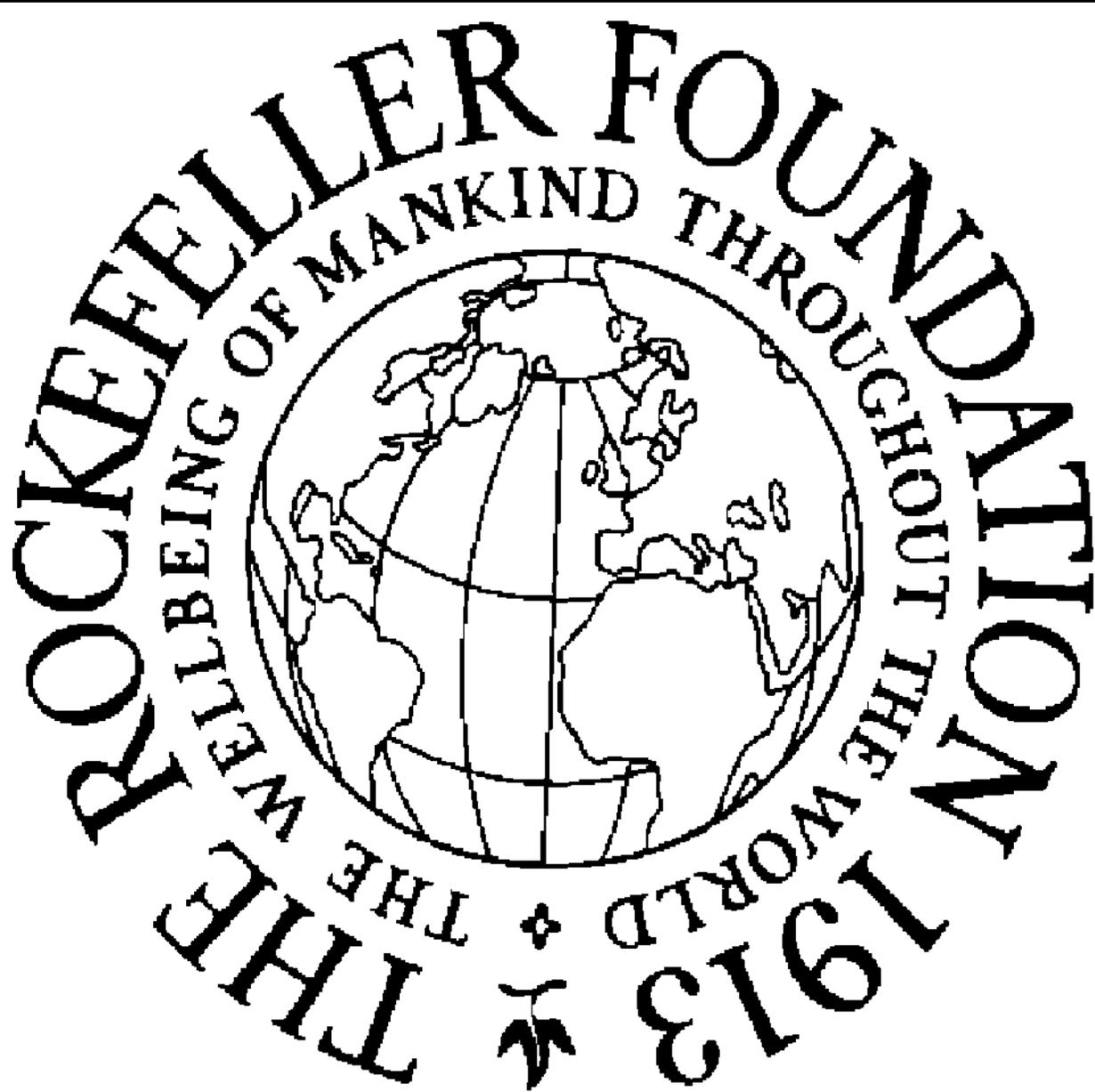
The decision to help minority groups achieve equality with the white majority mirrored the national consensus. The Foundation believed that its long experience might help to clarify a national effort clouded by tension and bewilderment. Systematic support for the performing arts may seem harder to justify. Three arguments prevailed over the doubt that culture is more than the frosting on the cake. First, during the sixties the arts explosively came to life in America. Secondly, as had been true of the sciences 30 years earlier, government offered virtually no support to art or artists and available private funds were very modest—only 2 or 3 percent of all private giving. Finally, man can probably live by bread alone, but it is not a good life.

OTHER CANDIDATES

In retrospect, the Foundation considers these choices sound but not inevitable. The program to help improve the quality of the environment was adopted later than might have been desired, given growing national needs and evolving public opinion. The reason is not hard to discover: the Foundation was already committed to five fundamental areas of human welfare; a sixth, or a seventh, could strain existing resources or result in a cumbersome organization. These fears, however, have not materialized.

Many other additions to program have been discussed over the years—too many to describe here. Among those with eloquent advocates have been

Ralph J. Bunche was until shortly before his recent death Under Secretary General of the United Nations. He was also a Trustee of this Foundation for 15 years. Truly a citizen of the world, he fought hard to overcome hate and intolerance, racial and religious bigotry without ever losing his belief in the essential goodness of his fellow men.



Photograph Excised Here

war and peace studies, scholarship in legal and political philosophy, the restructuring of education, drug abuse, and problems of unemployment.

A NEW APPROACH

With the adoption of goal-oriented programs, in which each component was related to every other in an ecological pattern, it became obvious that the Foundation's traditional method of operating along autonomous disciplinary lines was no longer the most effective. Harrar's clearly defined objectives—his insistence on making a measurable contribution toward bettering the human condition—called for the concerted effort of many professional skills to illuminate and help solve complex problems. A joint effort, an interdisciplinary approach, synergistic in its results, was called for. More and more over the past 10 years, the professional staff has worked in teams, aware, for example, that in family planning motivational factors are as important as effective contraceptives, or that the social and economic side effects of high-technology agriculture are important factors in the food production equation.

In retrospect the logic of setting upon intricate problems in this manner seems foreordained; in point of fact this blending of expertise to produce an effect greater than the sum of its parts was a novel, and not altogether easy, departure for the Foundation. The credit for achieving and maintaining a highly organized, truly interdisciplinary approach belongs to George Harrar.

THE WORLD OUTSIDE: FOUNDATIONS IN THE SIXTIES

Dr. Harrar's results-oriented administration has given the Foundation one of its triumphs: the recognition of its major role in progress toward the conquest of hunger and malnutrition. The Green Revolution is surely one of the relatively few instances in history where a handful of men are overcoming the age-old sufferings of millions. But this same decade showed that 50 years of quietly effective work did not win the Foundation immunity from restraint aimed at foundations that were abusing the charitable rights.

Carlos P. Romulo, now Foreign Secretary of the Philippines, was president of the University of the Philippines from 1962 to 1968. Soon after his appointment, he invited the Foundation to participate in the development of the university, a ten-year association that has produced an institution of recognized academic distinction and useful service to its country and to Southeast Asia.



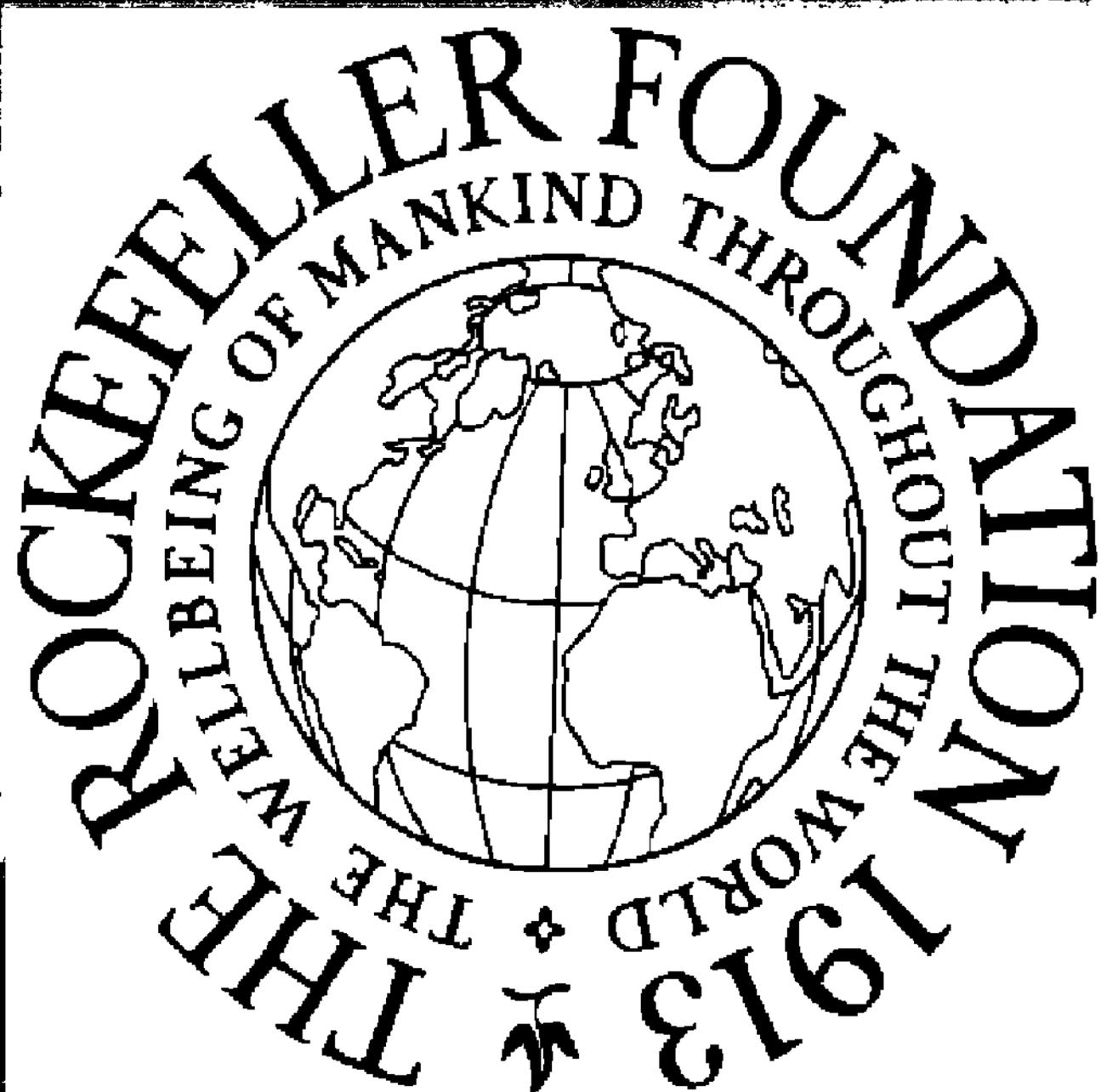
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In the Tax Reform Act of 1969 Congress did not hesitate to cover many strange bedfellows with the same legislative blanket. The resulting taxation of and the restrictions on foundations can be ascribed to a good many factors, of which the crisis of confidence in all of America's institutions—educational, corporate, governmental, philanthropic—is probably the most important.

But, as Douglas Dillon, Secretary of the Treasury from 1960 to 1965 and now Chairman of the Foundation's Board, recently pointed out, it must be admitted that some of the responsibility for hostile legislation lies with the foundations themselves. "It seemed to me," Mr. Dillon said, "that the large foundations, none of which was involved in these excesses, should have taken a forthcoming attitude. They should have worked with the Congress and the Executive Branch to develop legislation that would have outlawed the relatively infrequent misuse of foundations while encouraging the great majority whose sole purpose is to serve the public welfare. But this point of view was not accepted. Feeling secure in the knowledge of their good intentions, the major foundations generally took the position that no federal remedial legislation was needed and that everything could and should be handled by stronger enforcement of existing state laws, laws that had obviously failed to do the job. The result was that while federal legislation was delayed for a few years, its final form was much harsher on all foundations, including those with unblemished records, than would have been the case otherwise."

There is much truth in Dillon's remarks. Harrar on a number of public occasions regretted the foundation community's sense of obligation to hide its light under a bushel. On assuming the presidency, he tried to overcome the traditional distaste for clear and widespread communication. Extensive reporting of The Rockefeller Foundation's aims and work by various means and through various media became a hallmark of his administration. But the Foundation may have entered the marketplace of public opinion too late. Foundations as a whole had forgotten that there will always be a burden on them to render a continuous—and intelligible—accounting of their performance to the public they profess to serve, an obligation to show a

Whitney Young, Jr., was, until his untimely death in early 1971, perhaps the most vigorous and effective leader in the expansion of economic opportunities for the black minority. During the sixties the National Urban League, which he led for many years, launched its New Thrust program to help cope with the problems of the urban ghetto.



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decent respect to the opinions of mankind, as another group of innovators in the public arena once declared. In the homelier language of the president of one foundation: they failed to provide answers to the perfectly legitimate question, "What have you done for me lately?"

CONQUEST OF HUNGER

In September, 1971, Prime Minister Indira Gandhi of India announced that her government did not plan to import any food grains from the United States in 1972; once again, India's grain production had reached record levels, pointing toward self-sufficiency. During the 1970-71 seasons, India produced 23.3 million tons of wheat, an increase of 3.15 million tons over the previous year's record crop. Rice production registered a 5 percent increase: after years as a major world importer, India announced in January, 1972, that she had achieved self-sufficiency. "There will be no more rice importing," a Food Ministry spokesman was quoted by *The New York Times* as saying.

Millet harvests were up to 8 million tons from 5.33 the previous year. Maize scored an amazing 30 percent gain with 7.4 million tons. Only five years ago, India had required one-fifth of the United States wheat crop to fend off starvation; now she had 7.5 million tons of grain in reserve.

How was this turn-around accomplished? Favorable weather conditions had helped, but in the main the dramatic change in India's food production is the result of that combination of factors that is popularly known as the Green Revolution: improved varieties, proper management and inputs, and trained local specialists—all mobilized by able government leadership.

Other one-time food-deficient nations have or are reaching self-sufficiency in major food crops. Well organized, intensive efforts to increase the production of wheat are being made in Afghanistan, Nepal, Iran, Turkey, Algeria, Tunisia, and Morocco. Major efforts with rice are under way in Ceylon, Nepal, Burma, Indonesia, Malaysia, and Vietnam. The possibilities were summed up by Dr. Harrar when he said: "Where the national will exists, chronic under-producing countries can today work quite rapidly toward self-sufficiency by coordinating their own efforts with the international consortium of men and materials that has been brought into being during the past decade." This is of the greatest importance to much of the developing world.

The description that follows of the means toward this end is based on an unpublished manuscript, "The Agricultural Revolution: World Community Mobilized," by Sterling Wortman and Robert F. Chandler, Jr.

SOME PROBLEMS OF AGRARIAN NATIONS

Scores of the poorer nations, some 70 of which have gross national products of \$260 per capita or less a year, are in the tropics and subtropics. Most are agrarian, with 50 percent to 80 percent of their people living on the land. Landholdings are apt to be small, ranging from a fraction of a hectare to a few hectares. Yields are very low and static; they have not changed appreciably for generations.

Commonly, farm families practice subsistence agriculture, producing primarily to meet their own needs, with trade largely limited to barter with neighbors. Since these rural people neither produce much for the market nor purchase appreciable amounts of goods or services, they do not contribute to expansion of domestic markets on which both rural and urban trade centers must depend. For most of the rural poor, there has until recently been no favorable change in their own prospects for the future, yet they are becoming aware of changes elsewhere. And these massive rural populations are contributing substantially to high rates of population growth.

In many parts of many nations, diets are not only meager in quantity, at least during parts of the year, but high in carbohydrates and low in protein and other elements important in human nutrition. Where diets are based on starches, dietary protein deficiencies are common, especially among young children. It is now generally understood that such protein deficiency both retards mental and physical development of the young, and predisposes people to attack by disease. Improvement of amount and quality of diets, together with potable water, are increasingly recognized as basic health measures by responsible national leaders.

Recent experiences in diverse nations now indicate that these farm families are willing and able to help themselves if given the opportunity. And, as Dr. Harrar has pointed out, nations now have or can develop the capability, given the will, not only to bring about fundamental and positive changes in the rural countryside but, in so doing, to bring benefits to the urban dwellers and lay the basis for accelerated national economic and cultural progress.

In spite of the complexity of the problem of low agricultural productivity, there now have been a number of dramatic demonstrations that major advances in productivity and profitability can be obtained on farms large and small. In most places, one key to the progress is the identification or creation of new, highly productive crop varieties or animal strains *together with* proper supply of nutrients, disease and pest control, and new techniques of soil, crop and/or animal management, tailored to the specific characteristics of the soils and climate where the technology will be used. It is these biological components of the agricultural system which so often are not transferable

from one ecological situation to another, although through science ways have been found to greatly extend the range of adaptation of some plant varieties, particularly wheat and rice.

Acceleration of agricultural development, however defined, is the unique responsibility of the individual nation. Only the individual nation can establish the production goals, set the policies, organize the institutions, allocate funds, and establish programs to reach its farmers. Consequently, most agricultural technical assistance efforts of national and international agencies, foundations, and the international agricultural research institutes, are committed, and must be, to the strengthening of national efforts. There are now some good national case studies which have attracted attention.

MEXICO

In the early forties, The Rockefeller Foundation responded to a request from the government of Mexico to assist that nation in increasing its agricultural output and in developing certain of its institutions.

Among the basic food crops of the nation were corn, wheat, and beans, and it was on such crops that the initial focus was placed. National average yields of corn were about 8.5 bushels per acre and of wheat about 11.5.

The task clearly was to increase production, to eliminate Mexico's need for food imports, to provide better diets for her people, and to raise incomes.

For the next 20 years the Foundation cooperated with the Ministry of Agriculture in Mexico, developing crop-oriented research and training and production programs. Work was concentrated on varietal improvement, control of diseases and insect pests, determining best ways to supply plant nutrients (fertilizers), and solution of other problems which appeared to be blocking productivity.

The Rockefeller Foundation provided a team of scientists under the direction of Dr. J. George Harrar, later to become President of the Foundation. The group never was very large, reaching a maximum of 20 staff members in 1956. Most of the activity was carried out by young Mexican men and

J. George Harrar, leaning against a tree in Mexico in the earliest days of the Foundation's operation of the agricultural program, has seen his pioneering efforts take root in many other countries of the developing world to produce what is often called the Green Revolution.



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women, some 700 of whom received from one to three years of in-service training. Those who demonstrated outstanding ability were given opportunities to undertake graduate studies in the United States and elsewhere. Today many of these specialists have risen to positions of prominence in the national and international scientific and educational community.

By 1963 Dr. Harrar was able to report:

The impact of this cooperative program on the agriculture of Mexico has produced demonstrable results. In general, it can be said that food production has doubled. Wheat production has more than doubled, corn harvests are up almost as much, bean production has doubled, broiler production has tripled, eggs have increased two and a half times, and the end is not in sight. Mexico could stop importing wheat in 1956, when harvests balanced demand for the first time in history, and corn is no longer in deficit supply.

Twenty years ago, Mexico's 21 million people averaged 1,700 calories a day. Today, Mexico's 37 million people average 2,700 calories, and they have a more varied diet that increasingly includes animal proteins.

By 1961 Mexico's own capability in scientific agriculture was strong enough to permit the phasing out of Rockefeller Foundation involvement. Today Mexico continues its efforts to improve her agriculture and to extend the benefits to other nations as well.

There have been several studies of the pay-off to Mexico from the combined investments of the government and The Rockefeller Foundation in the research and training program. Studies conducted by Dr. Theodore Schultz and his associates indicate that the total investment in agricultural research in Mexico during the period 1943-1963 was providing in the late sixties an annual rate of return of 290 percent; for corn research, 1943-1963, the rate of return was 300 percent; and for the very successful wheat research program, 750 percent. These estimates indicate that for every peso invested in these activities over the 20-year period, the annual returns were 2.9, 3.0, and 7.5 pesos—a rate of pay-off that is attractive indeed.

The result is that organized agricultural research and training are increasingly being recognized by national and international lending institutions as types of capital formation which can and should be supported with loans.

THE GREEN REVOLUTION SPREADS

In 1965-66, India embarked on a new strategy for the rapid development of her agriculture. The objective was to spread the use of improved high-yielding varieties of wheat, rice, and corn over approximately 32 million acres during the five-year period ending in 1970-71. Initially utilizing high-yielding varieties of wheat developed in Mexico and similar short, stiff-straw,

high-yielding varieties of rice from Taiwan and from the International Rice Research Institute in the Philippines, plus high-yielding corn varieties developed from her own maize-improvement program, India made remarkable progress. Within two years, some 20 million acres had been planted to the new varieties. The former Minister of Food and Agriculture, C. Subramaniam, said in 1968, "As a feat of human engineering, this has scarcely an equal in history. In the year 1950-51, we produced, on an average, 51 million tons of food grains, and we increased this to 89 million tons in 1964-65—a compound rate of increase of over 3 percent per year. It may be that other countries could have done better. But, to restore the right perspective, it is necessary to realize that we stretched traditional agriculture almost to the very limit during the first three [national] plans. If we could not depart from the traditional path earlier, it was because the new varieties of seed were just not available for the conditions in India." Characterizing the new national initiative, Minister Subramaniam pointed out: "The new strategy is like an elegant piece of modern industrial design. Genetic manipulation, chemical technology, and economic incentives have helped to contrive the lineaments of this strategy. But if it is to work, it needs the lubricant of finance or credit." In 1970-71, total food grain production reportedly reached 108 million tons.

PAKISTAN

By the mid-sixties, Pakistan had completed initial tests of the new high-yielding varieties of wheat and rice, as had India. Some of her young technicians had been sent to the International Maize and Wheat Improvement Center in Mexico or to the International Rice Research Institute in the Philippines for training. Performance of the new varieties in Pakistan was encouraging. And Pakistan initiated a determined campaign of increased productivity of rice and wheat in West Pakistan and of rice in East Pakistan.

In 1965-66 there were 12,000 acres of the short stiff-straw wheats in West Pakistan. Success of these plantings prompted Pakistan to import 350 tons of seed wheat from Mexico during the 1965-66 season, then an additional 42,000 tons during 1967. With these imports and seed increases on her own farms, Pakistan was able to increase acreage in high-yielding wheats to approximately 7 million acres in the 1969-70 growing season.

Progress with rice has been somewhat slower, yet still impressive. Aided by an import of some 1,500 tons of seed rice from the Philippines, acreage in high-yielding rice varieties increased in East Pakistan from about 500 acres in 1966-67 to approximately 1.2 million acres in 1969-70. Similar increases in acreage of high-yielding rice occurred in West Pakistan during the same period.

While India and Pakistan were mounting their major new national pro-

grams with wheat and rice, the Philippines was concentrating on its basic commodity, rice. The national agencies, with some support from the International Rice Research Institute, embarked in the mid-sixties on a concerted national effort to place the new high-yielding varieties and associated technology in the hands of her farmers. By the 1969-70 season, the new technology was in use on some 3.3 million acres, many of them belonging to small farms of one to a few hectares.

There are other examples, of a more limited nature, of successful national efforts to increase productivity of basic food crops. Attention in recent years has been primarily drawn to the success with wheat and rice, particularly in areas where irrigation is possible or where amounts and distribution of rainfall are favorable. If the agricultural revolution is to continue, and to have more widespread benefits, similar efforts must be made with winter and spring-type bread wheats in areas where rainfall is limited, in upland rice areas, and with other crops on which large numbers of farmers depend for a livelihood despite unfavorable soil or climate conditions.

A NEW IDEA: INTERNATIONAL INSTITUTES

By the late fifties the Ford and Rockefeller Foundations had become convinced of the vital need for all nations to have access to agricultural research directed to the solution of their problems and of the equally urgent need to train national scientific and technical personnel for national agencies. But since there were several score nations with relatively low and static agricultural yields, it was obvious that neither funds nor scientific personnel was available to permit the simultaneous elaboration of national programs of the type that Mexico had utilized so successfully.

Necessity again was the mother of invention. Ford and Rockefeller chose to experiment with a new kind of international assistance organization, the international agricultural research institute. They elected, after consulting with leaders of Asian nations, to start with rice in tropical Asia, the single most important food crop of the region.

Edwin J. Wellhausen retired at the end of 1971 as Director General of the International Maize and Wheat Improvement Center in Mexico, after 28 years of spearheading food crop production programs that have captured the imagination of the world. His work goes on—both at the new headquarters at El Batán and at three experimental stations: improved wheat and corn varieties are now grown and distributed in over 20 nations.



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THE INTERNATIONAL RICE RESEARCH INSTITUTE

Rice is the principal food of more than half of mankind, and over 85 percent of all rice is grown and consumed in Asia. Yet, until the mid-sixties, rice yields in most tropical and subtropical areas were extremely low—less than one-third of those in such advanced countries as Japan, the United States, and several southern European nations. The idea of an institute to devote itself to the single purpose of promoting yields of rice originated with the two foundations in 1958. The institute's objective was to conduct a comprehensive research program on the rice plant and its management. In addition, it maintains a library and documentation center to collect and provide access to the world's technical literature on rice; operates an information service; conducts regional rice research projects in cooperation with scientists in other countries; offers a resident training program in which scientists and extension workers from rice-growing countries of the world may carry out studies of the rice plant and learn techniques of rice production. It also conducts international seminars and workshops to allow participants to pool their experiences, and to identify important unresolved problems.

In addition to its training program for young research scientists, the institute operates a rice-production training program for extension workers. Once each year for a period of 5 to 6 months, about 35 young extension workers from about 12 different countries take a full course in modern rice-growing techniques. The participants grow a crop of rice, carrying out themselves each operation needed from land preparation and planting through the harvesting process. They spend about half their time in the rice fields. The other half is spent in the classroom where instruction is offered by the senior and junior scientists of the institute. When the scholars are graduated from this course they are fully familiar with the modern methods of rice production, including a knowledge of the major diseases and insect pests of rice.

IRRI maintains an international program with special projects in India, Pakistan, Ceylon, Indonesia, and South Vietnam. In addition, it cooperates

Robert F. Chandler, Jr. is about to retire as head of the International Rice Research Institute in the Philippines. In less than ten years its development of "miracle" rice germplasm has revolutionized rice production methods in Asia and, more recently, in Latin America.



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intensively with the rice-improvement program of Thailand. The purpose of each of these projects is to help national agencies to accelerate rice research and production.

MAJOR ACHIEVEMENTS

IRRI's first effort was to identify the causes for low yields. It became clear that the most important single factor was that the typical rice plant in the tropics was overly tall, with long, drooping leaves. When fertilizer was applied, the plants became even taller and they lodged (fell over) before harvest—which greatly reduced yields. It was evident from earlier work done in the more developed countries that the most logical solution was to produce, through plant breeding, a plant that was short and stiff-strawed, which would remain erect even when heavily fertilized, and which would respond well to fertilizer application rather than register a decrease in yield as did the traditional tropical rice plant.

By introducing several short varieties from Taiwan and crossing them with tall, tropical varieties, a number of promising genetic lines were developed rather quickly. In 1965 a cross resulted in a selection which later became known as IR8. This variety was widely distributed in 1966 and established new yield records wherever it was tried in the tropics and subtropics of the world. In fact, top yield records on experimental fields were doubled as a result of the introduction of this variety. It opened new vistas to rice growers, and demonstrated the fact, hitherto unappreciated, that rice yields in the tropics can be increased substantially.

Since then the institute has made approximately 1,800 additional crosses. It grows and examines more than 40,000 genetic lines a year from among the progeny of these crosses. It has sent out thousands of genetic lines for trial in many countries of the world.

Since IR8 was first identified as a highly promising selection, the institute has named IR5, IR20, IR22, and IR24. The later varieties have the same high-yield potential of IR8, but with improved grain quality and greater

Leobardo Jiménez is the general coordinator of Mexico's Puebla Project, a significant demonstration of how Green Revolution benefits can be extended to the small farmer. Improved crop management techniques that local farmers could readily adopt have resulted in corn yields up to five times higher than in previous harvests using traditional practices.



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resistance to insects and diseases. These varieties, or similar ones developed in other countries as a result of the stimulus of the institute, now cover more than 10 million hectares of land in tropical and subtropical Asia. By planting them and by using certain improved practices, Asian farmers, on the average, have increased their yields by one to two metric tons per hectare.

Probably the most valuable contribution of the institute's scientists during the next few years will be the creation of a set of rice varieties for half-flooded and upland conditions that not only have the plant type, fertilizer responsiveness, and high-yield capacity of the varieties recently developed, but also will have a much broader spectrum of resistance to insects and diseases. Future research programs of the institute and of cooperating national agencies will move more into farmers' fields where local problems will be encountered first-hand and farmers will participate in early results.

THE INTERNATIONAL MAIZE AND WHEAT IMPROVEMENT CENTER

CIMMYT was founded in 1966 by The Rockefeller Foundation and the Government of Mexico, in consultation with the Ford Foundation, which became a supporter of the center upon its establishment. The center, which has its headquarters in Mexico, operates two major programs: the Wheat Improvement Program and the Maize Improvement Program. Each has an interdisciplinary team of scientists concerned simultaneously with research on major problems limiting productivity, training of personnel for national agencies throughout the world, and cooperation with national institutions in research, training, and production activities.

The center has the most far-flung international program of any of the institutes now in existence, with direct support being provided to Argentina, Peru, Ecuador, Colombia, Tunisia, Morocco, Algeria, India, Pakistan, and Afghanistan. In addition, it has trained personnel from over a score of nations and has cooperative research activities under way with over 50 countries. Major sources of support of the center's activities are the Ford and Rockefeller Foundations, the U. S. Agency for International Development, the Canadian International Development Agency, the Inter-American Development Bank, the World Bank, and the United Nations Development Programme. The UNDP support is for research on high-protein quality in maize and its utilization in the nations of Latin America.

Major progress in the years ahead is expected in the development of widely adapted high-yielding maize varieties for tropical lowlands, intermediate altitudes, and highlands; development of protein of high nutritional quality and its incorporation into varieties with highly acceptable grain types; identification of plant resistance and the development of new methodologies for improving productivity and incomes from small-farm holdings.

In wheat, major progress has been made in the creation of short stiff-straw types of durum wheat; in the development of triticale—a man-made species from crosses of wheat and rye—in cooperation with the University of Manitoba; new varieties and associated cultural practices for winter wheat in the highlands of the Middle East; the design and operation of international disease surveillance and control programs; and collaboration with FAO and nations of North Africa and the Middle East in a cooperative wheat and barley improvement (and training) project.

THE COMPREHENSIVE INSTITUTES

In 1967 two additional international agricultural research institutes were established: the International Institute of Tropical Agriculture (IITA) with headquarters at Ibadan, Nigeria, and the International Center of Tropical Agriculture (CIAT) in Colombia. Like IRRI and CIMMYT, these two institutes are under autonomous boards of trustees with a majority of the members from the regions served. The comprehensive institutes are experimental in that they are oriented toward comprehensive development of the agriculture of the lowland tropics rather than to the improvement of specific crops. Their success is yet to be demonstrated and some observers doubt that they can have the impact of IRRI or CIMMYT. On the other hand, there are a substantial number of crop and animal species which must receive attention if the tropical areas of the world are to be opened to intensive agriculture. While these new institutes may not be able to develop the depth of activity on individual crops that might be desirable, they do have a substantial degree of flexibility in working out cooperative arrangements with other national and international institutions in putting together a concerted attack on some of the major problems.

THE WORLD COMMUNITY MOBILIZES

It was hoped from the outset that, if successful, the institutes would receive the approval and the support of the international community of donors as well as of the nations to be served. And such interest is beginning to develop.

The institutes represent no panacea. Attention of nations and of assistance agencies still must be directed primarily to the strengthening of national institutions, to the training of technical people within their own countries, to the solution of problems where they exist, and to the formulation of national policies which serve the national interest. But the institutes are emerging as another tool, another mechanism, to which nations in need, and assistance agencies which would help them can turn for unique contributions to national progress.

In April, 1969, the heads of, or senior officials from, 15 national and

international assistance agencies met in Italy at the Bellagio Study and Conference Center. Among those attending the meeting were representatives from the Asian Development Bank, the Food and Agriculture Organization of the United Nations, the Inter-American Development Bank, the International Bank for Reconstruction and Development, the Organization for Economic Cooperation and Development, the United Nations Development Programme, the British Ministry of Overseas Development, the Canadian International Development Agency, the Economic Commission for Africa, the French Office de la Recherche Scientifique et Technique Outre-Mer, the Japanese Ministry of Foreign Affairs, the Swedish International Development Agency, the United States Agency for International Development, the Ford Foundation, and the host, J. G. Harrar, the President of The Rockefeller Foundation.

During three days of discussions, based on a series of background papers prepared by resource personnel and subsequently published by The Rockefeller Foundation, the group recognized that if agricultural output of the developing nations is to increase at the relatively low rate of 4 percent per annum, the world agricultural output will have to be doubled in the next 17 or 18 years. And, within 35 to 40 years, it must be quadrupled. The basic question was, "Can the world develop the men and the institutions to bring this about?"

Over the next two and a half years, representatives of what then had become known as the Bellagio Group met three times to review what needed to be done and how to set about doing it. The group agreed, on the basis of specially researched reports, that with the exception of rice in the lowland tropics and spring-type bread wheat, the world's agricultural technology is extremely weak.

They found no institutions which offer assistance of a comprehensive nature with sorghum, millets, potatoes, sweet potatoes or yams, field beans, cowpeas, chick-peas, pigeon peas, soybeans, peanuts, several other minor legumes, tropical vegetables, tropical fruits, or any of the several animal species which are or could be important in the tropics and subtropics.

Alberto G. Pradilla, M.D., pediatrician, biochemist, and director of the Metabolic Ward of the University of Valle Hospital, has over the last five years extensively tested high-lysine corn and demonstrated dramatically that this nutritionally superior food can rapidly restore the health of children seriously ill with malnutrition (kwashiorkor). For this work, he was named co-winner of the first John D. Rockefeller 3rd Youth Award.



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Consequently, the representatives recommended that studies be mounted immediately to explore the desirability and feasibility of new international efforts in the following fields: upland crops for drier areas of Asia and Africa; animal production and health in sub-Saharan Africa; food legumes; agricultural policy; and water management.

In addition, it was recommended that the existing four institutes (IRRI, CIMMYT, CIAT, and IITA) be provided with necessary continuing support by the international community of donors. Finally, a recommendation was made and accepted to form a more permanent body of donor agencies. A decisive factor in this far-reaching decision was the agreement of the directors of the World Bank that the Bank could in consultation with UNDP and FAO explore with representatives of international organizations and of governments the desirability and feasibility of establishing a Consultative Group for International Agricultural Research.

THE CONSULTATIVE GROUP

The group today consists of 28 organizations with a declared interest in helping to stimulate the agricultural sectors of the developing world. Recently the development agencies of Germany, Denmark, and Belgium have indicated their readiness to participate in the funding of agreed-upon projects. These include, as previously indicated, the existing four international institutes, and three new institutes: a center for potato research in Peru, a center for semi-arid tropical crops (sorghum, millets, chick-peas, and pigeon peas, for example) in India, and an animal health center in tropical Africa.

The coming together of nations, lending agencies, and foundations toward the support of international agriculture is an event of great meaning to The Rockefeller Foundation. In 1943, it was one of a very few organizations, if not the only one, working internationally to improve the yields of food crops. Now some of the world's great development agencies have joined in the recognition that without a thriving agricultural sector the world cannot meet even the minimal expectations of hundreds of millions of its people.

Kenneth Norris (right), director of the Oceanic Institute at Makapuu Point, and Ziad Shehadch, director of the institute's Food-from-the-Sea Program, were able to announce this year the successful spawning of Hawaiian mullet under the most controlled conditions ever achieved. This is a major step toward setting up regular hatchery operation which could provide an important supplementary protein source.



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PARALLEL EFFORTS: THE SMALL FARMER

The Green Revolution has been attacked by some observers as making the rich richer and the poor poorer, accelerating the migration of the rural poor to already overcrowded cities, aggravating problems of under-employment and unemployment, and presenting new threats to the environment. Contrarily, to leaders of the economically underdeveloped countries which have experienced the recent changes, and to the national and international agencies which seek to assist them, the agricultural revolution offers new hope of increasing farm productivity; bringing sources of basic food supplies under national control; increasing incomes of great masses of farm people with associated improvements in diets, housing, and health; expanding domestic markets for products of urban industry; increasing employment; promoting domestic tranquillity; and establishing a new basis for economic and social development.

While the debate goes on, progressive governments, knowing that economic and social progress depends to a large degree on improving life for their rural people, are making pace-setting efforts to bring the benefits of the Green Revolution to the subsistence farmer. In Mexico, El Salvador, India, and Kenya, for example, dedicated leaders are helping to move small farmers into a market economy by demonstrating what can be accomplished with better materials and practices and the necessary inputs, and by creating access to credit and marketing facilities. The work is slow and painstaking: literally millions of farm families must be reached and convinced. This effort will undoubtedly be of the greatest importance during the decade of the seventies.

HIGH-PROTEIN GRAINS

In the race to feed the world's exploding population, closing the protein gap is second only in importance to producing enough food. Fifty percent of the world's protein comes from grains; consequently, the effort to raise the quality and quantity of cereal protein through genetics and plant breeding is a high-priority item in world planning for meeting the projected food needs of developing nations. To date maize is the leading cereal crop in which

Father José Romeo Maeda has succeeded, against considerable odds, in persuading poor and tradition-bound farmers in El Salvador to organize themselves into cooperatives. From the first group of 50 families in 1956 the experiment has grown into a federation of 64 cooperatives involving more than 10,000 farm families. Corn yields have doubled and trebled, credit is more easily available to farmers, and various commercial agricultural programs are now under way.



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progress along these lines has been significant; high-quality protein in maize is the prototype for attempts to improve protein quality in other major grains such as rice and wheat.

THE ECONOMIC CONSEQUENCES OF MODERN AGRICULTURE

Fundamental change in the agricultural sector has illuminated economic and social imbalances that preceded the Green Revolution by many decades, in some instances by centuries. The great problems facing the developing world are soaring populations, widespread under-employment and unemployment, and internal migration from the land to the city. In Northern Africa, for example, the population is expected to increase from 72 million in 1965 to 125 million in 1985. During the same period, the male labor force is expected to increase by 50 percent; it will double by the year 2000. Seventy to 90 percent of this increase will occur in rural areas. The flow of people from the land to the cities, already a serious problem, will increase sharply.

These prognostications, formed by work by the Consortium for the Study of Nigerian Rural Development at Michigan State University, are based on traditional agricultural employment patterns: modern agriculture is only beginning to make headway in Northern Africa. But it must be emphasized that if the governments of developing nations take no steps to combine modern food production with safeguards for rural employment and other incentives to rural life, the Green Revolution will indeed be blamed for contributing to economic imbalances and social injustice.

One can note, however, the beginnings of a fundamental change in attitude by governments to the rural sector. Until recently, industrialization seemed to many governments the answer to unemployment. This turned out to be a disappointment for a number of reasons, among which rising productivity per worker is one. A ten-year study (1954-64) made in Kenya, for example, showed that while manufacturing output rose by 7.6 percent a year, employment fell by 1.1 percent. It is now generally agreed that solutions to rising unemployment should also be sought in the agricultural sector in a variety of locally adapted ways.

Toward this end, the Foundation recently moved to establish a network of research and action studies on unemployment and the utilization of human resources in the developing countries. Social scientists, in large part from the countries concerned, will spearhead applied research projects to answer such basic questions as why rural people continue to migrate to the cities when urban jobs are so scarce. At the same time, action-oriented studies, in which development specialists along with engineers and scientists would take a leading role, would seek to determine what kind of development project would provide or stimulate the most rapid employment growth.

The period 1943 to 1972 marks the service of Dr. J. George Harrar to The Rockefeller Foundation and to the world community. He was the first to undertake the Mexican Program, the pioneering demonstration that over 30 years led in a straight line to India's record harvests, and now to the banding together of old and new agencies to expand the Green Revolution. Few men have earned a more fitting monument to their life's work.

PROBLEMS OF POPULATION

When The Rockefeller Foundation announced Problems of Population as one of its five major programs in 1963, the objectives in this field were less clear-cut than they are today. Perhaps in no area of public debate has world consensus developed more rapidly than in the need for restraints on human fertility. By the early sixties, important demographic soundings had been made, but there was no basic fund of coordinated data that would incontrovertibly urge massive birth control programs for given nations, economic groups, or sociological categories. The middle and upper classes in many countries were limiting their families safely and with medical advice, but few voices had publicly proclaimed this a universal human right that was being denied to the medically indigent, a notion that today is common currency. And, in fact, the technology to support such a contention did not yet exist.

Furthermore, motivational factors were unexplored. Achieving an about-face in attitudes toward fertility was as problematic as the development of a safe, cheap, and universally acceptable contraceptive. The impact of factors influencing family-size decisions—tradition, religion, economic and social expectations, upward mobility, infant mortality, and life expectancy of parents—was in each case hard to pin down, even in patently overpopulated areas. Studies correlating population increase with food supply, employment opportunities, urbanization, migration, economic growth, and similar factors were indicators of needs or of possible trends, but such investigations as were undertaken were often academically oriented and could not serve as a platform from which to press for the adoption of population-control policy.

THE BACKGROUND

It is easy for hindsight to reveal that the Foundation—like other responsible institutions, including governments—dragged its feet in getting started with the promotion of active family planning programs and practical contraceptive research, and that this delay was costly. But in this area where personal decision is crucial, tact and reasonable caution on the part of outsiders are

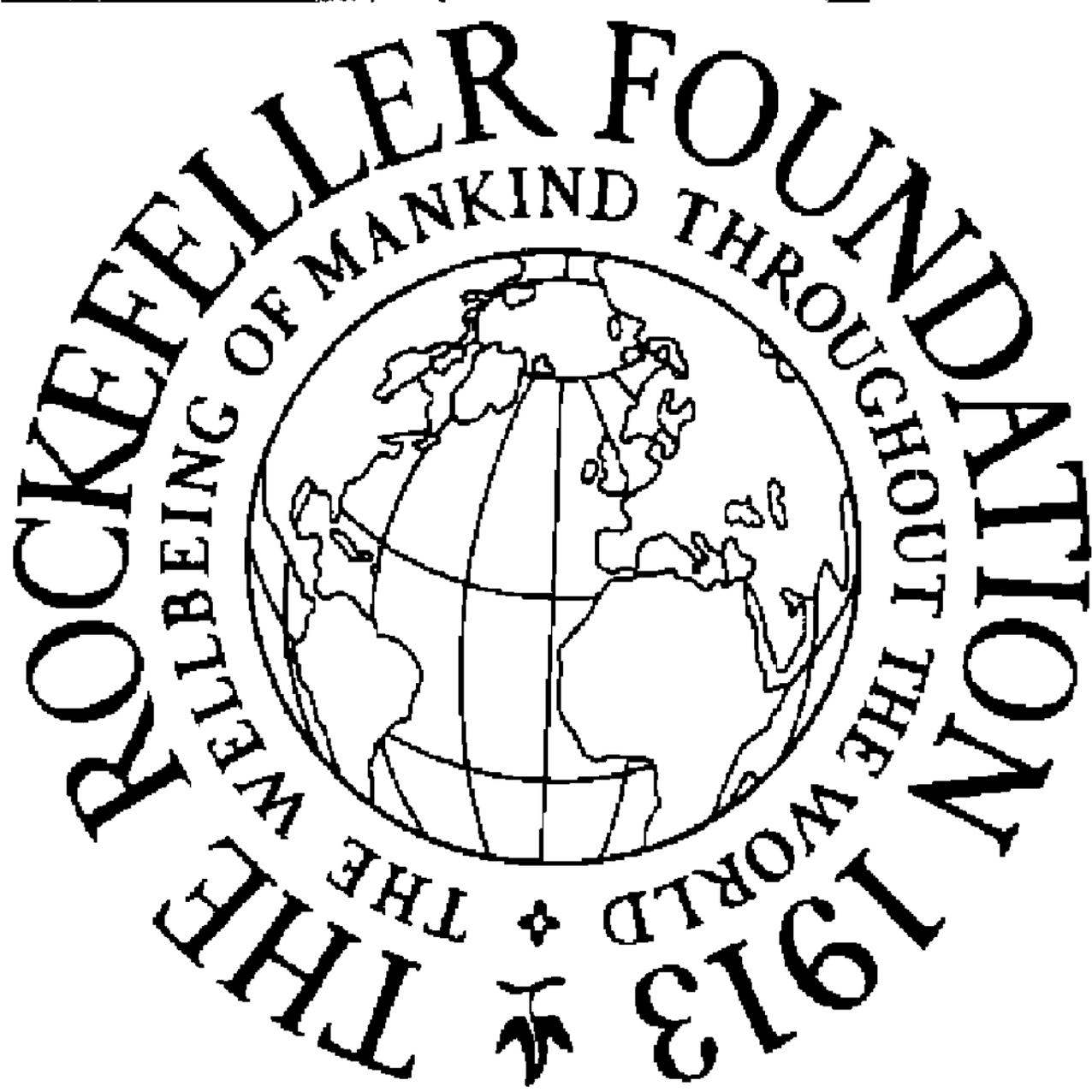
not easily distinguishable from shirking an unpopular task—the more so in dealing with people of different backgrounds and cultures. The many setbacks experienced by the Foundation and other agencies in their first attempts at introducing better farming techniques or convincing mothers to feed unfamiliar high-protein foods to infants who were visibly starving were not likely to engender optimism about rapid acceptance of family planning. And the agriculturists and nutritionists could demonstrate concrete, short-term results; with family planning, both ends and means seemed dubious. The advantages of having fewer children or of stabilizing the national population were much harder to get across; lack of a truly simple, safe, and acceptable method of birth prevention was an even more serious obstacle.

Nearly a quarter of a century ago, the Foundation found itself drawn into the field of population in consequence of its contribution to public health. Overseas programs had made notable progress in saving the lives of mothers and infants; scourges like smallpox, typhoid fever, typhus, cholera, and malaria were coming under control. Now many countries faced a different kind of health hazard: too many mouths to feed. Undernourishment and malnutrition and the many diseases that follow in their wake were, ironically, accentuated by the success of the medical campaigns.

But people in traditional agricultural civilizations have an ancient faith in the bounty of the land, and even their leaders, who had access to data that would substantiate the Malthusian proposition, more often leaned toward the solution of increasing food supplies than that of trying to introduce birth control. Initially, the agricultural program in Mexico was a response to this situation. The government projected a serious food shortage as the population soared, and leaders opted for raising farm output.

Agricultural development called for greater government investment in farmer education, in transportation, often in irrigation facilities, and in credit for seed, fertilizer, and tools. Many in the Foundation saw well in advance that production increases might well be swallowed up if the farmers and their governments had to cope with a geometrical increase in population growth.

Alan F. Guttmacher, M.D., a distinguished obstetrician, is president of Planned Parenthood-World Population, whose technical assistance division is accelerating the development of family planning programs. The agency also provides patient services, public information programs, training programs, and professional studies, in response to the growing awareness of the need for population stabilization.



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As early as 1948 The Rockefeller Foundation had sent four experts—one from its international health staff, and three social scientists, two of them demographers—to survey the problem in five Far Eastern countries. Their report concluded flatly that among the problems of human welfare in that area “those of the reduction of human fertility are at once the most difficult and important.”

When Foundation leaders took soundings in this field, they were given to understand that they could not tackle the problem head-on without arousing powerful opposition, which might jeopardize their effectiveness in other areas. Instead of launching directly into population-control programs, the Foundation gave considerable backing to the Population Council, which was established in this period by John D. Rockefeller 3rd. Support was also provided for international training in demography at Princeton University’s Office of Population Research. Through grants in the medical and natural sciences, the Foundation also supported a good deal of basic research in reproductive biology and human genetics.

DIRECTIONS OF THE SIXTIES

By the early sixties, the public climate both in this country and abroad had changed; fears of the dangers of overpopulation had risen sharply, as had hopes linked with two new contraceptive methods, the steroid pill and the plastic or metal intrauterine device. The intrauterine device, in particular, seemed ideal for use in most developing countries where the pill and the older, more traditional methods were too costly or too uncertain in effectiveness. The time was ripe for a coordinated program in population that would include support for birth-control clinics, training for family planning personnel, contraceptive research, and public education campaigns.

Work in all of these areas was vigorously launched, mainly through grants to established organizations already working in the field, such as the American Friends Service Committee, the International Planned Parenthood Federation, and American and foreign universities. Between 1963 and 1971, about

Ansley J. Coale, a professor of economics and public affairs, heads the Office of Population Research at Princeton University, which has trained a high proportion of America’s outstanding young demographers. The Office is engaged in major fertility studies of Europe, Asia, and Africa; offers graduate studies in demography; and publishes the Population Index, a quarterly annotated guide to world literature on population.



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\$46 million was spent by the Foundation for population programs. Last year \$15 million, or nearly one-third of all grants, was being invested in various aspects of population problems. With these investments, the Foundation has been instrumental in bringing a better understanding of contraception into medical curricula in universities in the United States, Colombia, Thailand, Turkey, and other countries; it has assisted successful clinical programs for the urban and rural poor of Chile and Louisiana; it has encouraged in states from North Carolina to Washington the development of enlightened public education in family planning. It has contributed importantly to research that has deepened our knowledge of human reproduction.

THE CONTRACEPTIVE PUZZLE

Unfortunately, the kingpin of the whole structure, the new contraceptives, had been overrated. A decade's experience in India, including major efforts supported by many agencies, proved that there are serious drawbacks to both the contraceptive pill and the intrauterine device, even where they are made available under medical supervision and at no cost. Side effects are too frequent; they contribute to a high percentage of women dropping out of the programs and to a general lack of confidence. Both methods have helped provide *an* answer in many countries; neither is *the* answer.

In what amounts to a crash program, Foundation efforts are now focused on finding satisfactory means of contraception. Most significant among these efforts is the program of the Population Council announced this year in which internationally known specialists are enlisted in an intensive screening of the most promising current leads in contraceptive research. The International Committee for Contraceptive Development has been formed, including world authorities from Brazil, Chile, Austria, Sweden, and Finland as well as the United States. The committee meets every three months; members keep in close contact between meetings and continually communicate and review research possibilities and results.

The committee's focus is the terrain between theoretical work and commercial product development—the middle ground of applied research, which at this stage seems to hold the best promise for practical results in population control. Members are on the alert not only for new aspects of biological knowledge that can be bent toward goal-oriented research, but for leads that can be eliminated from consideration. Priority goes to projects that no other organization, commercial or academic, is likely to pursue—for example, a chemical that would be unprofitable for a drug company to exploit.

Since the program began, progress has been made in several directions. Among the chemicals most likely to inhibit ovulation, two have definitely been eliminated because they either did not prevent ovulation or because

they produced undesirable side effects. Two others have been taken over for research by a major commercial laboratory.

One of the outstanding leads being explored is a hormone-based contraceptive for men which totally inhibits development of sperm without having any other effect on sexual capacity. A minute capsule implanted under the skin, which can be removed at will, is going into clinical testing in Austria. The capsule is made of a versatile white plastic substance called silastic; the implant, made with a hypodermic needle, is imperceptible and non-irritating; it releases the medication at a predetermined, measurable rate and is effective for up to six months. Likewise reported from Austria is progress in a reversible vasectomy technique that uses metal clips.

Research being supported under the committee's auspices in California is centered on production of a vaginal ring made of silastic. Unlike the intra-uterine device, the ring can be inserted and removed by the wearer and would require a minimum of medical supervision, an important factor in developing countries where medical personnel is in short supply. Research is now concentrated on screening various chemicals for use in the device.

The committee is strongly supporting development of a new intrauterine device in which fine copper wire is coiled around the stem of a plastic T. Research showed a close correlation between the amount of copper used in intrauterine devices and the rate of conception, and subsequently the optimal amount of copper was narrowed to 300 square millimeters. Importantly, the copper T has a good retention rate. It is currently being mass-tested, among other places, in mainland China, which imports it by way of South America.

Funds for projects selected by the international contraceptive committee are provided through the Population Council by the Ford and Rockefeller Foundations; licensing and patent rights will be handled by the Council, as will negotiation of industrial contracts for research that can best be handled by commercial firms.

The Rockefeller Foundation is not limiting its support for independent applied research to the leads identified by the committee, but feels free to make grants for any projects of outstanding promise that come to the attention of its officers.

Grants continue to be made as well to universities in the United States to enable them to create posts for researchers in basic biological and physiological aspects of human reproduction, specifically aimed at developing better contraceptive methods. This year grants designed to break down the dichotomy between basic and clinical research were made among others to the University of Texas, the University of Chicago, Pennsylvania State University, and Northwestern University.

SUPPORTIVE PROGRAMS

Simultaneously, continuing Foundation support is being given for such purposes as delivery of family planning services and expansion of facilities, both in this country and overseas; training for clinic administration and organization; training of medical professionals and paraprofessionals; the search for means of motivating people of different backgrounds to limit their families; the development of literature for people of different levels of education, including the illiterate; and aid and follow-up for indigent teen-age mothers. No one aspect of population work can be wholly effective without support from all the others; the gains of the past in all these areas are fundamental to the speedy dissemination of better contraceptive methods once they are discovered. Furthermore, evidence is coming in from many programs—from Louisiana to Santiago to Bangkok—that impoverished persons, who are the chief victims of excessive fertility, are willing and even eager to accept birth control. This is much clearer than it was in 1948 or even in 1963. In most parts of the world, given the opportunity for choice, men and women even in the most traditional societies do not regard maximum family size as the best family size.

SOCIAL SCIENCE RESEARCH

The social sciences are being drawn deeper into the population problem. Clearer statistical delineations are emerging of what in fact is happening in the various segments of society in many countries. Several Foundation grants made in the past have contributed to this knowledge, and a new program of individual awards, whose first winners were named this year, is expanding research in crucial subjects. A joint competition supported by the Ford and Rockefeller Foundations for research in legal and social science aspects of population problems was announced in 1970; after all entries were screened by two panels of experts, 22 winners from 13 countries including the United States were given support for their projects.

Stanley Bennett, M.D., director of the Laboratories for Reproductive Biology at the University of North Carolina, Chapel Hill, heads a team of outstanding scientists who are applying the techniques of modern cell and molecular biology to fundamental problems of reproductive biology in the hope of achieving better contraceptive methods.



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The award-winning proposals include studies of the effects of economic development and population growth in the United States; fertility and family planning in Spain; elite and mass attitudes toward population issues in the United States; the impact on fertility and mortality of job opportunities for women in Italy; the effectiveness of communication techniques in rural Nigeria; political and professional leadership of population control work in Chile; legislation influencing fertility in Europe; and a number of other topics judged to have special merit. Seven of the awards are funded by The Rockefeller Foundation and 15 by the Ford Foundation.

Important studies correlating data on fertility patterns are being supported. At the Rand Corporation, for example, information collected over five years in a number of developing countries in Asia, Latin America, and the Near and Middle East, will be used to formulate and test a comprehensive model of economic factors bearing on decisions about family size. The model may ultimately be adaptable for use in guiding population-policy decisions under varying conditions.

A REALISTIC OPTIMISM

Realistic hopes may now be entertained for progress both in developing new contraceptive methods and in persuading the people who need them most to use them. After widespread disillusionment with the pill and the coil, for which inflated expectations were allowed to flourish, solution of the knottiest of population problems may come as an anticlimax. But the search for new ways of benefiting mankind is only accidentally and incidentally dramatic in its outcome—discoveries unfortunately cannot be timed to meet public expectations.

The breakthroughs of the seventies will be based on the preparations made in the sixties; these include the building up of university faculties hospitable to contraceptive research; work in human physiology and biology funded at leading research centers; the training of population workers at every level; the professionalization of the field of population as a component of the medi-

Helen Barnes, M.D., an obstetrician-gynecologist, runs a model family planning clinic in Jackson, Mississippi, which is part of a five-county program of maternal and child health-care administered by the University of Mississippi. Health councils made up of the Delta residents themselves, and the use of nurse-midwives are but two of the factors that have made the program a successful one.



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cal curriculum; the pilot programs in family planning here and abroad; the basic investigations in demography and the social science aspects of population stabilization, including communications; and the improvement of the whole apparatus of medical research and education, public health services, and cooperating international, national, and private agencies. The Rockefeller Foundation is now spearheading intensive programs that will build on the very considerable achievements in these areas to which it has provided leadership over the past decade.

UNIVERSITY DEVELOPMENT

If The Rockefeller Foundation can be said to have a single preeminent interest historically, it is the development of institutions to train professional people, scientists and scholars in the applied disciplines, who in turn will train succeeding generations of students, advance the state of knowledge in their fields, and respond to their countries' needs. The founding or developing of 22 public health schools during the twenties and thirties is one example; its interest during the fifties in intercultural or area study centers such as Harvard University's Center for International Affairs and the Johns Hopkins School of Advanced International Studies is another. The Foundation's faith in knowledge as the first step toward realizing man's potential, its faith that man himself is ultimately a rational creature, runs deep; it has survived undimmed the past six decades. Small wonder, then, that the Foundation saw its particular role in the third world as revolving around the development of new, or the strengthening of existing, centers of learning.

WHAT IS UNIVERSITY DEVELOPMENT?

A great university can be a prime mover in the transition from traditional to modern ways of life; but this transition presents enormously complex prob-

Alfredo Aguirre, M.D., a director of the Candelaria Health Center in rural Colombia, has helped to develop a model community health center for more than 30,000 persons. In 1971 Dr. Aguirre shared the first John D. Rockefeller 3rd Award for outstanding achievement by a young man or woman.



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lems, whose solutions require many different kinds of trained people. If the university is to fulfill its potential as a force for constructive change, it must have the will and the ability to build up professional competence in key disciplines and to furnish a scientific and scholarly base for relevant problem solving. The broad purpose of the University Development Program is to help create such universities. How does the Foundation set about this task?

Of fundamental importance is choosing the right universities. With limited resources, the Foundation can work only with institutions that have the potential of serving national or regional needs, that have strength in several disciplines, the determination to move ahead, academic and administrative leadership committed to change, and the promise of increasing support from other sources.

University development is of necessity flexible, taking its cue from the strengths and weaknesses within each institution and adapting its timetable to changing needs. Once an institution has entered into a cooperative program with the Foundation, the first step is to offer additional training to faculty members by providing scholarships and fellowships for advanced study and research abroad. As these men and women return, certain academic departments become strong enough to offer graduate training themselves; Foundation study awards are then limited to support of highly specialized training.

At the same time, the Foundation makes available on long-term assignment a few members of its own professional staff to provide the necessary continuity of effort. The work of these key people is supplemented by visiting professors—scholars from American, Canadian, or British universities on one-year and two-year assignments in teaching and research. Staff members and visiting professors have served as deans and heads of departments and research institutes; they have helped develop undergraduate and graduate teaching; and, collaborating with their local colleagues, have set new standards of research, scholarship, and service. Finally, the Foundation makes grants for specific research projects, the improvement of teaching materials, curriculum revision, and library development. The goal for both research and curriculum is to make them as relevant to national development as possible.

PROGRESS REPORT

During the sixties, support was given to some 10 institutions abroad in sums ranging from a few thousand dollars to enable a researcher to continue promising work, to several million for each of the full-scale University Development centers. Of these, five reached high levels of accomplishment and are now functioning as regional centers of academic strength. They are the University of Valle in Colombia, the University of the Philippines, the Uni-

versity of Ibadan in Nigeria, the three universities in East Africa, and three institutions in Bangkok. Other opportunities such as the University of the Sudan and a combination of two universities in Chile did not evolve as anticipated, and long-term Foundation programs there had to be curtailed. (The Foundation's disengagement in Chile began in 1968 and 1969, and was coordinated with the phasing out of the cooperative agricultural program. Although a full-scale university development program was not realized in this country, strong centers in history and economics as well as in agriculture were built up during the course of the Foundation's assistance programs.)

Academic life in the developing world during the sixties was at least as difficult as in the United States. It is a tribute to the inherent strengths of the institutions with which the Foundation has worked that despite a bitter civil war in Nigeria, political tensions in East Africa, growing estrangement, among some groups, from the United States in the Philippines, and student-faculty unrest in Colombia, all these centers are very much alive and flourishing. Importantly, each has become a strong institution in its own right. The policy of supporting across-the-board development while at the same time concentrating on building up outstanding departments in disciplines of primary importance has resulted in the creation of several high-quality centers that are assuming an increasingly important role regionally. What are some of the specifics of success?

At the University of Valle in Cali, Colombia, one of the best medical schools in Latin America has been developed. An important component of its curriculum is a mandatory period of clinical residency in the Candelaria Rural Health Center to make students more aware of the needs of rural people and to teach the rudiments of preventive medicine: hygiene, nutrition, well-baby care, and family planning. Training in business administration and in agricultural economics at Valle is also of a high order.

At the University of the Philippines, a graduate program in economics has been built from the ground up; the University will soon award its first Ph.D. degree in economics. The Faculty has provided graduate training to young economists from approximately a dozen Asian countries. A rural health center in the Bay district is training medical students in the delivery of health care to isolated villages; the center itself, which also trains nurses, public health personnel, administrators, and paraprofessionals, has become an operational model for the Philippines.

In Bangkok, the basic science curriculum has been completely restructured at Mahidol University, which has emerged as the major graduate training center in the basic medical sciences in Southeast Asia; here again, medical students are exposed to rural health problems. At Kasetsart University, agricultural training and research have been focused on the problems that

limit yields of basic food crops, and the concept of practical research in the field has been successfully introduced in connection with the development of a modern experimental farm. Studies in economics to the M.A. level have been built up at Thammasat University and a close working relationship established with the Faculty of Economics at the University of the Philippines.

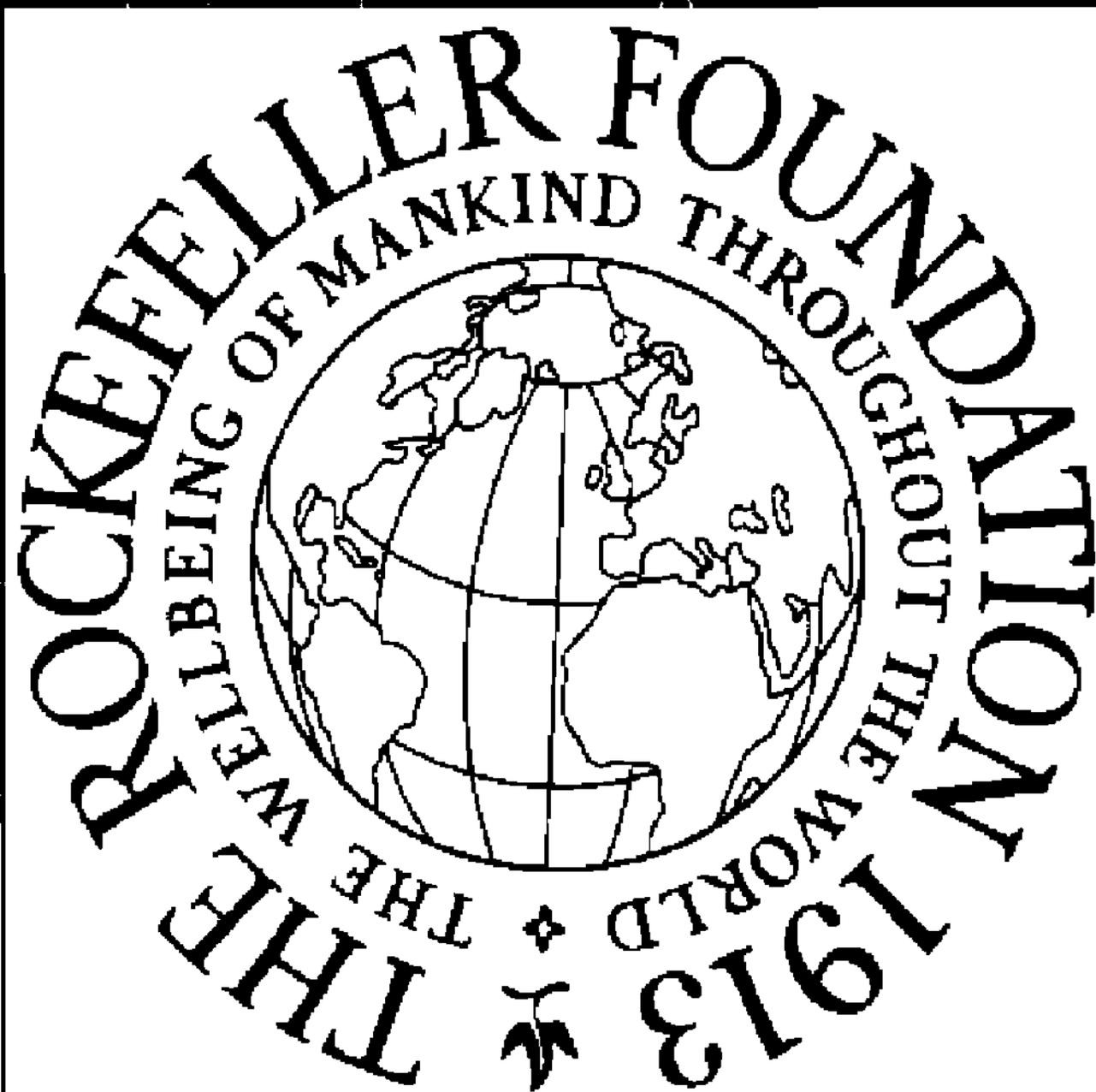
In Nigeria, the University of Ibadan, once a university college in the British tradition, is today a full-fledged university. Graduates who have done advanced work there or overseas now form 75 percent of the faculties of Nigeria's other universities.

The three institutions in Uganda, Tanzania, and Kenya did not continue as the one East African institution free from duplication of professional training that its earliest planners had envisioned, but the three countries cooperate closely in their development and share their graduates' accomplishments and some of the professional schools. Particularly noteworthy are the Institute for Development Studies, the Faculty of Veterinary Science, and the development of graduate studies in economics at the University of Nairobi in Kenya, and the Faculty of Agriculture at Makerere University in Uganda. The impact of these institutions on both education and economic development has crossed the boundaries of the sponsoring countries to reach into much of Africa.

ASSESSING RESULTS

Taken as a whole, has the University Development Program been a success? A decade is scarcely long enough to assess what a university has fully absorbed into its continuing life, let alone what contributions its faculty and graduates are likely to make in the years ahead. Then, too, a university's usefulness today depends a good deal on the policies and levels of awareness of political leadership. It is almost universally agreed, for example, that plans and policies for national development owe much of their effectiveness to the involvement of well-trained economists. Unfortunately that does not mean that when such capacities have been created, political leadership will

Gabriel Velazquez, M.D., former dean of the Faculty of Medicine at the University of Valle in Colombia, provided outstanding leadership to the development of a first-rate medical school, now generally regarded as one of the best in Latin America. Strong emphasis is given to integrating medical and nursing training with the delivery of health care to both rural and urban areas.



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automatically make use of them. A highly competent development economist may languish in an irrelevant job or a routine academic slot. Similarly, highly trained physicians or other specialists may emigrate to the developed countries if conditions at home do not offer them sufficient challenge or reward. But while such factors as these are beyond the control of the university, they do not diminish the importance of creating cadres of specialists for every kind of development need: the most wisely conceived and most persuasively presented social and economic policies mean little unless the trained manpower to carry them out is already in existence. And it is in this—the development of trained men and women—that The Rockefeller Foundation believes it has been able to make a significant contribution.

Another accomplishment has been the assistance, provided at the request of university leaders, with the restructuring of loosely federated, autonomous academic faculties often cast from classic French and British molds, into integrated and centrally administered institutions with the sense of obligation to be of service to their region that is characteristic, for example, of United States land-grant universities. This new orientation was coupled with a gradual turning away from ivory-tower research toward problem-solving investigations aimed at reducing deficits in education, food production, health care, and employment opportunities.

These results have been sufficiently encouraging to reinforce the Foundation's belief in the value of supporting this kind of educational center, where academic development is linked with the search for local solutions to local problems. Along the way, much has been learned of specific importance to future Foundation programs overseas:

No student should be encouraged to take advanced work abroad unless his home institution guarantees him an appointment on his return. Developing countries can ill afford a brain-drain of academic talent. One successful program supported by the Foundation in East Africa provided interim academic appointments, called special lectureships, which kept promising scholars attached to the university until a tenured post became available.

T. Adeoye Lambo, Assistant Director General of the World Health Organization, previously served as vice-chancellor of the University of Ibadan, Nigeria. The university has become a major center for graduate studies and special training programs in Nigeria and throughout West Africa, and is recognized as one of Africa's leading institutions of higher education.



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Foundation staff and visiting professors must be not only skilled professionals but sympathetic and flexible people willing and able to meet new challenges and work with their colleagues to develop new teaching and research programs. Although English has become the universal language for many scientific and social science disciplines, a better relationship can be built up if the visitor can speak the language of his hosts.

At the point when things are going well, there is a temptation to undertake new ventures, to strike while the iron is hot. Auxiliary projects must be examined carefully. Are they really needed, and if so, should they not be supported from local funds? Then, too, finding the right balance between being overly sympathetic to an energetic, responsive university administrator and turning away too soon from one who proves less congenial is a nicety that cannot be defined by formula.

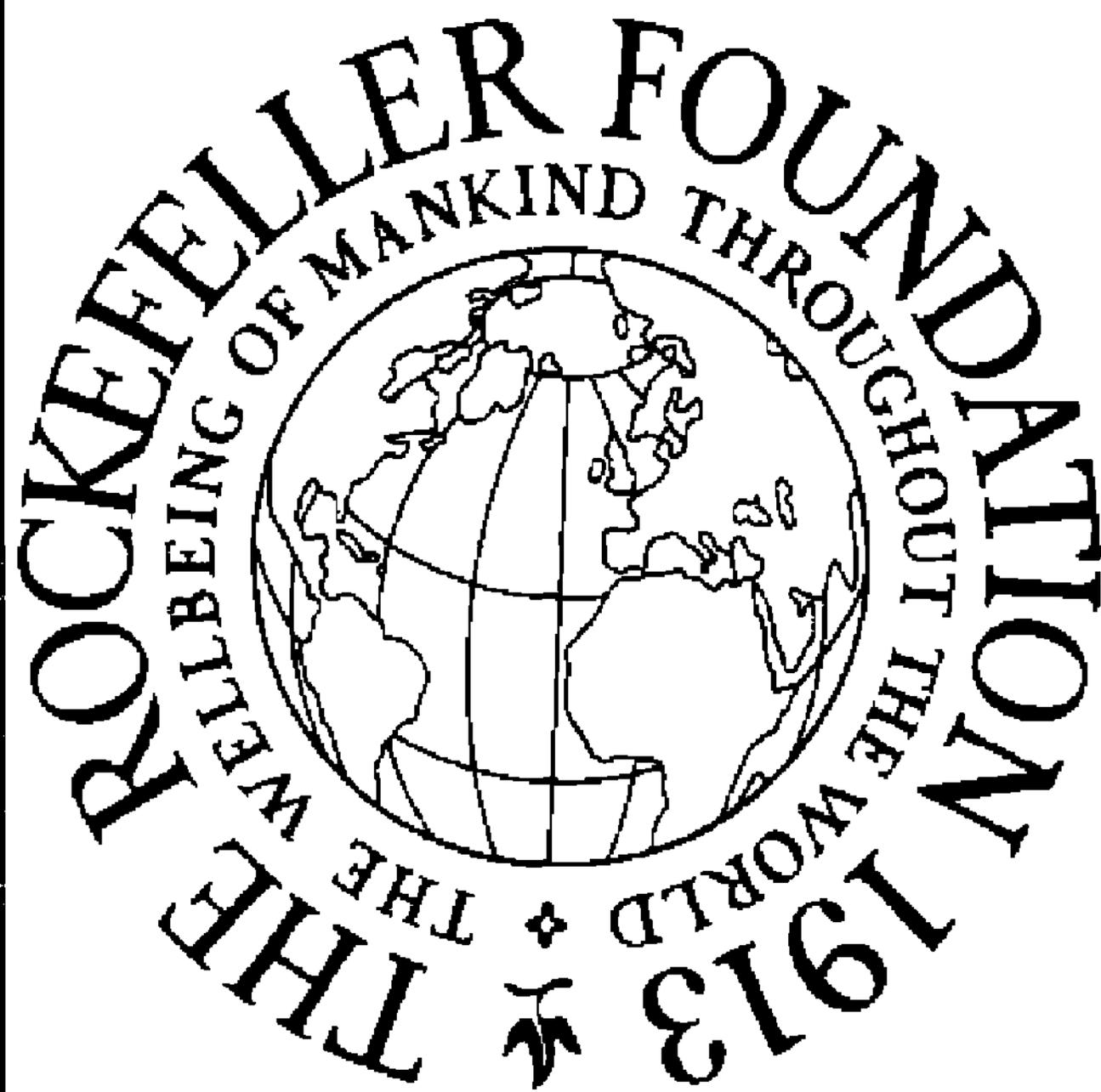
Above all, the purpose of university development must be kept in mind: to build universities that can contribute to a variety of national goals and adapt to changing needs.

“What we have learned,” concludes an experienced officer, “is that every case is different. It’s an art; not a science. The people who are on the scene must be sensitized to the stages of the institution’s growth. You must know when to step on the gas and when to apply the brakes.”

PLANS FOR THE FUTURE

Round One has been sufficiently encouraging for the Foundation to visualize future commitments in building up educational centers in other parts of the world as present obligations decrease. A beginning is now being made in Indonesia with Gadjah Mada University, which clearly possesses the requisites of leadership, a venturesome spirit, and strengths in several departments. The Foundation has hopes of working once again in Brazil, where in the past much was accomplished in public health and where the potential for human and resource development may be unexcelled in the world. The Foundation’s response to these opportunities and to many other requests for cooperative

Don K. Price, a political scientist with extensive university, government, and foundation experience, has had considerable influence during the past decade on the theory and practice of public administration, the training of professionals from other fields in public administration, and in carrying out large-scale studies involving scientists and scholars from many fields. He is now dean of Harvard’s John Fitzgerald Kennedy School of Government.



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work is being considered with the greatest of care, in the hope that the modest presence of a private foundation interested in the kind of university development described can be of use to all parties concerned.

As additional centers come into being, the Foundation anticipates helping to link their research competences through network studies of such common problems as unemployment. It is also hoped that one day faculty members from the older centers can take the place of visiting professors from the western world at the new centers.

University development is not an undertaking for the faint-hearted. Dedicated people are more important than dollars; patient commitment more productive than flashes of genius. Above all, it is a long process. It takes ten years for a promising student to move through the stages of professional development that make him a productive faculty member. For these reasons, university development is well-suited to an experienced private organization, like The Rockefeller Foundation, which can make long-term and high-risk commitments free from political pressures or implications.

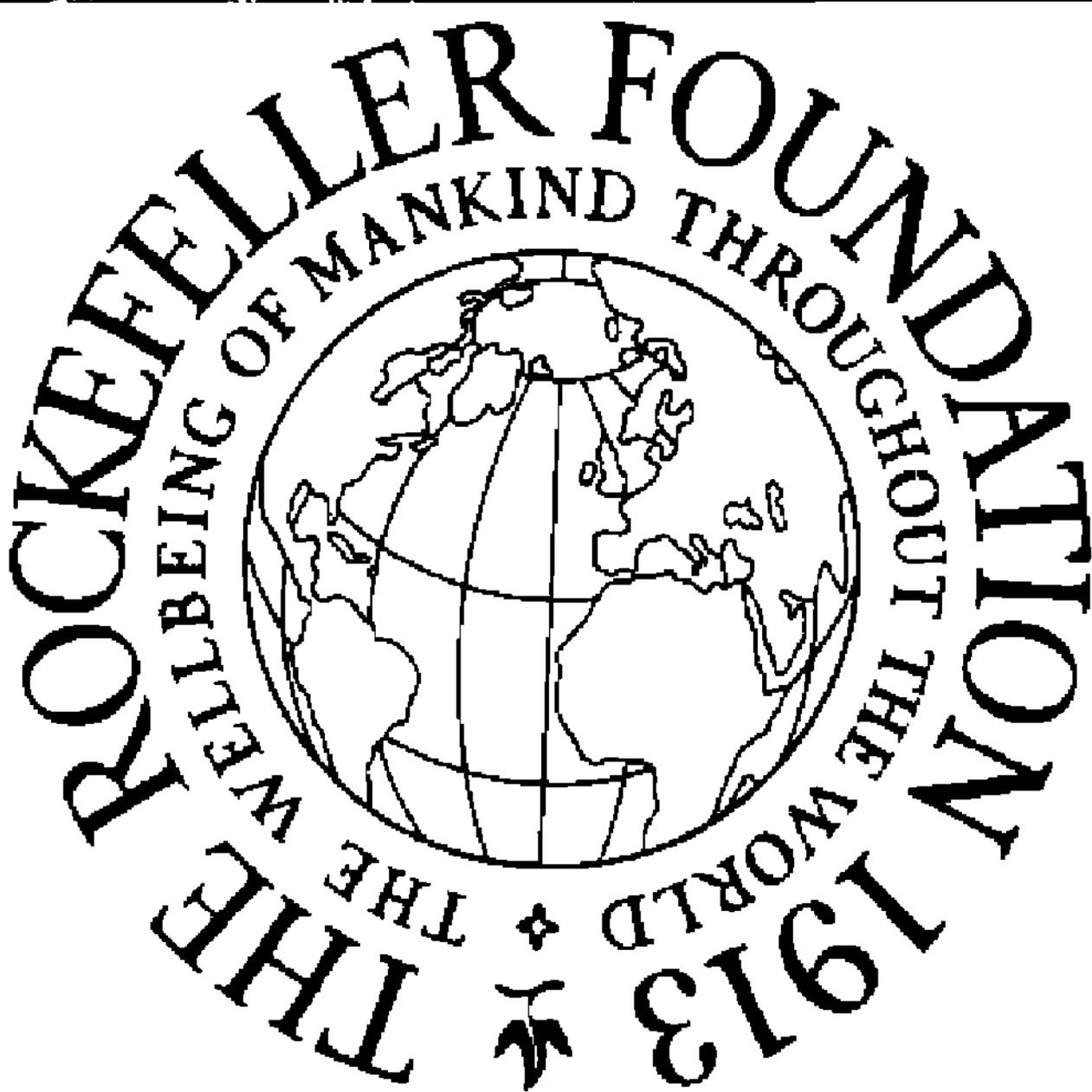
EQUAL OPPORTUNITY

When The Rockefeller Foundation began its program of Equal Opportunity in September, 1963, the equal rights movement, though massive, was still basically nonviolent and substantially middle class. The series of shocks to American society—the demonstrations, riots, and general upheaval that characterized the middle sixties—had not yet taken place (nor indeed were they foreseen).

The Foundation, therefore, at first viewed the equal opportunity movement as one in which tried and true measures might be, by and large, effective.

For America's ethnic minorities the way out of the ghetto had traditionally

Thomas Odhiambo, a Kenyan insect physiologist, is director of the International Center of Insect Physiology and Ecology, an institute uniquely African in its organization and direction. Specialists in a variety of sciences — from genetics to population dynamics — are working together to develop new methods of insect control that will improve public health and increase agricultural production.



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been through education—why could not this principle apply to America's racial minorities as well?

The earliest objective of those in the Equal Opportunity Program was to open the doors of good universities to minority-group students. Much of America still needed to be convinced of the competence and intelligence of blacks and other minorities. Proof positive for whites, and valuable encouragement for blacks and others, would be numbers of highly visible professional people—minority-group doctors, lawyers, engineers. The Foundation began scholarship programs in a number of first-rank colleges; it also supported academic reenforcement (such as summer school programs and transitional year programs) for students with inadequate high-school training. Finally, the Foundation believed that predominantly Negro colleges would continue to be crucial to black education for some time to come, and it strongly supported those institutions.

FROM COLLEGE TO THE COMMUNITY

By 1967 the world had changed. There were the long hot summers of violence in ghetto after ghetto. Words like polarization and backlash had become commonplace. In a crisis situation, was there time for the traditional approach?

When the Trustees met in December, 1967, this was the most urgent question put before them. The consensus was that the Foundation should respond to new voices and new urgencies by shifting its emphasis from the college campus to the ghetto streets. The Trustees and Program Officers agreed to concentrate mainly on:

- Improving elementary and secondary schools in urban areas, particularly the inner cities;

- Training concerned and competent community leaders;

- Studying the origin and nature of urban ghettos, as a beginning step toward eliminating old slums and preventing new ones.

Scholarship and other academic aid at the college and graduate level was not eliminated, but it was sharply reduced—partly because the Federal Government, and the colleges themselves, had assumed a major part of the financial burden.

In the last three or four years the Foundation has sought out—in some cases, initiated—programs that concentrate on improving life in the neighborhoods where most of the deprived people are: the urban ghettos that America had chosen to forget until some of them erupted in frustration.

In Los Angeles, a cooperative program has been worked out between California State College and Locke High School in largely black south Los Angeles—in which the resources of the college (including the volunteer

assistance of students and faculty) are made available to the high school and the surrounding community. An unusual young man, Jim Taylor, was principal of Locke until 1969. He is now Deputy Superintendent of the Los Angeles City Unified School District, and has helped to put together a program of community advisory councils in 617 local schools, in which parents, students, teachers, and administrators work together on educational, financial, and administrative problems.

In Chicago, Saul Alinsky's Industrial Areas Foundation trains competent and realistic community organizers—particularly for inner-city slums.

In Saugus, California, about 30 miles north of the Watts ghetto in Los Angeles, the Watts Labor Community Action Committee—a joint effort of 10 West Coast labor unions—is operating a job-training program that is also a working farm. Some 150 high-school dropouts produce fruit and vegetables for sale in the Watts area; others grow trees and plants for commercial use. An additional 150 students are receiving paramedical training at Saugus for a number of technical positions.

In Detroit, the Volunteer Placement Corps works to place every graduating senior from six inner-city high schools in either a job, job-training program, or college. It has a highly successful record of placements.

In Boston, the Massachusetts Institute of Technology has established a Community Fellows program in which local community leaders can work on their own special projects and their own self-development, in flexible ways, under the personal guidance of institute faculty members.

Individual community programs such as these have been supported because Foundation officers felt they brought something uniquely valuable to a particular situation—say, an extraordinary person or an unusually suitable idea. But the Foundation has also continued to support the large, established civil-rights organizations—the groups that for years bore the brunt of the racial struggle in Congress, in city and state governments, and in the courts. Both the National Association for the Advancement of Colored People and the local and national chapters of the Urban League began in the middle sixties to work more intensely with the hard core: to seek out the alienated, discouraged, and deprived person who would not come to them. The New York Urban League has a street workers' program in which young people—themselves from the ghetto—work with high-school dropouts on their personal and educational problems; the NAACP has established a massive recruiting and training program for community leaders; the Washington and Chicago Urban Leagues have expanded their staffs in order to deal more cogently with the problems of returning veterans, and with all the various and interrelated problems of the poor: bad education, bad housing, bad medical care, bad jobs.

THE LONG VIEW: EDUCATIONAL CHANGE

Career development and occupational training is the here-and-now response to the fact of the high-school dropout. Long range, the obvious answer is the improvement of the public schools. In its grants to schools and school systems the Foundation has kept two goals in mind: a better life inside the classroom, better teaching of a wider range of subjects; and a better life outside the classroom, the active use of the school in the day-to-day life of the community, and the active participation of the community in the schools.

A series of grants that works toward both of these goals at once is an internship program for inner-city school administrators.

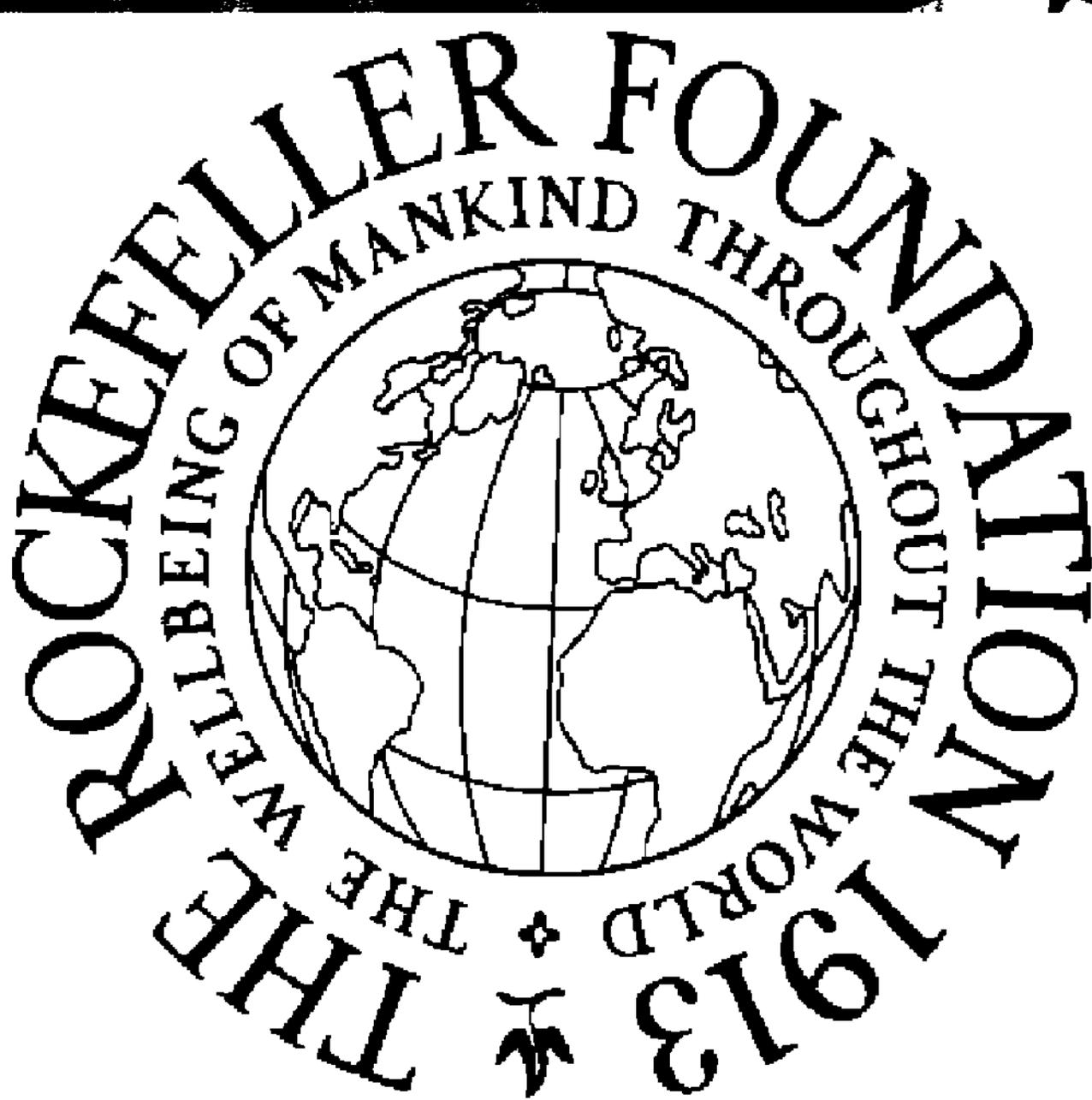
The large number of minority-group students in public schools today are, by and large, under the authority of white principals, school superintendents, and school boards: school administrators generally do not reflect the racial make-up of either the school or the community. At the same time, there are increasing numbers of young, energetic, and imaginative minority-group teachers who would make excellent administrators if properly trained and given the opportunity to lead and manage.

College-level courses in educational administration alone no longer constitute adequate training: for one thing, they usually fail to deal with the reality of the surrounding community. Also, for most teachers the accumulation of education credits is painfully slow. Many teachers become principals after too many years in the system have reduced their flexibility; many become principals without having had the opportunity to see a good school in operation.

A few school systems have broken with tradition and created new sets of requirements. They have appointed principals who are young and creative, but who are, in many instances, inadequately prepared operationally or functionally.

In a situation that is, then, either one extreme or the other, Foundation officers put together an on-the-job training program to prepare future principals for the realities of school and community life. Young teachers—potential

Jim Taylor, now Deputy Superintendent of the Los Angeles City Unified School District, was until 1969 principal of Locke High School in Los Angeles. In that role he administered several programs in the high school in cooperation with California State College. Tutoring, the use of parents as classroom aides, community-oriented curricula, and the provision of day care—have all served to demonstrate how a college can help an inner-city school improve its educational program and more effectively serve its community.



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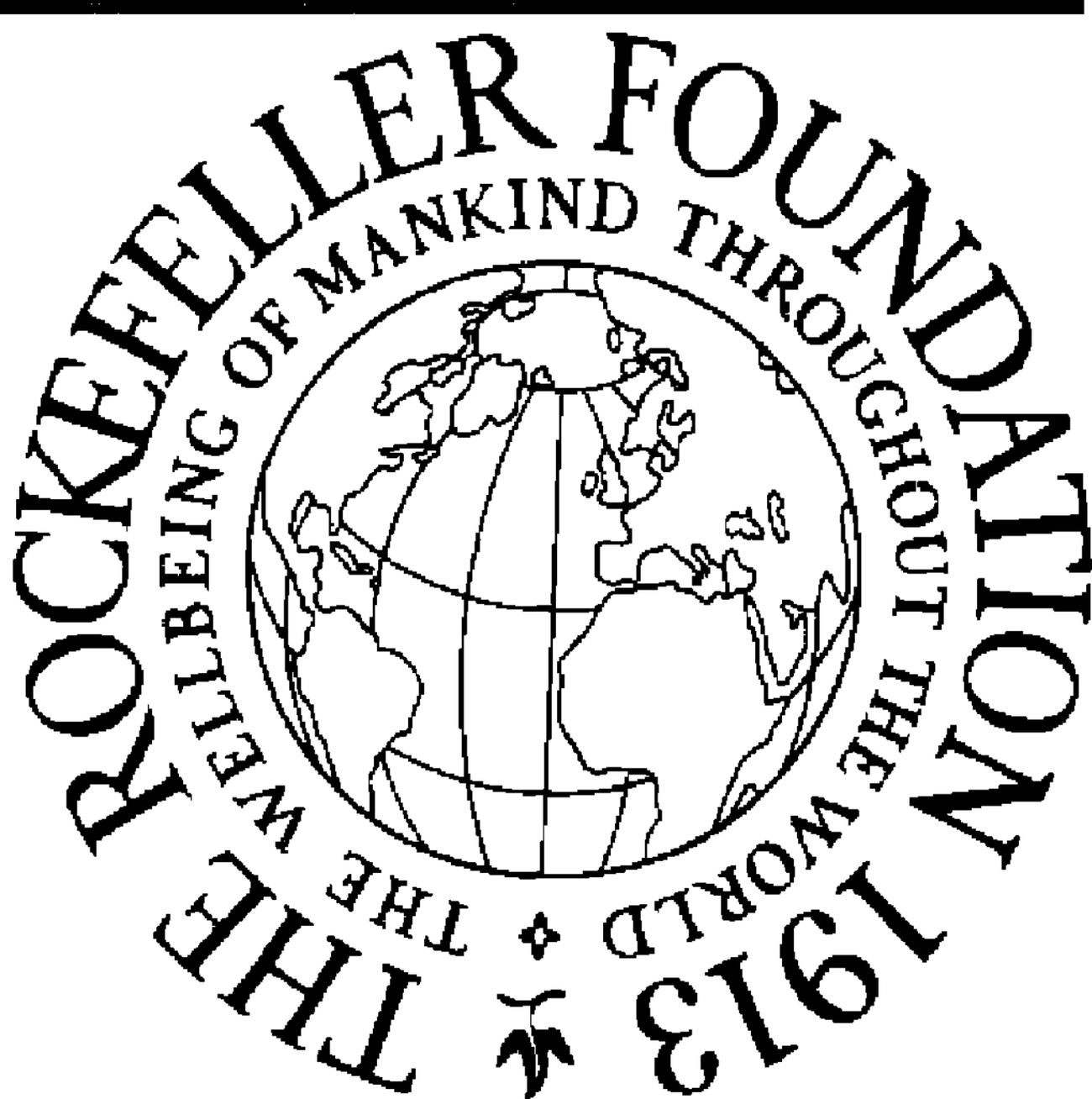
principals—are placed for a year as interns with particularly successful administrators. They work with community organizations, welfare agencies, parents, and local businessmen—as well as with teachers, students, and school boards. At the end of the internship year, they are assured a job at the principal or assistant principal level.

In Baltimore, an internship program was begun in 1969 with five interns. The following year the number of interns was doubled. All 15 interns are now in responsible administrative jobs, and one of them has received national recognition for the development and administration of an exemplary early-childhood development program. This year a similar program was begun in the public schools of Washington, D. C. Problems exist in these programs, but the demand for these men and women is high. To the Foundation and to cooperating school officials it is a necessarily small-scale but highly effective contribution toward better schools.

The same general idea, with a few significant differences, was applied to young minority-group administrators who needed experience at the superintendent level. In this program young men and women with appropriate academic credentials and some administrative experience apply for individual fellowships directly to the Foundation; applications are reviewed first by a screening committee and then by a selection committee made up of superintendents, program consultants, and Foundation staff.

The superintendent fellows travel outside their own school systems to spend a year in a superintendent's office in two different cities—one semester in each city. This year ten young men were appointed to work with particularly gifted and experienced administrators—among them, Norman Drachler, while school superintendent in Detroit, Mark Shedd, then in Philadelphia, John Davis of Minneapolis, Marcus Foster of Oakland, Gordon McAndrew of Gary, Hugh Scott of Washington, D. C., and Richard Foster of Berkeley. Fellows worked on decentralization, bond referendums, court litigations, curriculum—the variety of things that are handled through a superintendent's office.

William Pinderhughes directed an administrative internship program for the Baltimore public schools until his sudden death in March, 1972. Outstanding teachers and beginning administrators who want specifically to work in inner-city schools work for a year with elementary school principals to become thoroughly acquainted with the problems and opportunities that exist in such schools.



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THE RURAL POOR

The problems of the cities—particularly the crowded and decaying inner cities—have been made more extreme by mass migrations away from the farms and small towns of the South and Southwest. These blighted, isolated communities, once profitable farm or mining villages, have been passed over by a technical, industrial society. In a very real sense, here is where big-city slums begin.

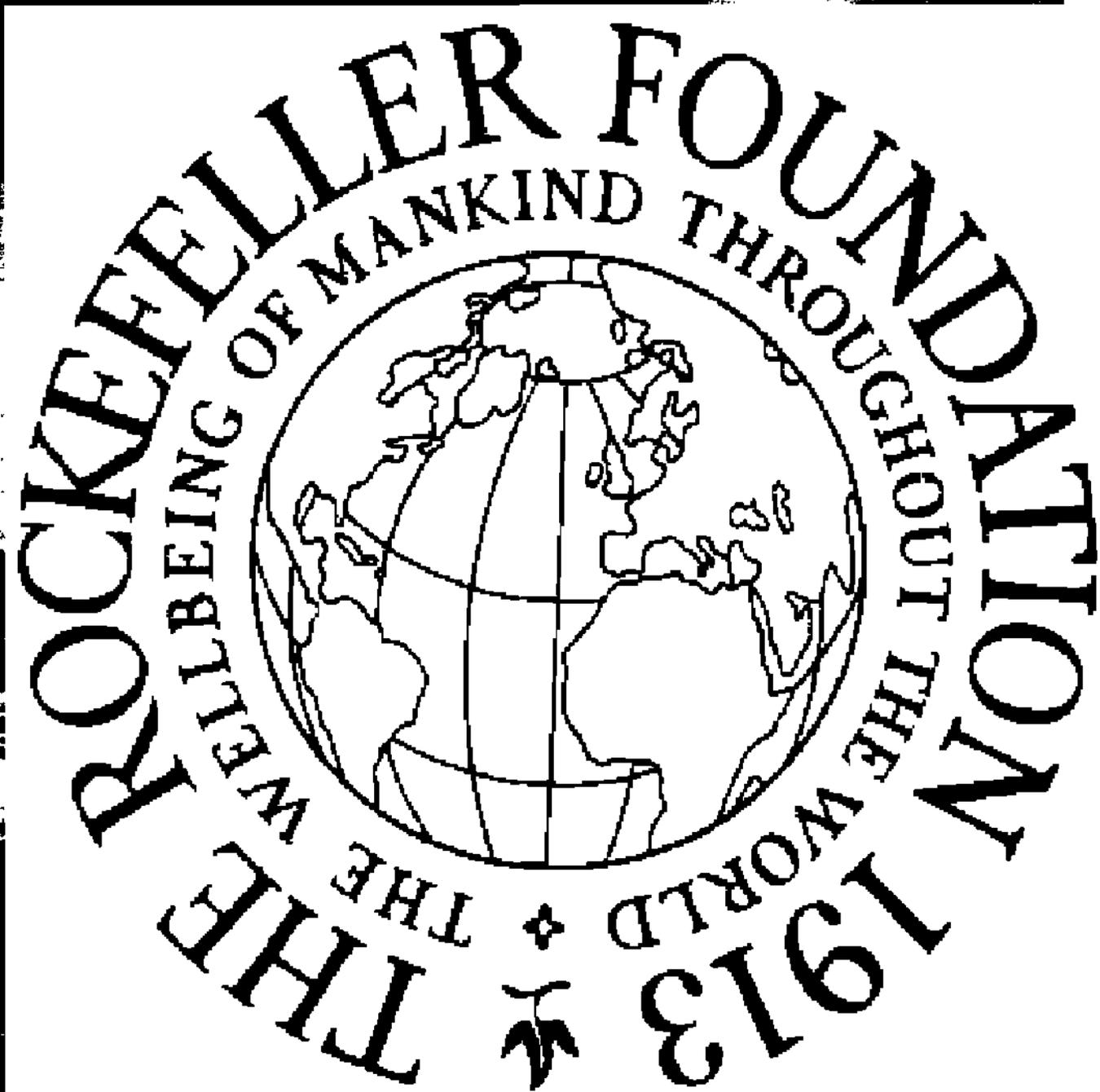
To help stem the flood of people to the cities, the Foundation has funded efforts at making life more supportable in depressed rural areas.

In the hill country of West Virginia, farmers are being taught to substitute livestock and forage crops for the traditional field crops which are grown more profitably on level land. Specialists and students from West Virginia University are operating this project experimentally in two rural counties: it is primarily an agricultural effort, but staff members are also working to upgrade education, health care, and the collection and disposal of solid wastes.

North Carolina's College of the Albemarle, in the low-lying northeast corner of the state, is a two-year community college serving a scattered population whose average income is \$1,500 a year. The college works to make itself accessible—physically, by operating school buses which make trips of up to 60 miles each day; and academically, by offering, as well as the traditional courses open to high-school graduates, a number of job-training courses open to anyone. College staff are working to bring new industry into the Albemarle area, for which they will provide trained personnel. In other words, the college is as interested in economic development as in education, and is looking for new ways to make itself effective in both areas.

These are two examples of several approaches to support self-help programs and mobilize community resources. By and large, however, the Foundation, like others in the field, has not yet identified the combination of factors that could help to make a decisive difference.

Jean Fairfax is director of the Division of Legal Information and Community Service of the NAACP Legal Defense and Educational Fund. The division, created in 1965, has regional offices in Charlotte, Memphis, and Los Angeles; it provides clear information about government assistance programs—including how to qualify for them—and monitors services and programs for the poor to ensure compliance with the civil rights laws.



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THE ROAD AHEAD

On balance, how has the Foundation's Equal Opportunity Program measured up to the demands of the decade?

The sixties were violent, angry, revolutionary—and exuberant. As the decade wore on, Foundation staff learned what the nation learned to its sorrow: there are no easy answers. The War on Poverty, begun with such assurance, the real insights and arguments of the nation's young people, were perhaps only (to borrow a phrase) Phase I.

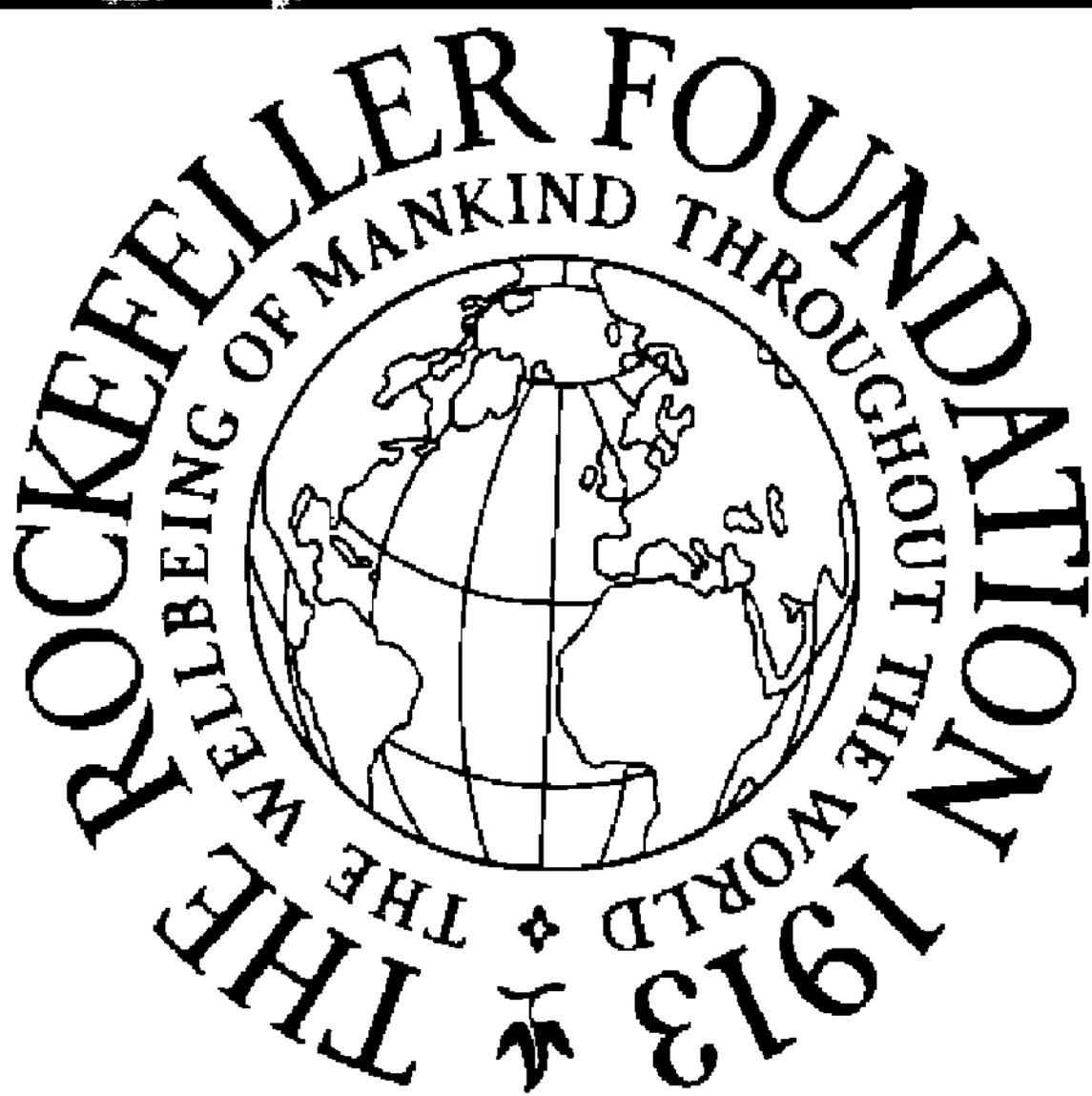
The Foundation learned, for example, that a job-training program with a 30 percent dropout rate must be considered very successful; that programs which amply proved themselves under Foundation funding were not always picked up by other, local, agencies; that good ideas—for all the effort and intelligence put into making them workable—often got lost in a tangle of red tape.

The less dramatic seventies will perhaps be years of working through—carefully and day by day—the hard lessons we have recently learned. The truism is that individuals and institutions resist change. Equally true—the desire, throughout the country, for a new American way of life is deeply rooted and intense. Fundamental change—of individuals and institutions in particular, and of society in general—is going to be painful, often invisible, and undoubtedly slow. It is to this great problem that the Foundation will address itself in the decade to come.

CULTURAL DEVELOPMENT

For the arts the past decade was the liveliest in the nation's history. The sixties gave us Happenings, multimedia and light shows; pop, kinetic, minimal art, and a return to the human figure; electronic music, chance music, and rock; Off-Off-Broadway, black theatre and street theatre; the 16-mm film-

Ned Coll heads the Revitalization Corps, a volunteer organization with headquarters in Hartford, Connecticut, that has had considerable success in breaking down the misconceptions that exist between black and white. Operation Bridge, its tutorial program, brings middle-class citizens — housewives, insurance salesmen, students, and factory workers — into the children's homes, and the children into the homes of the volunteers.



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maker, public television and experimental video. The arts center took root in urban America.

They were years of cultural sloganeering, of demands for relevance, dialogue, confrontation, and involvement with great social and moral issues of the period.

“The new viewpoint,” said the Foundation in 1968, concerning the rapid expansion of the arts, “looks at culture not as a commodity but as a condition. In this sense, participatory democracy is related to participatory theatre and visual art; technology influences art forms: interculturization affects arts and philosophy; and the civil rights movement leads to new political, economic, and artistic positions. The politicization of the arts represents a conviction that the arts play a vital role in the establishment and the debate of the most essential values of our society.”

With the beginning of the seventies, much of the furor seems to have spent itself, leaving behind concepts, movements, and institutions which are well-rooted and good, and much that while still in embryo gives promise of a healthy future.

The Foundation undertook its first program of support in the arts—specifically to music, theatre, and dance—in 1963, against this background of intense creativity. From among the various options offered by artists and organizations claiming priority for support, the Foundation noted three prevalent themes: the desire to make the arts increasingly available to all; the desire for greater participation and involvement; and the desire of creative artists to experiment with forms, styles, and techniques. Casting a backward glance, the Foundation recognizes that two of the most helpful means of achieving these ends have been the support of the creative person and the support for bringing into being creative environments.

THE CREATIVE PERSON: THE WRITER

In seeking men and women with the gift for truly original and creative work, the Foundation has taken care not to develop, however inadvertently,

Ralph Shapey is musical director of the Contemporary Chamber Players at the University of Chicago. The group is made up of graduate fellows from the Department of Music, augmented by professional performers. Its performances of the best in twentieth-century music have been acclaimed by critics for combining technical skill with sympathetic understanding.



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a Rockefeller esthetic. Through the use of authorities in many parts of the country as regional nominators, juries, and consultants, and by diligent opinion-seeking, the Foundation has tried to identify—solely on the basis of artistic promise—those people with the most creative roles in their fields. In the theatre the Foundation considered the problems of the playwright; for concert music, those of the composer; and for the dance, the choreographer.

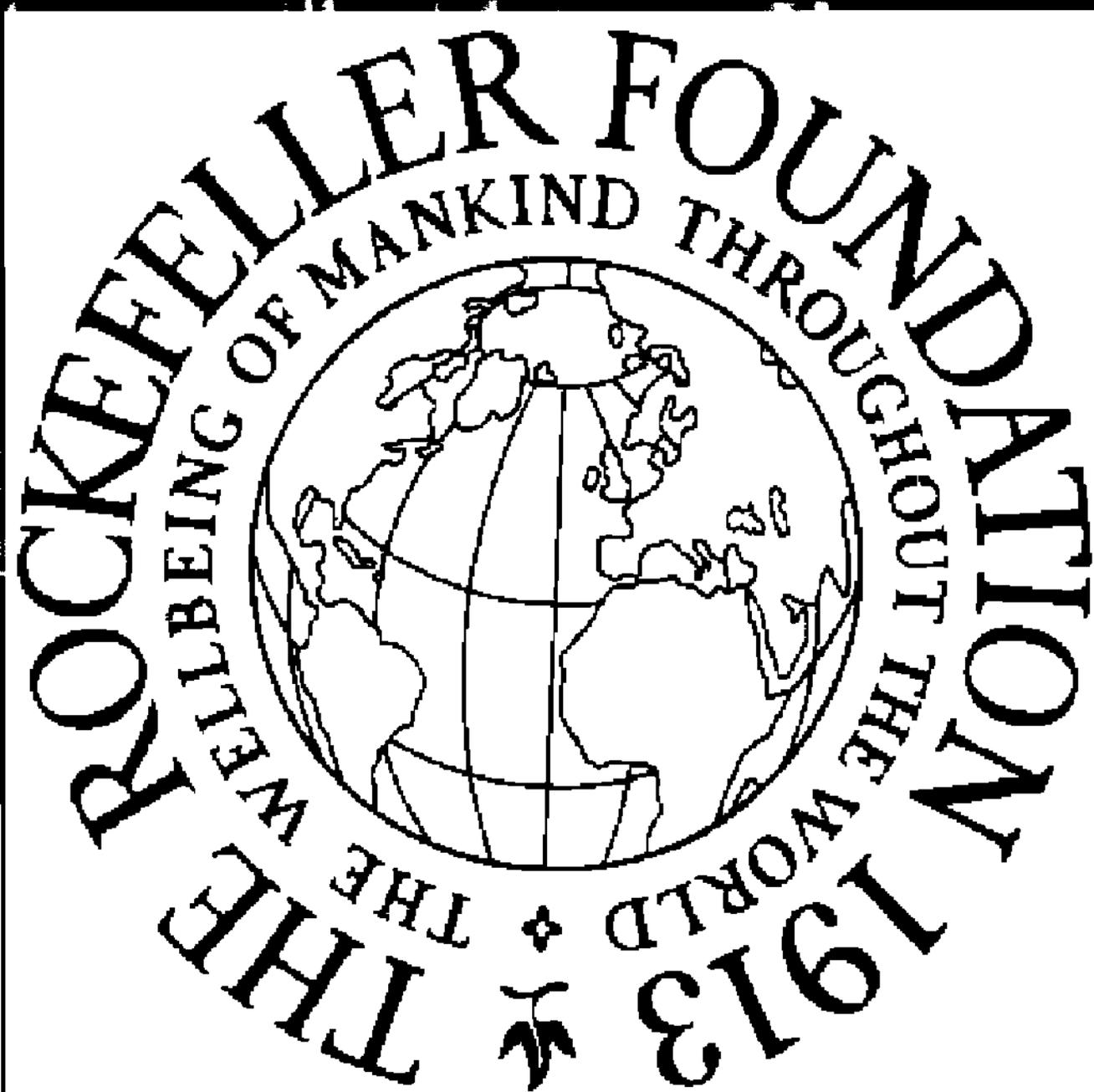
It is in theatre that the Foundation has had the most success thus far. Responding to a ferment of theatre in New York, the Foundation encouraged new playwrights through direct assistance of several playwright-oriented organizations. It helped find new audiences in many parts of the country, many of them surprisingly large and responsive. Of the 30 young men and women who, while still unknown, received individual awards to allow them to work full time on their writing, virtually every one has had works produced repeatedly. A surprisingly large number of this group today are receiving critical and commercial recognition as serious artists that could eventually place them in the top ranks of American playwrights. The Foundation's work has made a difference. Today the place of the playwright is more secure and better recognized than it was ten years ago.

In 1965 the Foundation began a program of individual assistance to creative writers. The program sought to identify promising writers on the verge of making a contribution to literature, to whom a year of uninterrupted work might make the difference in achieving or not achieving their artistic goals. More than 600 candidates were considered, 79 of them receiving awards. Among them have been the novelists Frank Conroy, Wilfrid Sheed, John Yount, Philip Roth, John Barth and William Gass; the poets Mark Strand, Galway Kinnell, Philip Booth, Jean Valentine, and Louise Hertz; the scholars and essayists Dan Wakefield and Harvey Gross.

THE CREATIVE PERSON: THE COMPOSER

The Beatles created great musical excitement. Little of this excitement, however, found its way into the serious music field. A holding pattern had

Lukas Foss, now music director of the Brooklyn Philharmonia, was previously co-director of the Center of the Creative and Performing Arts, State University at Buffalo. His Evenings for New Music series has provided first performances for major compositions of many contemporary composers. In addition, each year a dozen or more professionals in music and other performing arts are in residence at the center for study, composition, and performance of experimental works in a stimulating academic setting.



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developed in concert music. While there were some attempts to combine old music with intermedia and light shows—a Scriabin evening, for example, in which colored lights would attempt to do for the eye what the music did for the ear—no sustained response was evident from the dominant organizations—the symphony orchestras. Composers were isolated from the mainstream of concert music in academic surroundings. With a few exceptions, Foundation support for the contemporary composer and the performance of his music has not been successful in changing patterns, or creating new opportunities.

When the large symphony orchestras began extending their seasons to offer their musicians longer contracts, the Foundation saw an opportunity to aid the composer by structuring week-long residencies by orchestras on campuses where they read and performed the works of lesser known American composers. The music of more than 280 living Americans was performed under these circumstances by 18 orchestras. The support went for the performers, but it was the composers who benefited. From this group have come a number of composers, many of them black, who would never have been heard from under the symphony tradition.

In a further attempt to close the gap between composer and orchestra, the Foundation initiated a composer-in-residence program. Excellent young composers were linked with major orchestras in a creative way. Music was written, sometimes on commission; it was played, and a few composers began to achieve some national recognition. But the Foundation's hope that the orchestras themselves would contribute toward the support of composers was ill-founded. Orchestras are experiencing financial crises which have done little to strengthen the hands of the daring or imaginative programmers. Conservative tastes prevail and, although many orchestra conductors indicated interest, their boards did not.

There is, perhaps, a special problem in introducing new music to audiences. Literate listeners to the music of the past must learn what amounts to a new language every few years. The continued experimentation by composers with methods of performances and notation can be as difficult and frustrating to the listener as to the performer. But the musical community ought not to break itself into groups and subgroups, with the avant-garde off in its own corner. For one thing, support patterns will not allow this.

The Foundation's designs to give the orchestras, and its patrons, a sense of participation in the creation of the new music did not succeed. The program of orchestral residencies on campus, however, did set patterns with several orchestras which have led to a new awareness of possible liaisons between professional and academic organizations. In retrospect, Foundation-supported groups at universities such as Buffalo, Chicago, and Iowa helped the academically entrenched composers develop their own skills to a

higher degree, and young musicians were taught to cope with the new notational problems. But wider audiences were not demonstrably created, nor did the new music find its way into the mainstream, as the new plays have done.

THE CREATIVE PERSON: THE CHOREOGRAPHER

Classical ballet, like the symphony orchestra and opera, has developed loyal patrons in many American cities who sustain ballet companies beyond box-office returns. Not so for modern dance, one of America's few indigenous art forms, and one in which Foundation interest has centered. What the Foundation has attempted to do, and has accomplished to a degree, is to stimulate a recognition of the choreographer's role as the fountainhead of the creation of new works.

Dance has taken admirable strides in developing larger audiences. Although European choreographers have long held the public's attention, Americans of great distinction, beginning at the turn of the century with Isadora Duncan and Ruth St. Denis, and continuing with their offshoots in Martha Graham, Doris Humphrey, José Limón, Merce Cunningham, Alvin Ailey, Alwin Nikolais, Jerome Robbins, and Anthony Tudor, have given the art of dance new forms and techniques, and broadened its basic scope to include the whole of a powerful theatre experience.

Because of the pivotal role of the choreographer, the Foundation has sought ways of helping him. The playwright or composer can create with paper and pencil. The choreographer must create with living dancers. Grants were therefore made to various important choreographers to work with companies on new works. To make this creative process available to students, a few companies were offered limited residencies at universities, an idea subsequently enlarged in the substantial touring program underwritten by the National Endowment for the Arts.

The major thrust in dance has been to assist new companies to develop away from New York City. The University of Utah, which has a long history of successful work in dance, developed a Repertory Dance Theatre whose dual role was to serve choreographers by making a first-rate company available, and to serve audiences who had little access to the best of American dance. The rapid and remarkable development of this company, to which outstanding choreographers were invited to create new or re-create old works, has been most gratifying to all: a major new company has been added to America's roster of companies.

The North Carolina School of the Arts, which had built in a short time an important dance school, will likewise serve the choreographer and a regional audience, in this case, Southern and Appalachian. Support for the choreographer was also the rationale behind grants to the American Ballet Theater.

CREATIVE ENVIRONMENTS: THE CAMPUS

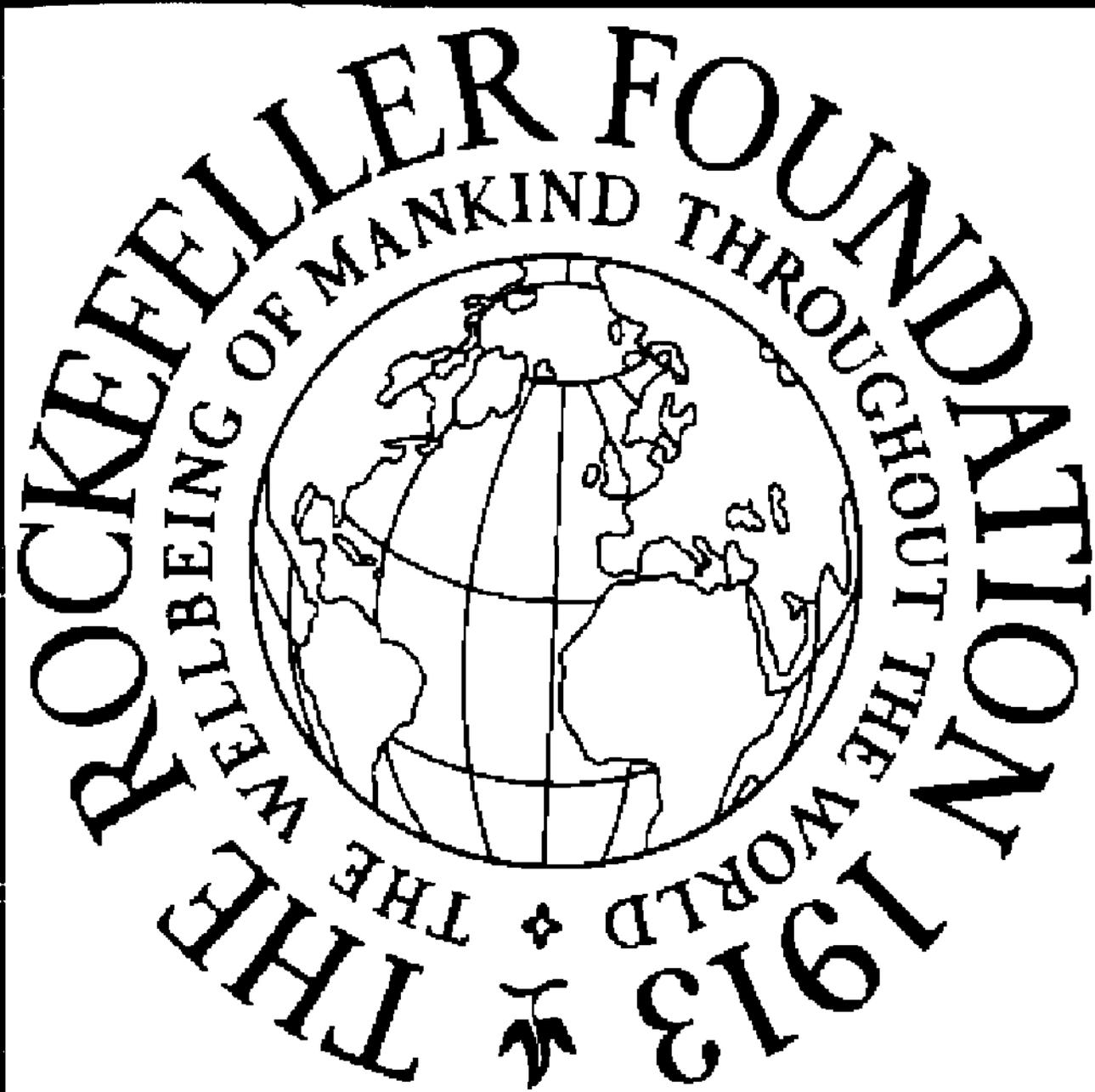
The satisfaction that comes with backing men and women of promise, particularly if the gamble pays off, is deep and lasting. However, the Foundation would be less than frank were it not to stress that it is more at ease with the evaluation and support of institutions than it is in dealing directly with individuals.

There are a number of reasons for this. First, the investigative and decision-making processes involved in a relatively small individual award demand about the same amount of staff time as those dealing with a long-range, substantial institutional grant. Then there is the nagging question of the expertise required to deal with nuances in many fields. Finally, there is the preoccupation with continuity. Men come and go, but the regiment marches on forever: foundations prefer to invest their time and money in the institutions rather than the man. But what kind of institution does nourish the arts and artists?

From the beginning, at a time when this idea was far from fashionable, the Foundation looked to colleges and universities to provide for the arts the same protective environment they have provided for scientific and humanistic scholarship. In the early sixties, the relationship between the arts and academia was clouded by vague mutual antipathies. It seemed to the Foundation, however, that both sides had much to gain from each other. For the campus, a professionalization of its arts activities would offer much to meet present-day student expectations. For the artist, a sympathetic environment, conducive to creativity and leading to sophisticated university audiences, also seemed a good idea. The challenge, obviously, was to identify those campuses that were indeed hospitable to artists.

The Foundation's thinking proved to be relevant to the times: today the performing arts are an important part of curricula and campus life. With Foundation assistance, colleges have professionalized their theatre, music, and dance departments by giving faculty appointments to experienced creators and performers. Others have invited groups to teach and perform for

George White is founder of the Eugene O'Neill Memorial Theater Center in Waterford, Connecticut, which brings together playwrights, critics, teachers, directors, and acting companies for an intensive theatre experience. The center has also become the headquarters for the National Theater Institute, which, working with the theatre departments of many colleges throughout the country, provides a semester of professional training for especially promising undergraduates.



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long and short periods. The continuity so much desired by The Rockefeller Foundation has not always materialized, not because of a lack of enthusiasm but because of budget difficulties. But here and there outstanding groups have developed. Yale's drama department has become once again outstanding. At Iowa and Buffalo, music groups have advanced beyond anyone's expectations.

The previously mentioned Repertory Dance Theatre at the University of Utah, including its Children's Dance Theatre under the aegis of Virginia Tanner, has added an important professional level of dance not only on campus but in the region. Its tours take it throughout the Rocky Mountain area, and it has appeared in eastern cities, including New York, getting respectful attention from critics wherever it has performed.

In several cases, campus programs failed to become permanent, notably a theatre program at Stanford University and a contemporary chamber ensemble program at Rutgers. The North Carolina School of the Arts, however, is proving that a professional arts school supported by the state can generate high-quality performing companies such as the Piedmont Chamber Players and the Dance Company South. A beginning was made toward permanent companies at the University of California (Los Angeles) and the Elma Lewis School of Fine Arts in Boston.

Professionals in the arts, while by no means won over to the academic environment, no longer see it as a barren waste. And academics are beginning to view the aspirations and needs of professionals as consistent with the highest of educational pursuits.

CREATIVE ENVIRONMENTS: THE ENTREPRENEUR

In its search to find stimulating individuals and organizations upon which to build in the arts, the Foundation also recognized the importance of off-campus sources. Foremost among these is one particular catalyst unique to the arts: the selfless, dedicated entrepreneur who realizes himself in promoting the creativity of others. Simply put, these entrepreneurs create a place

Joe Papp is producer of the Public Theater, a theatre complex that in two short years has been acclaimed as providing some of the best theatre in the United States. Besides fostering the work of highly original but hitherto unproduced playwrights, the Public Theater is developing new audiences by offering affordable prices and by publishing new scripts and a theatre journal.



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where the arts can happen, where artists can work and where the public can have access to their work. The Foundation was fortunate in helping key individual entrepreneurs build their organizations and thereby contribute to the creativity of the artist. Among them in the sixties were Joseph Papp (the Public Theater), Gordon Davidson (Mark Taper Forum), Arthur Ballet (Office for Advanced Drama Research), Ellen Stewart (LaMama), Wynn Handman (American Place Theatre), George White (Eugene O'Neill Memorial Theater), and Harvey Lichtenstein (Brooklyn Academy of Music). All have developed training and producing organizations that are now a permanent part of the cultural scene in America and of considerable influence abroad. In every instance, the institution is at the service of the creative artist.

At the University of Minnesota, in the Office for Advanced Drama Research, Arthur Ballet has revealed an uncanny eye, or ear, for the manuscript in which he detects what he calls "a voice"—that is, a writer with something distinctive to say, who merits encouragement. This takes the form of a recommendation to some academic or regional performing company to which Ballet thinks the new playwright's work may be suited.

One of the most imaginative and versatile companies in which the budding playwright's work is tested in performance is the LaMama Experimental Theatre Club in New York. Many exceptionally gifted people, who have gone on to popular and critical success, have honed their talents at LaMama. Among them are names now identified with Broadway, such as Tom O'Horgan and John Guare; and names identified with black theatre, such as Ed Bullins, who has dedicated his work to the New Lafayette Theatre in Harlem. But the key name is that of Ellen Stewart, founder and for years sole supporter of the institution, now recognized by avant-garde theatre people all over the world.

At the O'Neill Memorial Theater Center in Waterford, Connecticut, George White, its founder-director, has had steadfast backing from the Foundation to provide a setting for the performance and evaluation of plays by writers who are just completing their apprenticeship. The center today

Ellen Stewart, founder of the LaMama Experimental Theatre on New York's Lower East Side, has been particularly successful in discovering and producing gifted new playwrights. Under her guidance the group has grown into an internationally important showcase for new plays and a center for experimentation in new forms and styles of theatre.



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has cooperative working relationships with the drama departments of 32 universities in the United States.

At the American Place Theatre, new playwrights, many of them writers of great distinction in other fields, find a sympathetic place in which to have their works staged. Joseph Papp's indomitable determination to stage not only Shakespeare but also new plays for new audiences has made him perhaps the single most respected producer in America today. In Los Angeles, Gordon Davidson's Monday-night stagings of new playwrights have influenced theatre all over the country. Harvey Lichtenstein took a moribund Brooklyn landmark and in it established truly exciting theatre and dance companies.

OTHER EXPLORATIONS

Television became potentially a form of art in the sixties. The medium had not previously been investigated by artists except in a piecemeal way. Only a few voices in the wilderness called attention to the fact that the electron itself was a basic and elemental force, and that the cathode ray tube was an instrument of an esthetic potential undreamed of by commercial programmers and industry technicians. Among those voices were those of Nam June Paik, a Korean artist, Brice Howard and Paul Kaufman, staff members of KQED-TV in San Francisco, and Fred Barzyk at WGBH in Boston. The Foundation underwrote pure experimentation in video by inviting artists and scholars to express themselves in electronic-visual forms. Through the experimental workshops thus established, important new concepts and techniques in video have been developed which are of wide applicability to the practical art of television production, including breakthroughs in television programming and closed-circuit experimentation. The workshop at KQED, for example, was so successful that it became the National Center for Experiments in Television. With Foundation assistance, the center is helping create experimental video workshops on campuses around the country. For a generation to whom the television set—in Buckminster Fuller's words, the "third parent"—has been a force of overriding importance, this experimentation is timely.

Brice Howard (left) and Paul Kaufman are founders of the National Center for Experiments in Television, an adjunct of television station KQED in San Francisco. In a workshop program that is rapidly reaching out to college campuses, artists and technicians explore the medium of television as experimental art and communication forms.



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There is a need to stimulate good teaching in the arts. At its best, music education in the public schools, for example, can provide a link between the amateur and the professional, challenging young people to reach their own best potential in performance and appreciation. The Foundation sought educational programs which were outside the scholastic routine. The summer programs at the Oberlin College Conservatory, for example, provided an opportunity for music teachers to return to a professional atmosphere after having been in the educational world for many years. For gifted young people programs of instruction have been provided in several ways, notably in the form of scholarship support to six major American conservatories.

One special project deserves mention in that it addresses itself to a problem occurring in many areas. The Brevard Music Center in North Carolina developed with Foundation support a program aimed at a problem found throughout the Southeast: the general scantiness of professional music resources in public schools and the reduction of even those resources as rural schools lost enrollment and thereby state funds. The Brevard idea was to offer talented high school musicians intensive training under full scholarship during a summer session. The students then returned to their home school where they functioned as teachers' aides, providing a variety of para-professional services greatly improving the efficiency of the music program in the schools. This program could have impact on general education in music and the other arts throughout the country.

From its beginnings, the Foundation recognized that to many people outside the mainstream of American life, participation in the arts is often strikingly meaningful. This is not to say that art is a substitute for equal economic opportunity. It is, however, a means of self-realization and affirmation that can be of particular value to people whose cultural identity is belittled by society. Over the years, the Foundation has made grants to artistic groups in ghettos and in isolated rural areas, to help them realize themselves through creativity and performance. This is, in point of fact, a very ancient use of music, dance, and drama, one as relevant today as it was thousands of years ago.

THE FUTURE

The Foundation's Cultural Development Program consists of arts and the humanities. The decade ahead is of promise to the arts, as new sources of support begin to recognize the importance of artistic expression of ideals and consciousness to our society at large. The work begun in theatre, music, dance, and television in the sixties may, with proper support, contribute

substantially to the sense of mutual understanding so wished for today. For the arts, as they mirror our times, also foreshadow our future. From all indications, that future is not without hope.

It should be clear from the foregoing description that the Foundation has been more successful in the arts than in humanities—for which the sixties were a thoroughly depressing and depressed time. Learned journals, convention speeches, popular magazines, and television debates lamented the fact that the humanities, if not dead, were certainly very sick. But now a slow but definite rejuvenation is noticeable. The inauguration in Washington this year of an annual Jefferson Lectureship in the Humanities is indicative of faint stirrings which the growing National Endowment for the Humanities has helped to foster and support.

Given the activity of that vigorous young public foundation, will there be a creative role for The Rockefeller Foundation in the humanities as the seventies unfold? It would seem strange if there were not, for the scientific achievements which have brought distinction to the Foundation have generally been complemented by vigorous humanistic efforts. (For example, while the Foundation was sponsoring the Peking Union Medical College over several decades, it was also pioneering an awareness of Chinese history and culture within American universities.)

Two important areas of cultural development in which the Foundation is well equipped to contribute involve the relation between science and the humanities and the relation between western and non-western societies. This task becomes increasingly plausible as scientists and humanists realize their close interdependency in the present world. Common concerns with population, hunger, and environment have underscored this closeness. Some of the Foundation's efforts in the near future will be directed toward vitalizing the humanistic component of work in these areas and reasserting the conviction that historical and ethical insights are of central importance.

Appropriately, the first area singled out for intensive consideration centered around America's own history. The lapse in our historical consciousness which characterized the late sixties, and the approach of the nation's 200th anniversary have brought home the truth of Thomas Jefferson's remark that the present is the past unfinished. Experimental grants have been established to support a small number of scholars and institutions engaged in the reinterpretation of America's cultural heritage, for it was clear that in this area questions of equal opportunity (the history of minority groups, for example) and of cultural development often overlapped. The interest and the possibilities have already proven great enough to suggest the need for a more sharpened focus over a sustained period, comparable to earlier Foundation programs in area studies, international affairs, and legal philosophy.

Where science offers far-reaching breakthroughs and decisive solutions, the arts and humanities provide unbroken patterns and enduring wisdom. As we seek the specific answers made accessible by the sciences, should we not pay increased attention to the enduring questions posed by the humanities?

QUALITY OF THE ENVIRONMENT

Concern for the deterioration of the environment is today virtually a universal phenomenon in high-technology nations. It is a fortunate man indeed who finds no fault with the air he breathes, the water he drinks, the landscape that surrounds him, the disposition of refuse, or the noisy violation of his privacy. These are observable manifestations of pollution; trace impurities in food are an example of debasement too subtle to be aware of, yet increasingly present, and in some cases definitely harmful.

Private and public citizens are increasingly worried about the deterioration of the environment, the depletion of natural resources, and the degradation of the quality of life in our modern world. General anxiety expresses itself in government action as well as in consumer drives and in local campaigns to correct abuses, to preserve the few remaining unspoiled landscapes, and to regulate or penalize polluters. But the problems involved are too complex and too interrelated to be easily solved even with the best of good will. Basic information is lacking for formulation of comprehensive, long-range programs. Moreover, projects hastily undertaken on incomplete or faulty information, such as the phosphate detergent muddle, have left many people confused and skeptical. And since the achievement of clean air, water, and soil is costly and may entail an invasion of the autonomy of the private citizen or of private enterprise in the cause of the common good, resistance to clean-up or conservation measures may arise as much from apathy, ignorance, and bewilderment as from legitimate special interest.

John Hawkes, hailed as "an American original," recently published his sixth work of fiction, The Blood Oranges. The Foundation's creative writing project enabled Mr. Hawkes, an associate professor of English at Brown University, to concentrate full time on his writing for a year in 1968.



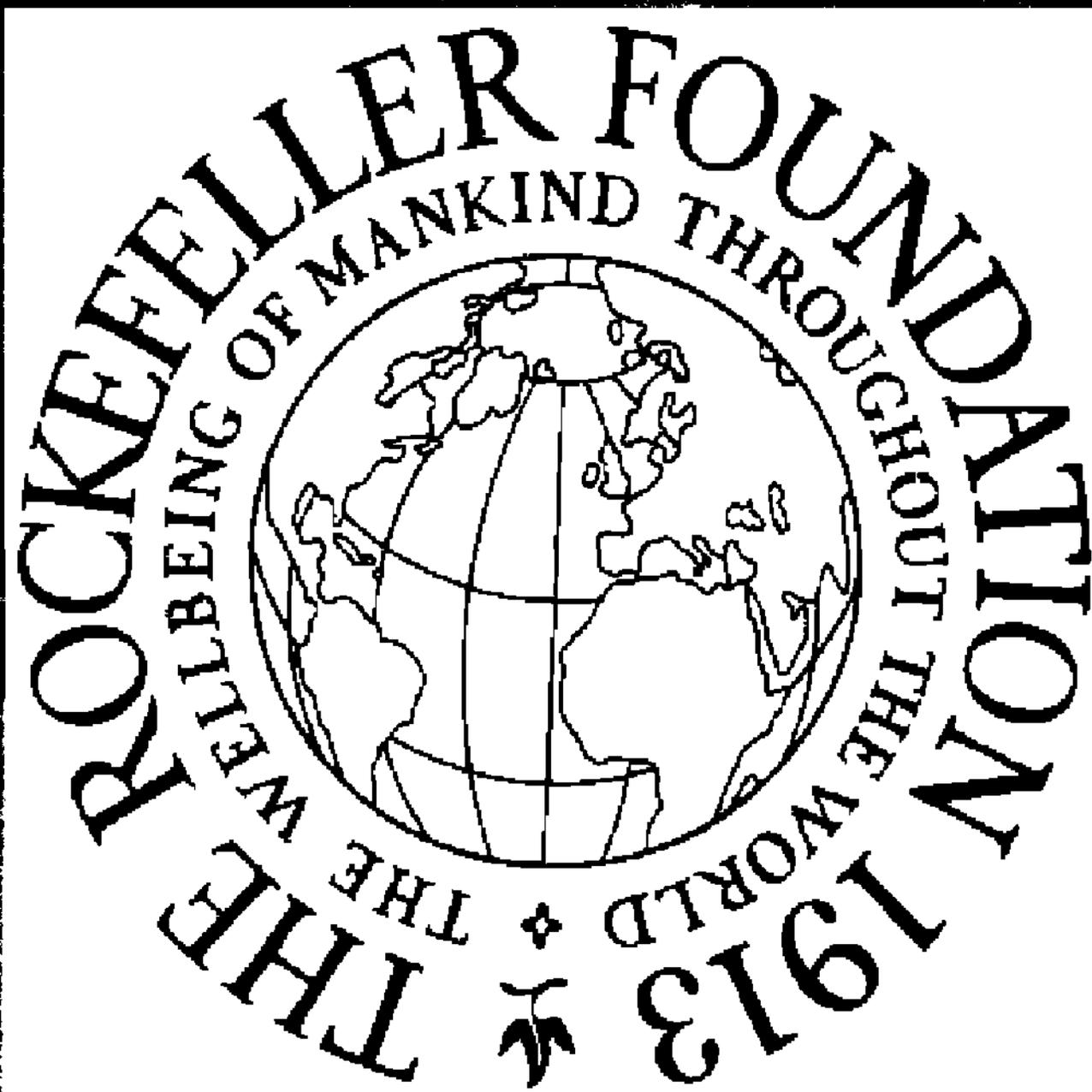
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Motivational factors related to social and economic stresses have to be sorted out along with the biological and technological aspects of pollution. There is obviously a great deal of work to be done in a wide range of fields—the physical and natural sciences, public health, social psychology, economics, engineering, population studies, and still others. Indeed, the question of where to start and how to set up priorities for the allocation of funds and talent is in itself no small problem.

Some environmental decay is clearly linked to population growth and much to affluence; it is most acute in the developed, industrialized nations and seems to follow inevitably upon what had generally been hoped represented the progress of western civilization. Reasoning from these observations, a large group of eminent British scientists recently drew up a Blueprint for Survival, which calls for strenuous population control measures aimed at reducing—not merely stabilizing—the population and for a sharp brake on economic growth. Their thesis is that mankind's very existence now depends on its ability to arrest the headlong pursuit of an affluent, industrialized, consumer-oriented way of life. Unfortunately, history does not offer much support for the notion that man can say no to material gain or to what he has always conceived of as progress, even when he knows he is sapping the earth's resources and wasting the inheritance of future generations.

Nevertheless, controversial as it is, the Blueprint reflects a changing attitude, a new consciousness of man's relationship to the material world, as radical a concept as his discovery of history or of lawfulness in nature. Other alarms have been sounded in this country and elsewhere, echoing a similar sense of urgency. When the Foundation undertook its program in Quality of the Environment in 1969, Dr. Harrar pointed out that man has already "drastically altered the ecological balance in many localities, extinguishing certain plant and animal species," and called for a new planetary ethic oriented toward responsible stewardship of the earth's resources. "A basic principle is that man should consider the equilibrium of the environment before initiating any actions that would disturb ecosystems," Dr. Harrar said.

Robert L. Metcalf, an entomologist, heads the University of Illinois research team that has synthesized several DDT-analogs. The new compounds, biodegradable and less persistent than standard DDT, break down rapidly in living systems and promise to overcome the problem of accumulation of DDT in animal tissue.



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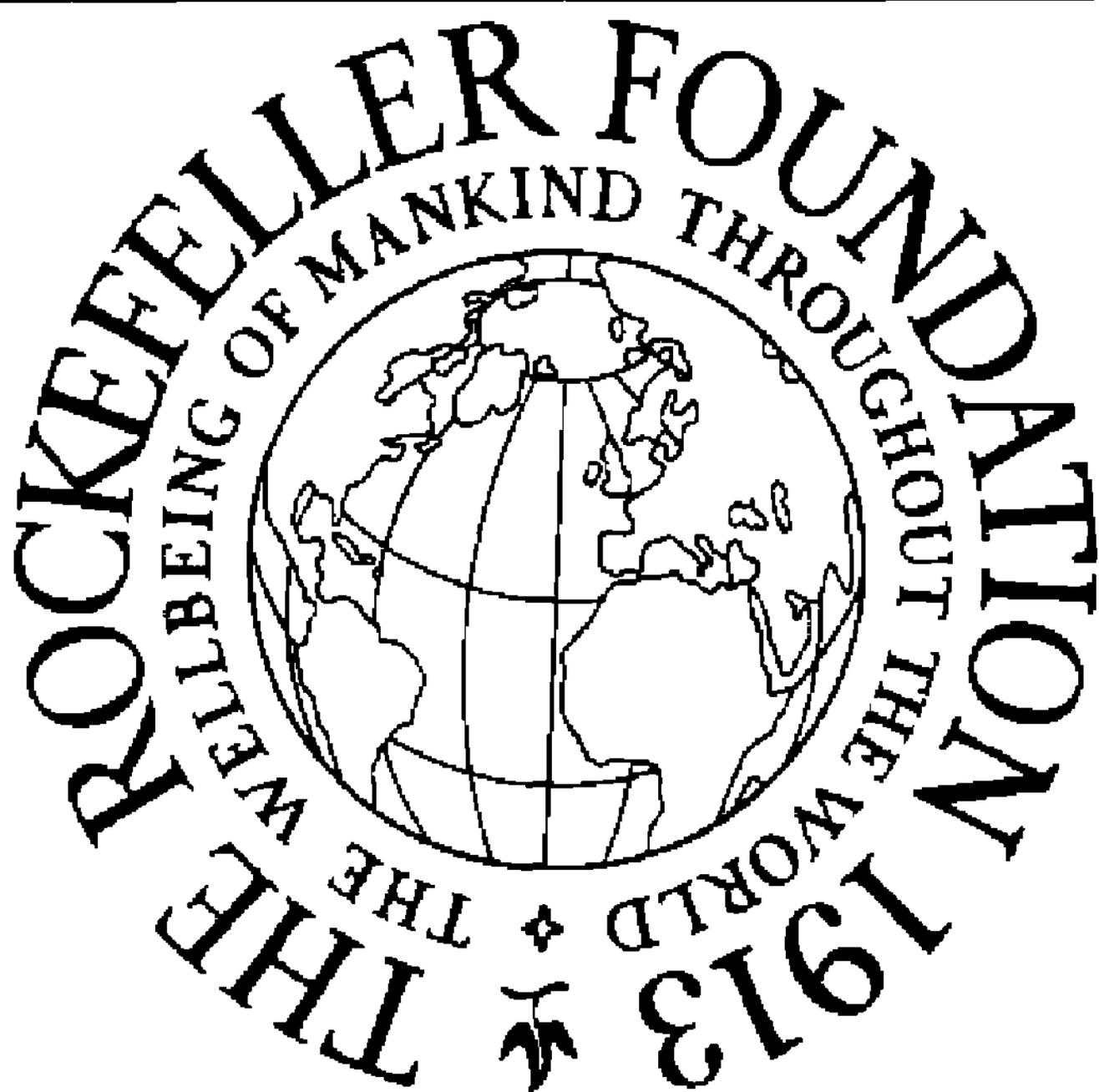
LAUNCHING THE PROGRAM

This most recently adopted Foundation program represents both a realignment of on-going efforts in such fields as population, agriculture, and equality of opportunity (inner-city rehabilitation projects, for example), and a thrust toward newly defined goals. When the program was launched, initial emphasis was placed on training, research, and the establishment of interdisciplinary centers for study and action: training for environmental specialists—research scientists, economists, engineers, technicians, and other experts with strong backgrounds in their own fields linked with an overall understanding of ecological problems; basic research to develop information about ecological systems; investigation of alternatives to dangerous pesticides; and applied research into practical methods for reducing air, water, and soil pollution. An important goal, which will eventually buttress both training and research, is the support of interdisciplinary university engagement in environmental problem solving through encouragement of programs in which specialists from seemingly disparate fields can cooperate in attacking specific pollution problems, contribute to the study of a given ecological system, or enhance awareness and understanding of local problems. Such centers can go a long way toward informing and influencing politicians and decision-makers, offering expert analysis to industries and municipalities, and arousing citizen concern. In particular, they can help educate a whole new generation of students in the importance of taking an ecological view, whatever their individual fields of interest.

ASSESSING OUR RESOURCES

After two years the Foundation has been able to draw certain conclusions about the general state of environmental sciences and related action programs in this country, which may serve as guidelines for future commitment of funds and professional resources. The United States has a strong scientific and technological base, especially in the physical sciences and industry. In the biological sciences, the social sciences, and economics, there is less ready

Carroll M. Williams heads Harvard University's Laboratory of Insect Physiology, a key center of insect physiology research. Professor Williams and his associates are investigating the juvenile hormone — a potential biological pest control agent in that it prevents insects from passing from the larval to the adult stage, thus making them unable to reproduce.



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information upon which to help formulate action programs. Many areas of the biological sciences lack the resources for problem solving; research in academic centers in particular has tended to be overly compartmentalized and to depend on the interests of departments or individual staff members instead of being derived from a disinterested analysis of problems demanding solution. Exceptions are agriculture and the medical sciences, but even here the quality of life is deteriorating faster than institutions can organize the interdisciplinary studies and train the many specialists who are needed to arrest its impairment.

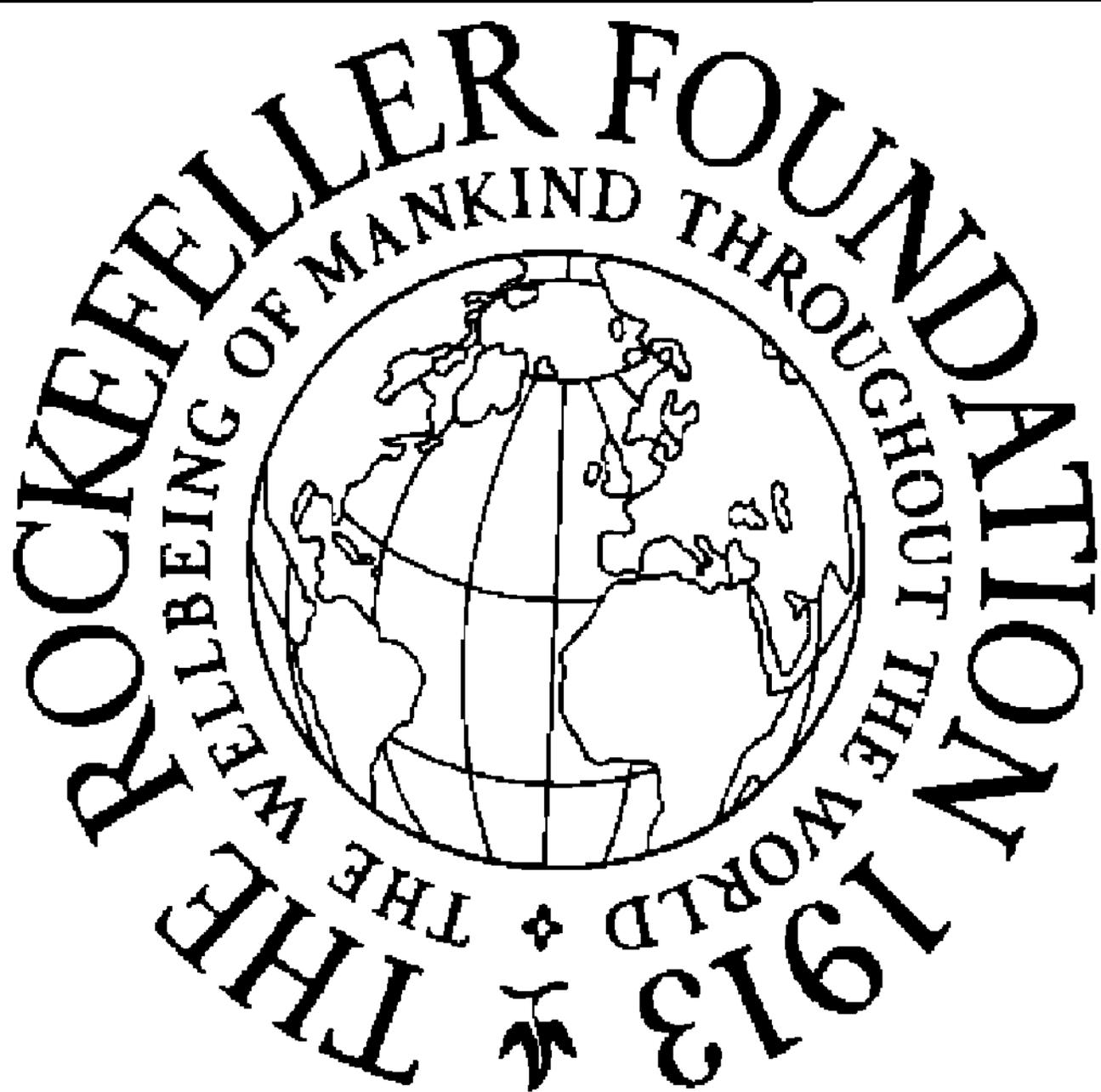
Industry, on the other hand, can move faster to attack specific problems, but most American industries are only beginning to develop a corporate competence in this area and, beyond repairing the actual damage they do, to recognize their larger responsibility to preserve the environment. Another resource, which has gone untapped for lack of leadership, is public opinion. There have been isolated examples of outstanding involvement of the media, of effective citizens' action, even of brilliant leadership; but rational, overall strategies founded on sound information and implemented from a solid organizational base have yet to be developed.

As these points of strength and weakness in our traditional institutions have been progressively defined in the course of its experience with environmental problems, The Rockefeller Foundation has aimed, within the limits of available resources, to design programs that will activate the tremendous latent capacities of our universities and industries and stimulate public awareness and action. This will mean, principally, identifying and demonstrating strategies; combining research with action; creating centers of information with an institutional structure designed to sustain understanding of the problems, and providing leadership for solving them.

THE FOUNDATION'S COMMITMENT

Since 1969 the Foundation has allocated more than \$8 million for its Quality of the Environment Program; grants made this past year totaled more

Ruth Patrick, an eminent limnologist, directs a program of research on the biology of streams at the Academy of Natural Sciences in Philadelphia. This research is providing the factual base upon which effective pollution control regulations can be established. Knowledge of the effects of various polluting substances on living organisms and of the diversity of life and energy balances in fresh-water systems is leading to new concepts of stream management.



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than \$3 million. Moreover, the Foundation's intangible assets—its flexibility, its ability to marshal talent and to facilitate cooperation—which have stood it in good stead in the past in programs of the most diverse nature, are particularly valuable for work in this field, where the emphasis is not only on interdisciplinary and interdepartmental collaboration within universities, but also on cooperation among universities, scientific bodies, government agencies, public utilities, private businesses, citizens' groups, and other organizations.

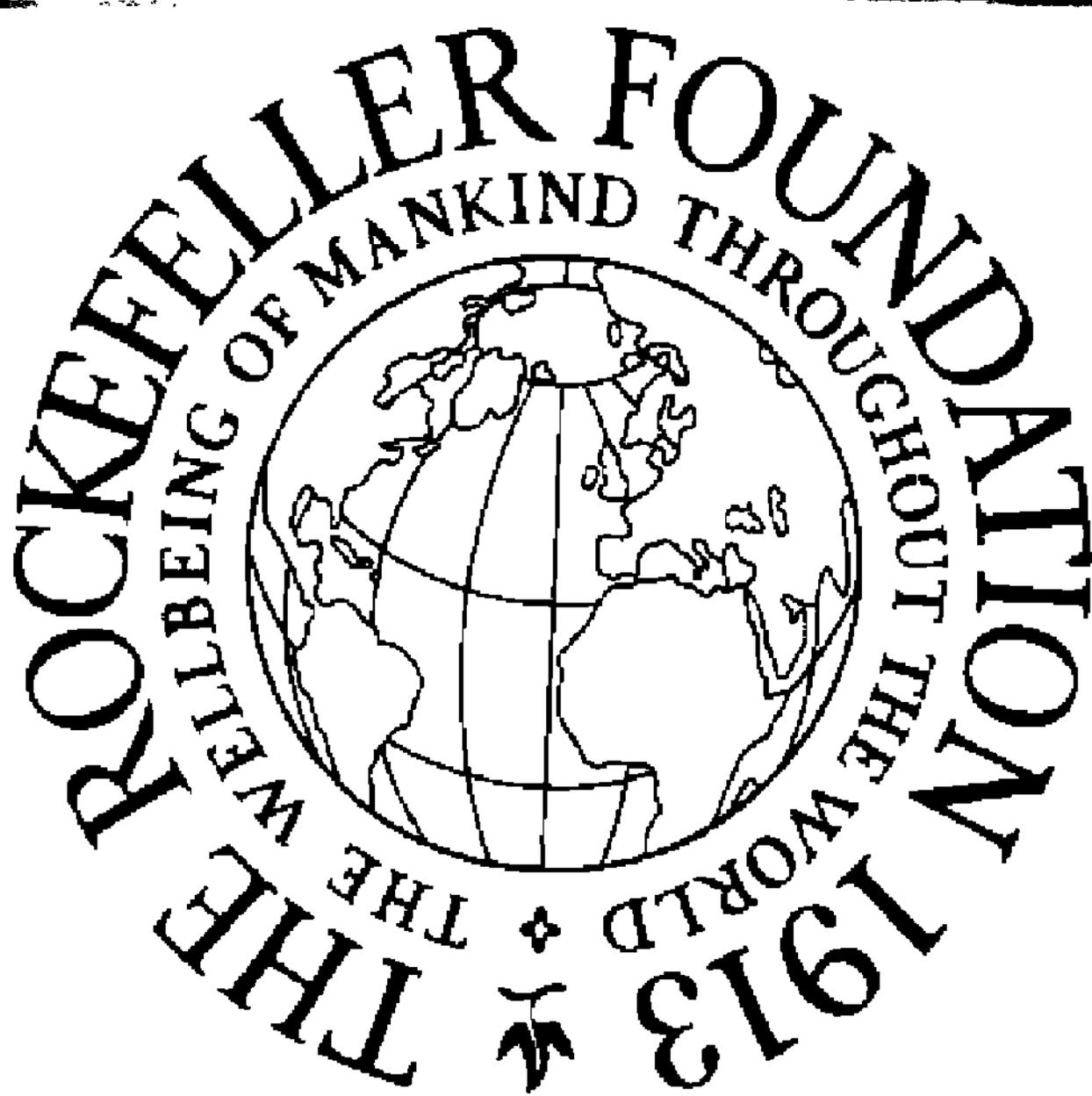
Some points of focus chosen for present and future support by the Foundation include comprehensive management of geographical regions, such as river basins, lakes, and coastal regions; improvement of urban areas; minimizing of hazards associated with major pollutants; development of leadership; and the attempt to place environmental questions in perspective.

For example, the Boyce Thompson Institute for Plant Research is the focus for Foundation support of studies of the ecosystem, particularly the aquatic plant life of the lower Hudson River; its aim is to determine ways of saving the estuary from becoming hopelessly overburdened with pollutants poured into it by towns and industrial plants along its course. Communities along the river are being invited to participate in the work.

Pollution problems of fresh-water streams are being studied, with Foundation assistance, by the Limnology Department of the Academy of Natural Sciences of Philadelphia. A continuing investigation of aquatic insects and microorganisms has suggested new approaches to stream management, which will be tested on other streams that are subject to different pollutant loads. Future support is foreseen for studies dealing with coastal regions, lakes, and other inland waterways.

Pesticide and fertilizer residues as well as wastes from livestock are major contributors to water and soil pollution; yet, say farming experts, they are a necessary side effect of maintaining our high levels of food and fiber production. The Foundation is currently supporting work at several universities aimed at developing insecticides that would attack only a target species and do a minimum of harm to the environment; other research deals with ways

Baird Brown, an economics major at the University of Colorado, served as project director for research on the probable environmental effects of the 1976 Winter Olympics Alpine events. The student-organized study concluded among other things that the previously selected Mt. Sniktau site was unsuitable both economically and ecologically and recommended several other sites.



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to reduce the number of insects by preventing their reproduction. Plant geneticists are attempting to alter the structure of cotton plants and related species in such a way that insects will be less likely to attack them, thus use of harmful insecticides can be reduced. A project at Cornell University is looking into disposal of animal wastes from large-scale, intensive stock raising.

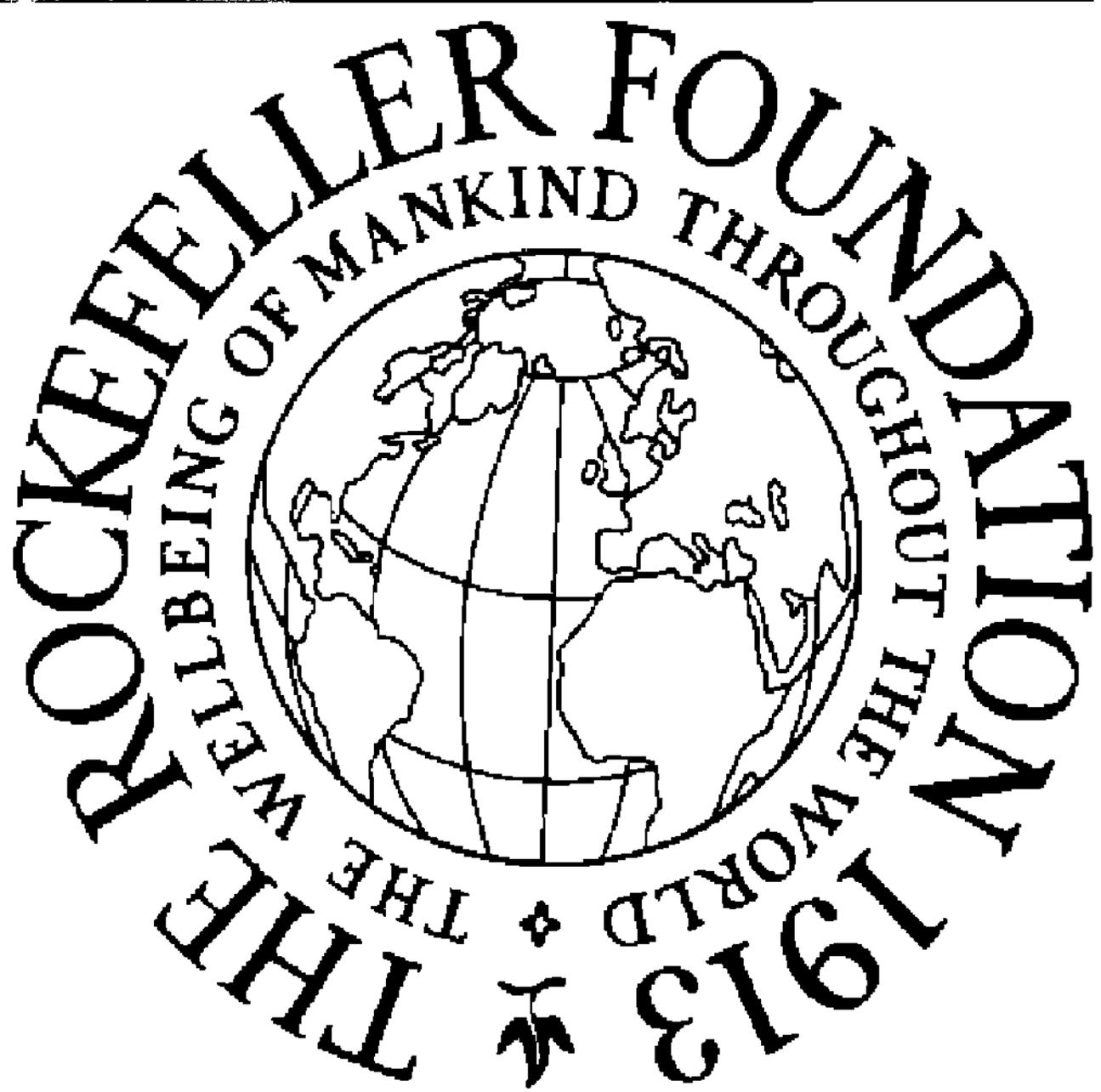
Industrial wastes and the economic and social problems they entail are getting attention from a number of investigators. Broad-based analyses of waste disposal in urban-industrial areas, with a view to designing the most economical means for handling residuals with the least environmental harm, are continuing under the auspices of Resources for the Future, an independent research organization based in Washington, D. C. Researchers are working on an ecological balance sheet that will trace raw materials through extraction, processing, consumption, and disposal; and will figure in cost-benefit relationships at crucial points in the cycle. Their goal is to design an economic model that can be used for various types of manufacturing and urban areas.

A grant to the Rand Corporation is supporting an assessment of the economic impact of policies governing allocation of electrical power in relation to environmental-quality regulations. This study, too, is expected to be widely applicable in planning for meeting future demands for electricity with minimal environmental damage.

The economics of environmental protection, particularly as it affects controversial policy decisions, is being analyzed by the Committee for Economic Development, with the help of a Foundation grant made this year. As an independent, neutral study group, CED is building up a store of information that can be drawn on for mediating disputes where private and public interests clash, or simply where the issues affecting a policy decision are unclear.

While most grants have gone to universities, where the combination of an institutional framework and a concentration of highly trained people augurs success, awards are also being made for activities based outside established

Carl N. Hodges of the University of Arizona has developed an experimental system that produces food, fresh water, and power by linking closed-system greenhouses to a desalinization plant. A similar system is now in operation in the Shaikdom of Abu Dhabi.



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channels. This policy reflects the nature of the program itself: saving the environment is very much everybody's business. This year the Foundation made four grants in support of ecological studies originated and carried out by students; last year it supported a cross-country car race run by students wanting to demonstrate the possibility of designing low-pollution automobiles.

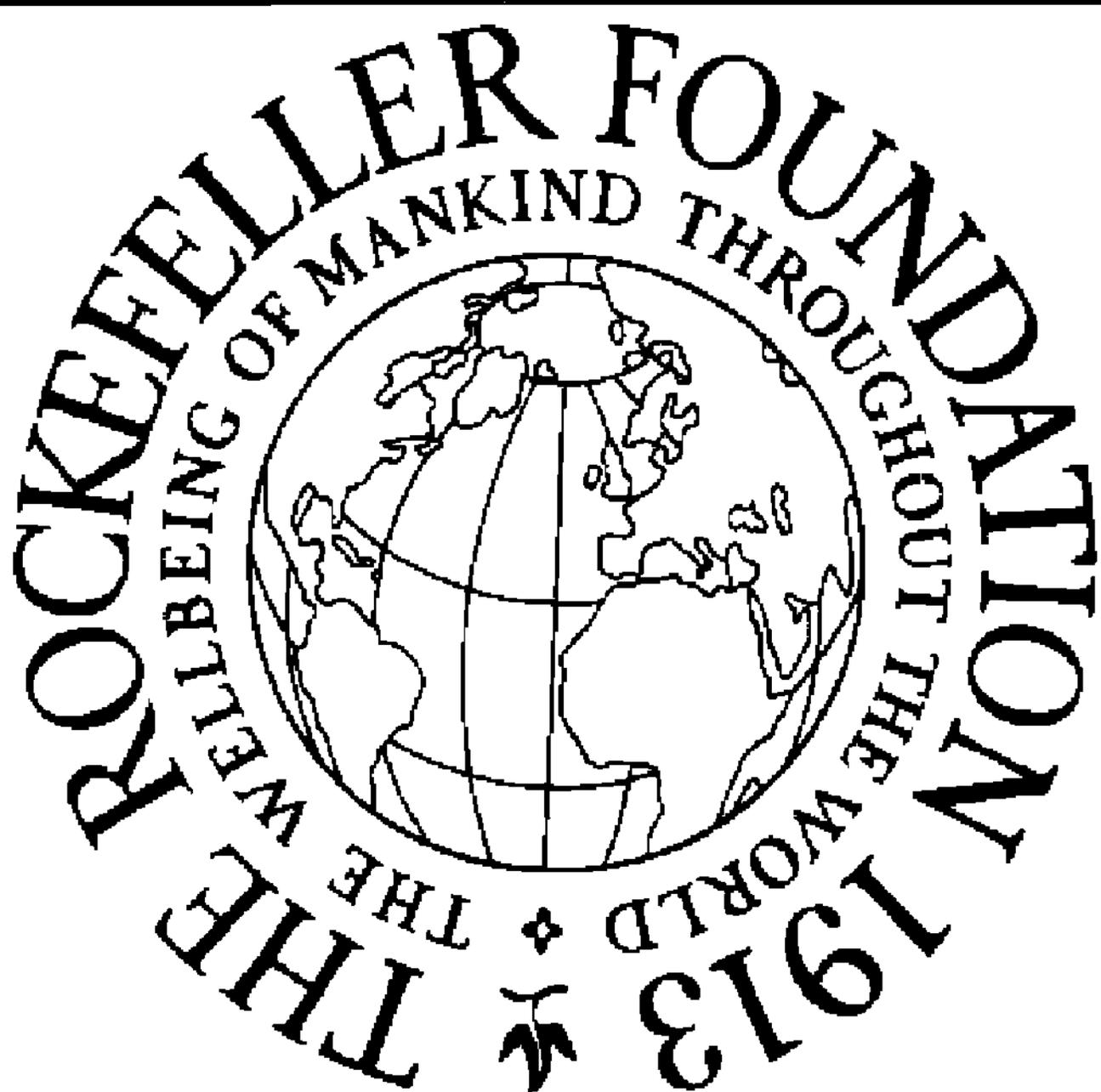
The Foundation believes strongly that the private citizen, as well as the law-maker and the environmental specialist, must participate in solving the ecological dilemma. Some observers have asked whether deterioration and pollution have to pass the point of no return before a society will take constructive action. A long-range social science research project being supported at Princeton University's Woodrow Wilson School of Public and International Affairs is trying to answer basic questions about the generation of community concern and implementation of public policy aimed at preserving the environment.

Ultimately everyone is endangered by foul air, impure water, and toxic chemicals in food; overcrowding and deterioration of cities affect more and more people as populations become more compact and the delivery of goods and services is impaired. A strong base in science and technology, including the social sciences, is paramount for attacking these problems, but citizen involvement, especially of the young, is indispensable.

ALLIED INTERESTS

The Rockefeller Foundation makes grants and operates field programs in a limited number of spheres of activity closely related to its six pivotal interests; most of this support is for work in areas in which the Foundation has a long-standing commitment—delivery of health care, virology research, schistosomiasis control, improvement of international relations—but which have not assumed the proportions of full-fledged Foundation programs. These

An innovative neighborhood health center is being developed in East Baltimore by community leaders with the assistance of Johns Hopkins University. Robert Heyssel, M.D., and Malcolm Peterson, M.D. (right) are key university personnel in the development of this and other new health care projects.



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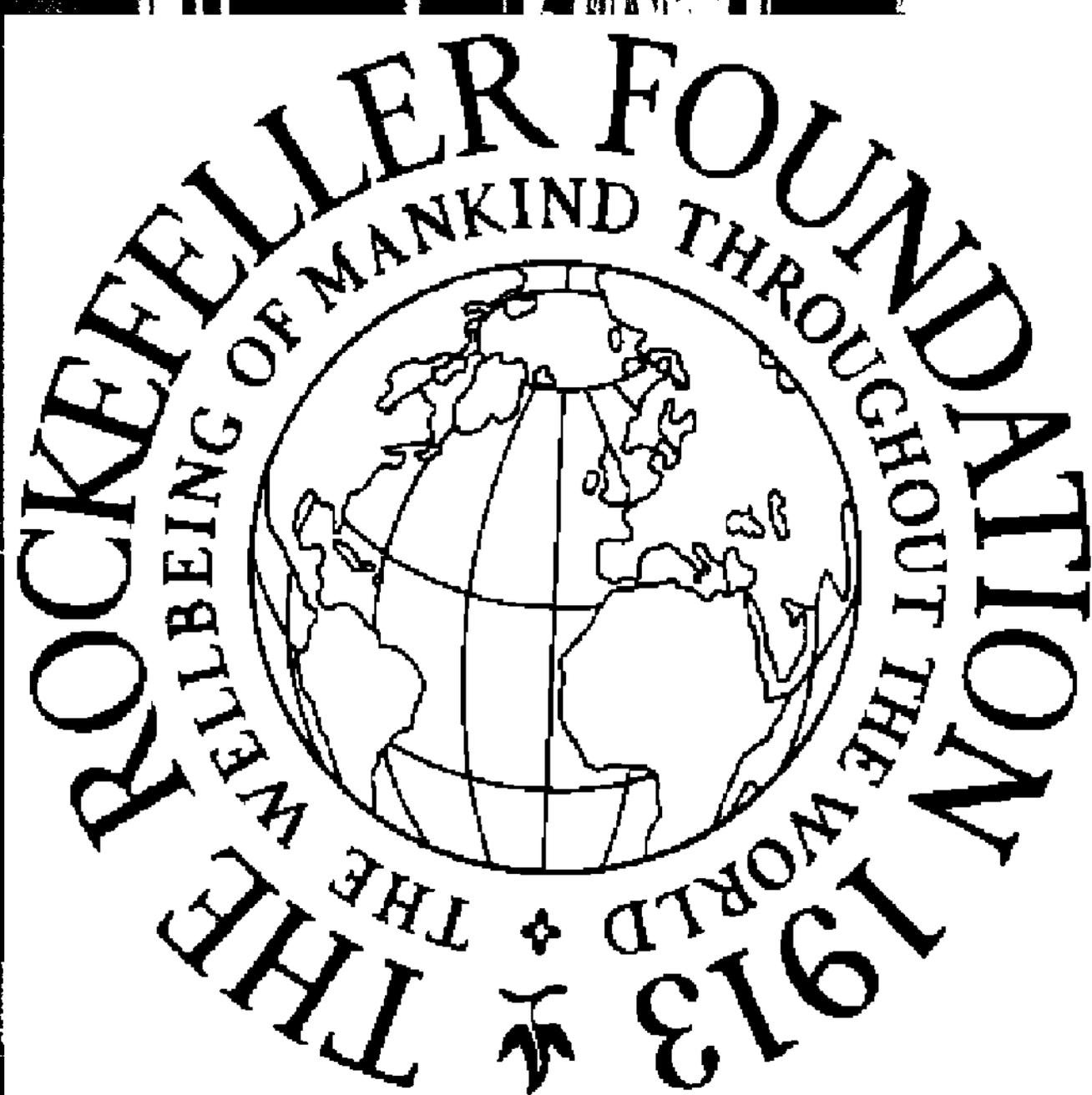
efforts, classified as allied interests, buttress major Foundation goals of overcoming world hunger, combating disease, reducing the hazards of overpopulation and environmental decay, and contributing to orderly social and economic development.

DELIVERY OF HEALTH CARE

Chief among the Foundation's current interests under this rubric is delivery of health care. The Foundation's involvement with public health and medical education is as old as the institution itself, beginning with the campaigns against yellow fever and malaria in the twenties. During the decades of the fifties and sixties, Foundation-supported surveys of the state of health care in certain areas of the United States and in several developing countries brought to light outmoded and ineffectual systems, which had no self-examining or self-correcting mechanisms to prevent them from getting worse. This led to a number of grants being made within major Foundation programs such as University Development, Equality of Opportunity, and Problems of Population, for experimental programs in medical and public health education linked with service to the community. In addition, Foundation field programs in the medical and natural sciences located in developing countries were trying to work out means of bringing medical care, maternal and infant care, and rudimentary health education to poor rural villages: Foundation-supported centers in Candelaria, Colombia; Igbo Ora, Nigeria; Kasangati, Uganda; and Ballabgarh, India; were affiliated with local medical schools; here early efforts were made toward integration of community medical care with training of health personnel. Eventually, as the University Development Program strengthened basic science faculties and medical curricula in a number of universities, a pattern evolved for delivery of health care linked to preparation for the health professions. The outstanding pilot programs of Mahidol University in Thailand, the University of the Philippines, and the University of Valle in Colombia were the result.

The medical-care tangle in the United States was reaching crisis proportions

Harvey Estes, M.D., is chairman of Duke University's Department of Community Health Sciences, which in 1965 began an imaginative two-year training program for physician's assistants. High school graduates with medical experience, generally gained in the Armed Forces, are instructed in the basic life sciences, laboratory and diagnostic techniques, medical administration, and clinical medicine. Private physicians who have hired them are enthusiastic about their work and the assistants find themselves in ever-increasing demand.



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in the sixties, its most visible victims being the inner-city poor. A severe shortage of physicians and other health manpower in rural areas was also developing. Under the Equal Opportunity Program, the Foundation supported community projects in delivery of health care designed by Yeshiva and by Harvard; in each case the university undertook a coordinated effort, through its schools of medicine, nursing, and public health, its teaching hospitals and outpatient clinics, and its other facilities to work out means of providing medical care to people in various income groups. Cooperating with city health departments, state and city welfare administrations, and other agencies, as well as with private insurance companies, they have been investigating means of financing medical care and organizing systems for serving the different health needs of the community.

Built into such programs were often training projects designed to provide upward mobility to disadvantaged minority groups. Still other programs centered around family planning services; these stressed maternal and child care and trained workers in this field. Support was also given for training programs aimed at creating a semi-professional cadre of physician's aides, in the hope of alleviating the shortage of doctors.

All these efforts have provided useful information about possibilities for financing medical care, training people in the health professions, and organizing our resources in the field of medicine. Particularly valuable is an exhaustive record-keeping and evaluation system worked out at Harvard's Center for Community Health and Medical Care to monitor a wide diversity of cooperating programs in the Boston area and provide them with information they need for better administration.

Major grants were made this year to Columbia and Harvard universities, both of which have created centers charged with coordinating the many activities related to the design, operation, and evaluation of the health care services in the urban complexes they serve. It is hoped that such comprehensive experiments can save waste motion and money needed for medical centers and communities all over the country as a much-needed restructuring of medical and public health resources gets under way.

ARBOVIRUS STUDIES

An important Foundation contribution to public health over the past two decades has been a world-wide program in the study of viruses carried by arthropod insects, mainly ticks and mosquitoes. Laboratories for the isolation and classification of these viruses, which can cause diseases ranging from mild fevers to deadly epidemics among human beings and animals, were founded in India, Brazil, Colombia, Trinidad, Nigeria, and California. They were manned at first by Foundation scientists, who trained local staff

members and carried out research on viruses to explore their prevalence, their life cycles, their interrelationships, their vectors, and the diseases they cause. A central laboratory was located first at the Rockefeller Institute (now University) and later transferred to Yale University. The Yale Arbovirus Research Unit has the largest collection of viral agents and immune sera in the world. It functions as an international reference center and clearing-house for the investigation of viral agents and their carriers and as a training ground for virologists.

The overseas laboratories, now staffed mainly by local microbiologists, have been absorbed into universities or government health agencies. Foundation field staff members are still in residence in Nigeria and Colombia, carrying out research and training at the University of Ibadan and the University of Valle, but it is expected that by the end of 1972 these laboratories will also be wholly staffed by local scientists.

SCHISTOSOMIASIS CONTROL

The Rockefeller Foundation's pilot campaign in schistosomiasis control, located on the island of St. Lucia in the West Indies, has now completed its fifth year. Resident field staff are cooperating with local public health authorities in a three-pronged attack on this debilitating parasitic disease.

After three years of basic epidemiologic and biologic studies, control measures were initiated in two valleys on the island in 1970. In Cul-de-Sac Valley, molluscacides are being tested in watercourses and marshes to eliminate the snails that are a host for the parasite. In Riche Fond Valley, all households in five villages are being provided with clean water to prevent the inhabitants from contact with infested waters. Treatment of schistosomiasis with a new drug, hycanthone, is being resumed in Roseau Valley, after a temporary halt, in an attempt to interrupt the cycle of transmission of the parasite by curing large numbers of human victims. Periodic tests for infection among predetermined sectors of the population will measure the effectiveness of each method, and ultimately an overall strategy will be suggested for controlling the disease in other parts of the world.

The Foundation's interest in controlling schistosomiasis is related to its efforts to overcome world hunger, since spread of the water-borne parasite often follows in the wake of irrigation projects, river basin development, or similar improvements, and creates such serious health problems that agricultural progress is gravely impeded.

INTERNATIONAL RELATIONS

The Foundation's concern with international affairs is basic to its mission to serve mankind throughout the world. One interpretation of this mandate

has been the promotion of understanding among nations and support for economic advancement of the less-developed countries. Studies in diplomacy and international relations have been supported by grants to universities in the United States and abroad, both for scholarly research in these fields and for training of young diplomats. A grant was made this year to the Geneva Graduate Institute of International Studies for scholarship awards to advanced students from Africa, Asia, and Latin America.

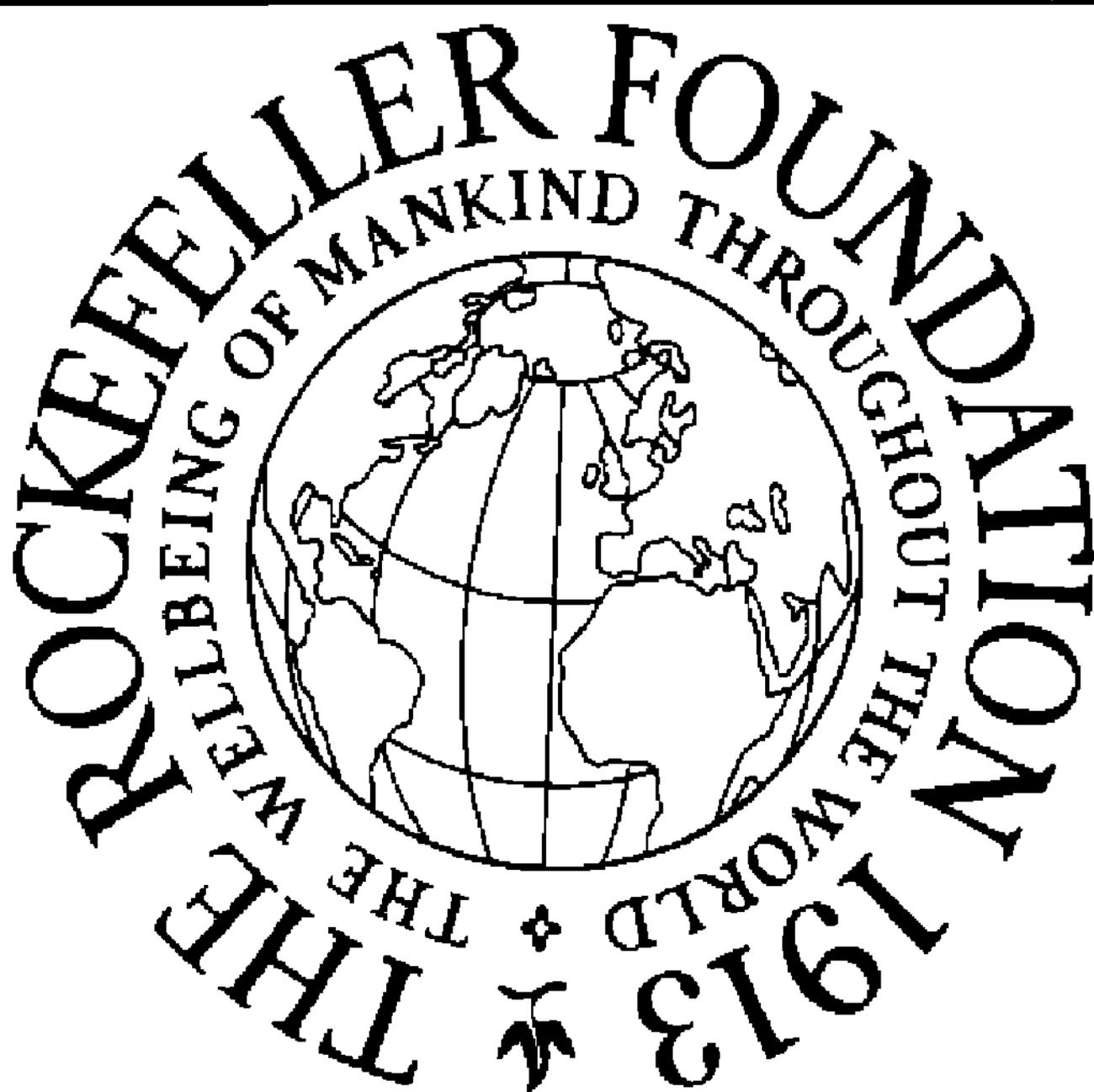
The Foundation has also made extensive grants for research in the special problems of developing nations to outstanding scholars, to universities, and to independent institutions. It has also supported international conferences in such fields as disease control, population growth, agricultural development, university administration, and a great many others.

Major grants made this year included renewed support for the Overseas Development Council for analysis and appraisal of the needs of less-developed countries and the possibilities for assistance from the affluent nations. The University of Sussex received support for its Institute for the Study of International Organisation, which has gained a high reputation as a center for research, training of young scholars, and meetings of study groups. A 1970 grant to the Brookings Institution is continuing to support its project of inviting outstanding young social science scholars to take part in its Foreign Policy Studies Program.

HARRAR'S LEGACY

During the period of Dr. Harrar's presidency, the Foundation appropriated more than \$450 million for the unified program of which he is the principal architect. The main components—their objectives and a summary of results obtained—have been described in some detail in the previous pages. But the most significant benefit is likely to be overlooked in this accounting of work performed: the patient training of men and women in many fields. The agricultural successes of Norman Borlaug, winner of the 1970 Nobel Peace Prize, for example, rest on Dr. Borlaug's training of literally hundreds of wheat

Kermit Gordon is head of the Brookings Institution. With Foundation support, Brookings has recently expanded its foreign policy studies program to include young scholars to bring a contemporary dimension to the analysis of national and international problems.



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scientists who, on returning to their countries, are practicing what he so eloquently preached. Almost all of the Foundation's projects for the benefit of minority-group members are training oriented: training to get a job, to launch a professional career, to control one's own destiny. The training motif is evident in the arts: to enable a promising but untried playwright to write full time and have access to a workshop to see how his script performs is to provide a training situation. Training is an important component in protecting the environment, in the delivery of health care, in structuring sound economic policies, and in the search for safe and effective contraceptives.

Up to his election as vice-president of the Foundation, George Harrar was principally concerned with the agricultural sciences. As vice-president, the medical sciences and public health occupied him to an increasing extent. On assuming the presidency, he made himself responsible for the effective participation of The Rockefeller Foundation in ameliorating some of the great problems of our generation: inequality of opportunities, the deteriorating environment, lagging support for the arts and humanities, rapidly increasing populations, and the development of stagnant nations. He has brought all of these programs into highly productive and meaningful interaction and has supported the training of several thousand men and women. It is they who are the legacy of George Harrar.

THE OFFICERS

April, 1972

1971 GRANTS AND PROGRAMS

INTERNATIONAL COOPERATIVE PROGRAMS

CONQUEST OF HUNGER

Field staff	\$ 750,900
Publications	74,160

POPULATION

Field staff	70,180
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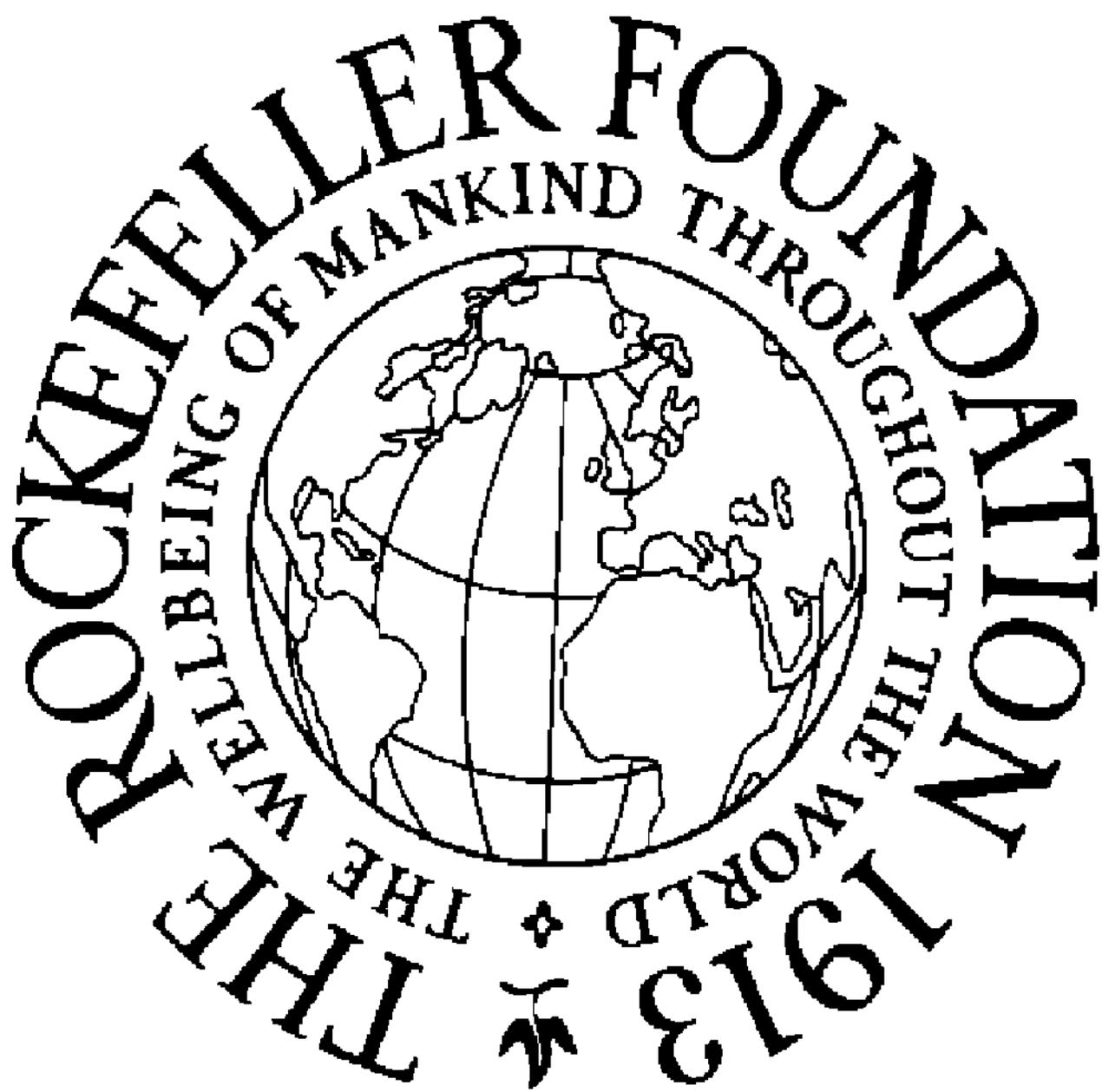
UNIVERSITY DEVELOPMENT

Field staff	1,481,300
Visiting faculty	418,060
Project support	503,300

ALLIED INTERESTS

Schistosomiasis research and control project, St. Lucia	297,300
Field staff	\$148,500
Project support	148,800
Yale Arbovirus Research Unit	136,700
Microbiology Laboratory, Cali, Colombia	34,000
Bellagio Study and Conference Center, Italy	257,100
Field staff	41,500
Project support	215,600
Unallocated contingency reserve for international programs	250,000
	<u>\$4,273,000</u>

*Benjamin E. Mays, president-emeritus of Morehouse College in Atlanta, and currently chairman of the Atlanta Board of Education, is the author of the widely acclaimed *Born to Rebel*, an autobiographical recollection of changes in race relations in the South during the past 70 years.*



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CONQUEST OF HUNGER

AUSTRALIA

AUSTRALIAN NATIONAL UNIVERSITY: studies on the modification of the amino acid composition of plants by mutation and selection; \$14,270;

COLOMBIA

COLOMBIAN INSTITUTE OF AGRICULTURE:

Animal husbandry and animal health programs; \$66,848;

Equipment to study plant pathology, plant physiology, potatoes, cassava, soils, rice, and oil crops; \$32,169;

Graduate training in agriculture; \$29,238;

Equipment for the experiment station at Carimagua; \$8,000;

Equipment necessary for research on seed storage; \$7,000;

To enable a member of the Planning Office to undertake a course in agricultural planning at the University of Puerto Rico; \$1,550;

INTERNATIONAL CENTER OF TROPICAL AGRICULTURE:

Core support; \$720,000;

Construction of its headquarters facilities; \$220,418;

Irrigation system for headquarters facilities; \$20,000;

ECUADOR

ECUADOR AGRICULTURAL PROJECT: 1972 operating costs; \$16,000;

NATIONAL AGRICULTURAL RESEARCH INSTITUTE: development of experiment stations and the strengthening of research and training programs in crop and animal improvement; \$101,000;

ETHIOPIA

ASSOCIATION FOR THE ADVANCEMENT OF AGRICULTURAL SCIENCES IN AFRICA: first international conference, held in Addis Ababa; \$15,000;

HONDURAS

PAN AMERICAN SCHOOL OF AGRICULTURE: on-site study of the School; \$12,000;

INDIA

INDIAN AGRICULTURAL PROGRAM: administrative and operating costs; cooperative projects in rice, sorghum, millets, experiment station development; support of the Indian Agricultural Research Institute; \$210,300;

ITALY

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS: training program in Mexico for cereal improvement specialists from the Middle East in cooperation with the International Maize and Wheat Improvement Center; \$100,000 through December, 1973;

JAMAICA

UNIVERSITY OF THE WEST INDIES: to enable Peter Dalton, Research and Control Department, St. Lucia, to study patterns of exposure to schistosomiasis of the St. Lucia population and complete requirements for his Ph.D. degree; \$8,500;

KENYA

EAST AFRICAN AGRICULTURE AND FORESTRY RESEARCH ORGANIZATION:

Program for improvement of the yield, grain quality, and protein value of the sorghum crop; \$30,000;

Supplementary feeding techniques for East African cattle; \$4,200;

Expanded information services program; \$1,680;

ESTABLISHMENT OF an animal disease research and training laboratory in East Africa; \$25,000;

MEXICO

INTERNATIONAL MAIZE AND WHEAT IMPROVEMENT CENTER (CIMMYT):

New headquarters facilities at El Batán: site preparation, building plans, construction, equipping and furnishing, and renovation of some existing buildings; \$940,988;

Core support; \$750,000;

Promotion of increased production of maize in an area of high population density in the state of Puebla; \$130,000;

Accelerated potato production program in Pakistan and in-service training program in Mexico for Pakistani potato specialists; \$43,800;

1972 operating costs of the Spring-Winter Wheat Breeding Project; \$26,100;

Inauguration program for headquarters facilities; \$24,162;

Laboratory for animal feeding trials and research equipment for the Protein Quality Laboratory; \$16,300;

Graduate work of Puebla Project trainees; \$15,000;

Site visits for scientists from developing nations; \$15,000;

Investigation of plant factors contributing to efficient grain production in maize; \$3,000;

Study of broad crosses as a means of genetic improvement of maize and wheat; \$2,500;

NATIONAL SCHOOL OF AGRICULTURE:

Development of graduate program at the Ph.D. level; \$70,000;

Cooperation with the International Potato Program; \$28,150;

NIGERIA

INTERNATIONAL INSTITUTE OF TROPICAL AGRICULTURE: core support; \$750,000;

UNIVERSITY OF IBADAN: Second Conference of Deans of University Faculties of Agriculture in Sub-Saharan Africa; \$15,000;

PHILIPPINES

INTERNATIONAL RICE RESEARCH INSTITUTE:

Core support; \$750,000;

Experimental program to identify and demonstrate techniques for increasing the productivity of Asian rice farmers; \$42,350;

Research program on the nutrition and growth of upland rice; \$10,000;

TAIWAN (NATIONAL REPUBLIC OF CHINA)

JOINT COMMISSION ON RURAL RECONSTRUCTION: development by the Taiwan Fisheries Research Institute of a research program in fish-pond ecology and management; \$75,000;

THAILAND

INTER-ASIAN CORN PROGRAM: 1972 operating costs; \$38,280;

MAHIDOL UNIVERSITY:

Department of Biochemistry, Faculty of Science for an applied nutrition research program; \$12,000;

Department of Microbiology, Faculty of Science for research on the relationships between malnutrition and resistance to infection; \$10,000;

TURKEY

WHEAT IMPROVEMENT PROJECT IN THE MIDDLE EAST:

Supplies and equipment for the project; \$97,400;

Continuation of the exchange of CIMMYT scientists and Middle East wheat trainees and specialists; \$61,300;

International Maize and Wheat Improvement Center, Mexico; assignment of Dr. Arthur R. Klatt as a wheat breeder in the project; \$19,350;

UNITED STATES

AGRIBUSINESS COUNCIL, New York: operating expenses; \$25,000;

AGRICULTURAL RESEARCH SERVICE OF THE UNITED STATES DEPARTMENT OF AGRICULTURE, Washington, D. C.: pulse seed increase program; \$15,000;

John Crosby is the creator and general director of the Santa Fe Opera, recognized throughout the world as a showcase for high-quality and experimental opera production, classic and contemporary, and as the outstanding center in the U. S. for the training of young singers. The summer Apprentice Program offers students a chance to work with professionals in preparing actual performances: apprentices understudy regular roles, sing small parts, and form the choruses of all productions.



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CORNELL UNIVERSITY, New York:

Department of Plant Breeding and Biometry of the New York State College of Agriculture in support of research on cold tolerance in maize; \$15,000;

HARVARD UNIVERSITY, Massachusetts: Department of Tropical Public Health, School of Public Health for research in immunology of schistosomiasis; \$25,000;

IOWA STATE UNIVERSITY: Department of Agronomy research project on inter-generic plant crosses involving maize and sorghum; \$15,000;

JOHNS HOPKINS UNIVERSITY, Maryland: research by Dr. Ernest Bueding, professor of pathobiology, School of Hygiene and Public Health, on the chemotherapy of experimental schistosomiasis; \$15,000;

MICHIGAN STATE UNIVERSITY: Research by Professor Victor E. Smith on the economic and nutritional consequences of changes in Nigerian technology; \$14,850;

SAINT LOUIS UNIVERSITY, Missouri: equipment for the Anemia and Malnutrition Research Center, University of Chiang Mai, Thailand; \$295,500;

UNIVERSITY OF CALIFORNIA, Davis: research on the use of antifertility drugs to control rat populations; \$7,000;

UNIVERSITY OF HAWAII: College of Tropical Agriculture for continuation of studies on bacterial blight of rice; \$2,500;

UNIVERSITY OF ILLINOIS: to enable Dr. R. H. Hageman to continue to lead a project on biochemical criteria as a guide to breeding corn; \$25,000;

UNIVERSITY OF MICHIGAN: Mollusk Division of its Zoology Department for studies on the vector snails which cause schistosomiasis; \$175,000 for a three-year period;

UNIVERSITY OF MINNESOTA:

Department of Agronomy and Plant Genetics to expand and accelerate its research in crop physiology of small grains; \$15,000;

Economic Development Center for research on "Science and Agricultural Progress: the Japanese Experience"; \$12,200;

UNIVERSITY OF NEBRASKA: research on the physiology of sorghum yield and on sorghum management as they relate to genetic improvement; \$300,000 for a five-year period;

UNIVERSITY OF WASHINGTON: College of Fisheries for continuation of a program for the training of staff members from the School of Fisheries of the Catholic University of Valparaiso, Chile; \$8,200;

UTAH STATE UNIVERSITY: International Shrub Symposium; \$5,000;

WASHINGTON STATE UNIVERSITY: biological evaluation of triticale selections produced in the triticale breeding program of CIMMYT; \$15,000.

PROBLEMS OF POPULATION

INTERNATIONAL

EXPENSES of a conference on population growth and economic development held at the Bellagio Study and Conference Center; \$2,500;

PROGRAM OF SOCIAL SCIENCE AND LEGAL RESEARCH ON POPULATION POLICY:

INTERNATIONAL UNION FOR THE SCIENTIFIC STUDY OF POPULATION, Belgium: research to be directed by Dr. Massimo Livi-Bacci on "The Study of Legislation Directly or Indirectly Influencing Fertility in the European Countries"; \$30,000;

JOHNS HOPKINS UNIVERSITY, Maryland: research to be directed by Dr. Robert J. Melton on "The Demographic Impact of Liberalized Abortion Legislation in Maryland"; \$8,710;

LATIN AMERICAN CENTER OF DEMOGRAPHY, Chile: research to be conducted by Dr. Gerardo González Cortés on "Actors in the Formulation of Population Policy: A Study of Political Parties and Social Scientists in Chile"; \$31,035;

NATIONAL ECONOMIC DEVELOPMENT BOARD, Thailand: research to be directed by Dr. Gavin W. Jones on the interrelation between population trends, educational progress, and manpower supply in Thailand; \$8,778;

PRINCETON UNIVERSITY, New Jersey: research study by Dr. Richard E. Bilsborrow on "The Effects of Population Growth on Economic Development"; \$24,388;

UNIVERSITY OF CALIFORNIA, Berkeley: research to be conducted by Patricia Anglim on support for Ghana's family planning policy; \$9,798;

UNIVERSITY OF IBADAN, Nigeria: research to be conducted by Dr. C. G. M. Bakare on "An Experimental Study of the Effects of Persuasive Communications on the Acceptance of Family Planning in a Nigerian Rural Environment"; \$50,000;

ARGENTINA

NATIONAL UNIVERSITY OF CORDOBA: supplies for research in reproductive biology in the Section of Electron Microscopy, Institute of Chemical Sciences; \$9,000;

CHILE

CATHOLIC UNIVERSITY OF CHILE: research equipment for studies in reproductive biology in the Institute of Biological Sciences; \$9,500;

KOREA

EWHA WOMANS UNIVERSITY: teaching program in family planning in the College of Medicine; \$15,000;

MEXICO

COLEGIO DE MEXICO: Center for Economic and Demographic Studies for research in demography; \$120,000 through December, 1974;

PHILIPPINES

CHILDREN'S MEDICAL CENTER PHILIPPINES: study of the potential of indigenous midwives as motivators of family planning; \$15,000;

THAILAND

MAHIDOL UNIVERSITY: research in reproductive biology in the Faculty of Science and the Ramathibodi Faculty of Medicine; \$14,800;

UNITED KINGDOM

UNIVERSITY OF CAMBRIDGE: laboratory expenses in connection with a research training program at the Animal Research Station, Unit of Reproductive Physiology and Biochemistry; \$2,000;

UNITED STATES

ALABAMA COUNCIL FOR VOLUNTARY FAMILY PLANNING: development of a state-wide plan for provision of family planning services to the indigent; \$10,000;

AMERICAN FRIENDS SERVICE COMMITTEE, Pennsylvania: family planning programs; \$44,000;

ASSOCIATION OF AMERICAN MEDICAL COLLEGES, Washington, D. C.: conference on the teaching and practice of family health held in Uganda, convened by the Association of Medical Schools in Africa; \$2,500;

COLORADO STATE UNIVERSITY: equipment for research in comparative reproductive biology by its Animal Reproduction Laboratory; \$19,000;

EMORY UNIVERSITY, Georgia: summer program for medical students in the teaching of population and family planning; \$12,000;

HARVARD UNIVERSITY, Massachusetts:

For the development of an educational model relating human fertility and fertility control; \$14,500;

Colloquium on family planning in conjunction with the Thirteenth International Congress of Pediatrics; \$2,300;

JOHNS HOPKINS UNIVERSITY, Maryland:

For research in the psychological factors associated with therapeutic termination of pregnancy; \$6,000;

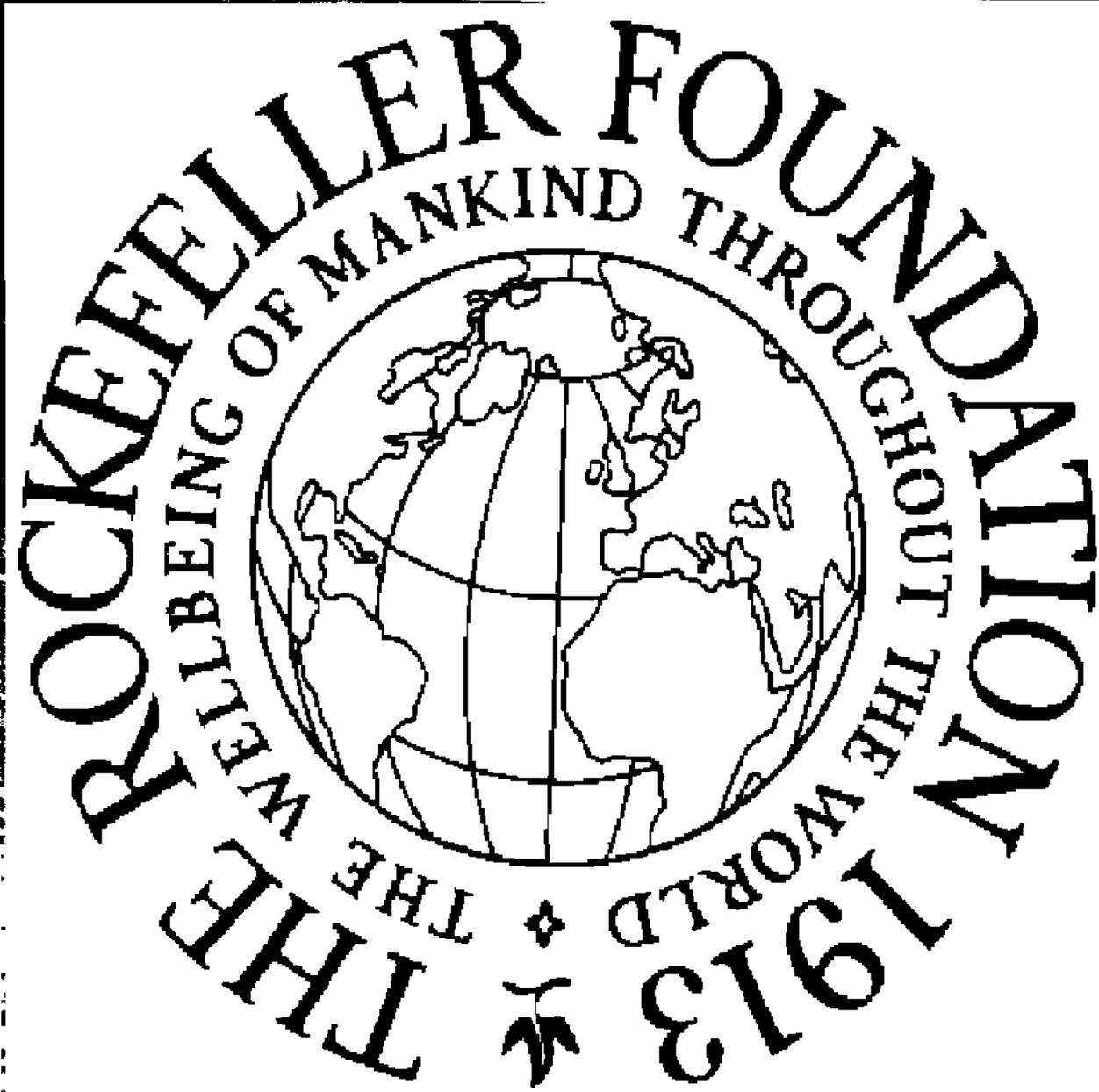
For research on the motivational, attitudinal, and behavioral aspects of therapeutic termination of pregnancy; \$40,000;

Research on improved techniques of male sterilization; \$10,500;

MOUNT SINAI SCHOOL OF MEDICINE OF THE CITY UNIVERSITY OF NEW YORK: study of motivation for family planning; \$300,000 through January, 1974;

NORTHWESTERN UNIVERSITY, Illinois: development of research in reproductive biology in the Department of Physiology of its Medical School; \$445,000 for a three-year period;

Jerry Eastin, a plant physiologist, is coordinator of the sorghum improvement program at the University of Nebraska, where an interdisciplinary team has accomplished notable work in screening techniques, sorghum plant physiology, and the influence of various environmental factors on plant growth. Cooperative links have been established with sorghum improvement programs in the United States and in India, Thailand, and Uganda.



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PENNSYLVANIA STATE UNIVERSITY:

Purchase of equipment for research in reproductive biology in the Department of Biochemistry; \$15,000;

Department of Economics for research on microeconomic costs and benefits of the family-size decision; \$14,000;

PLANNED PARENTHOOD FEDERATION OF AMERICA, New York:

Center for Family Planning Program Development; \$500,000 through September, 1974;

Family planning training program for nurses in cooperation with the College of Medicine and Dentistry of New Jersey; \$100,000;

POPULATION COUNCIL, New York: research on contraceptive development; \$500,000;

RAND CORPORATION, California: research program on the economics of family decision making as to birth control in less developed nations; \$250,000 through June, 1973;

UNIVERSITY OF CHICAGO, Illinois: support of a basic science research position in reproductive biology in the Department of Obstetrics and Gynecology; \$155,000;

UNIVERSITY OF MISSISSIPPI: training and demonstration family planning program conducted by its Medical Center at Jackson; \$60,000;

UNIVERSITY OF NORTH CAROLINA, Chapel Hill: cooperative program between the University's Population Center and the Center for Population and Social Research of Mahidol University, Bangkok, Thailand; \$300,000 through September, 1976;

UNIVERSITY OF PENNSYLVANIA: support of a basic science research position in reproductive biology in the Department of Obstetrics and Gynecology; \$120,000;

UNIVERSITY OF TEXAS:

Austin

Institute for Biomedical Research for research on new approaches to the control of conception; \$120,000 through June, 1974;

Medical School at San Antonio

Support of a basic science research position in reproductive biology; \$110,000;

YALE ARBOVIRUS RESEARCH UNIT, Connecticut: equipment for research in reproductive biology; \$6,000.

UNIVERSITY DEVELOPMENT

COLOMBIA

UNIVERSITY OF VALLE:

Rockefeller Foundation International Program in University Development; visiting faculty requested by the University of Valle;

Dr. Farzam Arbab; to continue as visiting professor of physics;

Dean H. Wilson; to continue as visiting professor, Division of Engineering;

Salaries of teaching personnel in the Division of Health Sciences; \$136,126;
Purchase of equipment and supplies for the Division of Health Sciences; \$68,375;
Salaries of teaching personnel in the Division of Sciences; \$67,387;
Division of Social and Economic Sciences, toward the costs of salaries of professional teaching staff; \$40,040;
Division of Humanities, toward salaries of professional teaching staff; \$21,210;
Salaries of teaching personnel in the Division of Engineering; \$20,717;
Library acquisitions for graduate programs; \$14,400;
Research projects of the Division of Sciences; \$11,928;
Research projects of the Division of Health Sciences; \$10,737;
Equipment and supplies for the Division of Humanities; \$10,000;
Division of Humanities, to microfilm regional archives for historical research; \$4,462;
Equipment and supplies for the Division of Social and Economic Sciences; \$2,500;
Technical training for a staff member in the Department of Chemistry at the State University of New York at Stony Brook; \$2,500;
Division of Health Sciences, toward expenses of a seminar on community health problems; \$2,200;
Equipment and supplies in the Division of Engineering; \$1,979;

KENYA

UNIVERSITY OF NAIROBI:

Rockefeller Foundation International Program in University Development; visiting faculty requested by the University of Nairobi:

Dr. Claude Ake; to continue as visiting senior lecturer, Department of Government;

Dr. Michael A. K. Halliday, University of London; visiting professor, Department of Linguistics and African Languages;

Peter R. Moock; to continue as visiting research fellow, Institute for Development Studies;

John H. Power, University of Hawaii, Honolulu; visiting research professor, Institute for Development Studies;

Dr. Kenneth C. Prewitt; to continue as visiting senior research fellow, Institute for Development Studies;

Nathan H. Shapira; to continue as head of the Department of Design;

H. C. A. Somerset; to continue as senior research fellow, Institute for Development Studies;

William Edward Whitelaw; to continue as visiting research fellow, Institute for Development Studies;

Research and staff development in its Institute for Development Studies; \$86,800;

Clinical studies program of its Faculty of Veterinary Science; \$85,500;

University of Iowa; to enable Dr. Joseph R. Ascroft to serve for a second year as visiting research fellow in the Institute for Development Studies; \$21,437;

Support of East African graduate scholars in the B. Phil. program in the Department of Economics for the academic year 1971-1972; \$12,860;

Support of academic and administrative staff development; \$12,700;

Study in the Faculty of Veterinary Science on the pathogenesis of East Coast fever; \$11,000;

Research programs in the Institute of African Studies; \$10,000;

Research in the Faculty of Veterinary Science on pneumonia of cattle, sheep, goats, and pigs; \$9,300;

Lectureship in its Department of Economics during the academic year 1971-1972; \$2,700;

Staff development of its Institute for Development Studies; \$2,500;

Research and teaching assistantship in its Department of Government; \$1,915;

NIGERIA

UNIVERSITY OF IBADAN:

Arbovirus research program in the Faculty of Medicine; £39,025 (about \$109,265);

Cornell University, New York; to enable Dr. J. K. Loosli, Department of Animal Sciences, to serve as visiting professor, Faculty of Agriculture, University of Ibadan; \$53,240;

Faculty of Social Sciences. selected research projects of the Departments of Geography, Economics, and Sociology; \$41,586;

Research on employment problems of graduates of the University; \$21,152;

Graduate training in the Faculty of Agriculture, Forestry, and Veterinary Science; \$19,000;

Graduate training in its Faculty of Social Sciences; \$16,800;

Conference on regional planning and national development in Africa; \$15,000;

Department of Veterinary Pathology, pathogenetic and biochemical studies of trypanosomiasis in animals; \$14,500;

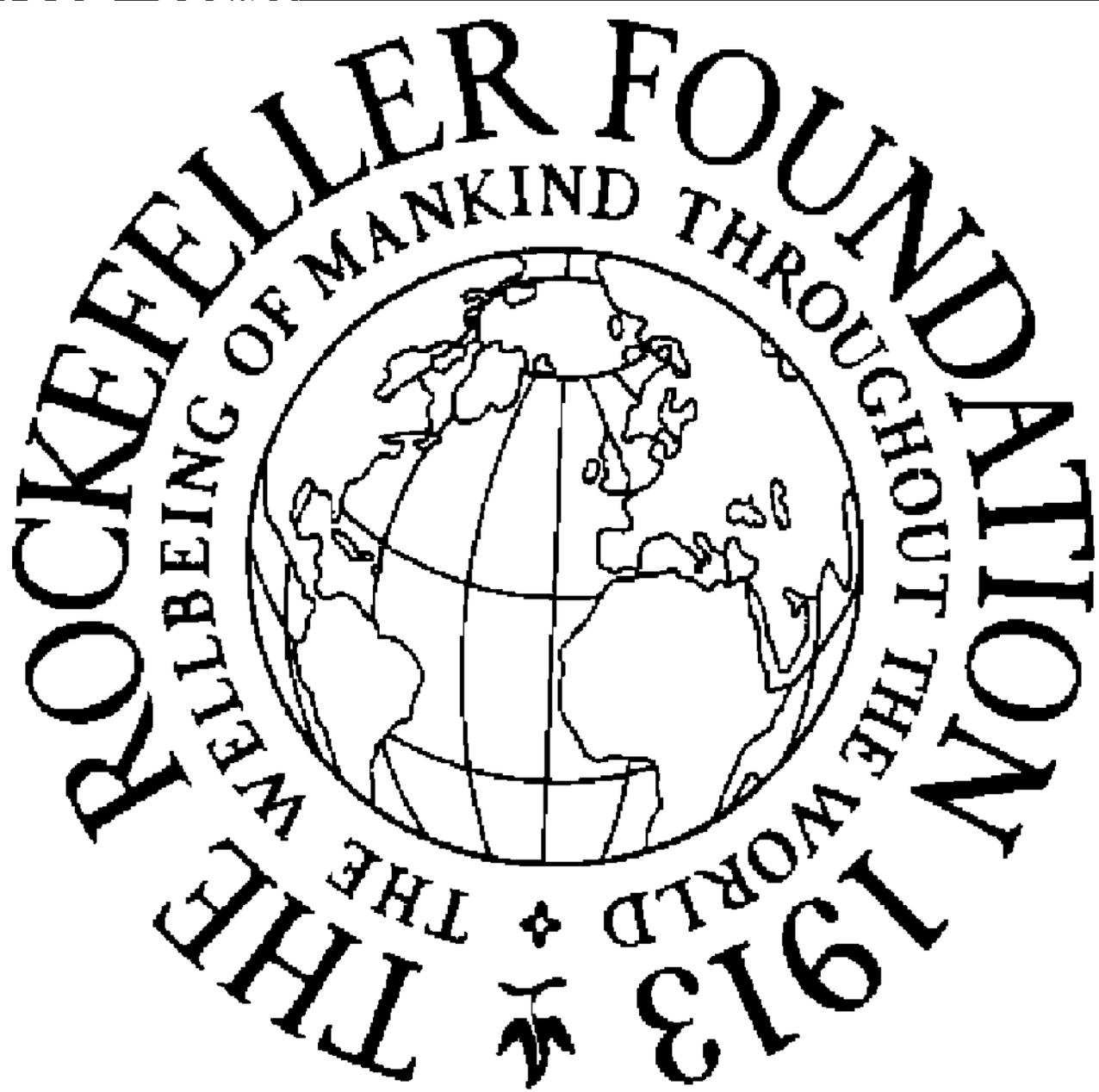
Northwestern University, Illinois; to enable Dr. Rodney R. White to serve for one year as a visiting lecturer in geography; \$12,866;

Department of Agricultural Biology, continuation of research on the insects attacking grain legumes; \$11,000;

Department of Agronomy, crop production improvement research program; \$10,750;

Toward the cost of the salary of the acting director of its Computing Centre; \$8,525;

Wynn Handman is co-founder and artistic director of the American Place Theatre, a nonprofit subscription group, which recently moved from its former base at St. Clement's Church to a totally new, 290-seat house in a New York office building. The theatre has been particularly successful in searching out authors of stature in fields other than the theatre — poets, scholars, and journalists — to write dramatic dialogues or plays.



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Support of a postdoctoral fellow in economics; \$5,404;
Staff development in the Department of Agricultural Economics and Extension; \$4,620;
Special field operations of the virus unit under the direction of a Foundation staff member; \$3,000;
Research appointments in the Department of Animal Science; \$2,700;
Visiting professorship in the Department of History; \$2,500;
Staff development in the Registrar's office; \$2,145;
Research appointment in the Department of Agricultural Biology; \$2,700;
Toward the cost of the appointment of Dr. E. W. Foss, Department of Agricultural Engineering, Cornell University, as visiting professor, Faculty of Agriculture; \$90;

PHILIPPINES

UNIVERSITY OF THE PHILIPPINES:

School of Economics, scholarship, research, and library support; \$40,000;
College of Agriculture, program of advanced training and research for corn, sorghum, soybeans, and other upland crops production; \$15,000;

TANZANIA

UNIVERSITY OF DAR ES SALAAM:

Rockefeller Foundation International Program in University Development; visiting faculty requested by the University of Dar es Salaam;

Leonard Berry; to continue as director, Bureau of Resource Assessment and Land Use Planning;

Ian Livingstone; to continue as research professor, Economic Research Bureau;

Dr. Gerhard Tschannerl; to continue as research fellow, Bureau of Resource Assessment and Land Use Planning;

Research program of its Economic Research Bureau; \$48,000;

Research and teaching in geography undertaken by its Bureau of Resource Assessment and Land Use Planning; \$28,280;

Developmental programs in the Department of Political Science; \$16,850;

Appointment of Goran Hyden as visiting senior lecturer in its Department of Political Science; \$15,800;

Experimental teaching-through-research programs in its Department of Political Science and Economics; \$14,000;

Acquisition and preparation of teaching materials on East African society, environment, and development; \$4,000;

THAILAND

KASETSART UNIVERSITY:

Research support and operating costs of the agricultural program; \$118,000;

Graduate assistantships; \$17,200;

Research leadership positions; \$12,000;

Toward the costs of: (1) advisory services to the University by visiting agricultural specialists, and (2) study and observation visits by selected University staff members to international institutes or other centers of agricultural specialization; \$5,000;

MAHIDOL UNIVERSITY:

Rockefeller Foundation International Program in University Development; visiting faculty requested by Mahidol University;

Mohammad Saeed Dar; to continue as research associate, Department of Pharmacology, Faculty of Science;

Richard J. Littleton, Hammersmith Hospital, London, England; research associate, Department of Microbiology, Faculty of Science;

Dr. Hideo Negoro; to continue as research associate, Department of Anatomy, Faculty of Science;

Research and teaching equipment and supplies for the Faculty of Science; \$142,000;

Scholarships for two doctoral students at the Faculty of Science; \$10,000;

Preparation and publication of a textbook of biochemistry in the Thai language; \$9,000;

Symposium on bladder stone disease to be held at the Ramathibodi Faculty of Medicine; \$6,700;

Development of a full-time faculty system in Thai universities; \$2,500;

THAMMASAT UNIVERSITY:

Rockefeller Foundation International Program in University Development; visiting faculty requested by Thammasat University;

Bevars D. Mabry, University of Bowling Green, Ohio; visiting professor, Faculty of Economics;

Research in the Faculty of Liberal Arts on Thai, Asian, and Southeast Asian drama; \$6,587;

Faculty of Economics, study grants to qualified candidates for M.A. study in the School of Economics at the University of the Philippines; \$6,000;

Continuing research in the Faculty of Economics on the differential in regional growth rates and income in Thailand; \$1,945;

Research project on the efficiency of manpower in Thailand; \$1,500;

Faculty of Economics, graduate scholarship in the Master of Economics program; \$1,250;

UGANDA

MAKERERE UNIVERSITY:

Rockefeller Foundation International Program in University Development; visiting faculty requested by Makerere University;

Dr. Jay W. Artis; to continue as visiting professor, Department of Sociology;

Dr. Marshall Hall; to continue as visiting senior lecturer, Department of Economics;

Dr. Dean L. Mellroy, Jr., West Virginia University; lecturer, Department of Animal Science and Production;

Faculty development and research in the Faculty of Agriculture; \$77,500;

Teaching and research in the Faculty of Social Sciences; \$45,200;

Research, teaching, and graduate studies in political science in the Department of Political Science and Public Administration; \$42,879;

Continuation and expansion of regional activities of the Social Science Council of the Universities of East Africa; \$16,058;

Equipment, supplies, and travel for the Faculty of Agriculture; \$12,500;

Readership in comparative economic systems; \$11,700;

Research and teaching in the Department of Economics; \$10,831;

Makerere Institute of Social Research, in support of a one-year appointment of a research fellow to serve as assistant project director of its interdisciplinary research project on the "Formulation and Implementation of Development Plans" and as coordinator of the Joint Makerere University/Uganda Institute of Public Administration Diploma Course; \$9,500;

Further training for a lecturer in the Department of Sociology; \$6,401;

Department of Geography, field research on "The Spatial Distribution of Retail and Service Centers in the Kampala Region, 1940-1970"; \$2,685;

One-year exchange of staff between the history departments of Makerere University and the University of Ibadan, Nigeria; \$1,122;

Related Grants

ADDITIONAL SUPPORT of a conference on economic aspects of modernization organized by The Rockefeller Foundation and held at the Bellagio Study and Conference Center; \$952;

ASSOCIATION OF AFRICAN UNIVERSITIES, Ghana: to facilitate the participation of young African economists and agricultural economists in the program of the Association for the Advancement of Agricultural Sciences in Africa during the summer of 1971; \$9,000;

CLARK UNIVERSITY, Massachusetts: to enable Professor Leonard Berry, Graduate School of Geography, to prepare for publication as teaching materials research in geography he accumulated while a faculty member of the University of Dar es Salaam, Tanzania, from 1965 to 1971; \$4,887;

MICHIGAN STATE UNIVERSITY: research on "Alternative Milk Sources in Tanzania"; \$4,860;

NATIONAL BUREAU OF ECONOMIC RESEARCH, New York: collaborative training and research program to be conducted with research institutes in less developed countries, particularly with those in universities with which the Foundation is cooperating under its University Development Program; \$225,000;

Ted Watkins is chairman of the Watts Labor Community Action Committee, a joint enterprise of 10 labor unions in the Watts area of Los Angeles. At its 580-acre residential center in Saugus, 300 unemployed adults and high-school dropouts annually are enrolled in six major training programs that will qualify them for desirable jobs.



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NATIONAL UNIVERSITY OF ZAIRE: for use by the Institute of Economic and Social Research toward its program for training researchers in the social sciences; \$15,000;

NORTHWESTERN UNIVERSITY, Illinois: program to enable scholars to accept assignments for teaching and research related to university development in selected institutions in Africa, Asia, and Latin America; \$150,000 through June, 1975;

STANFORD UNIVERSITY, California: development of a plan for applying decisions analysis to the provision of health care at the Ramathibodi Faculty of Medicine, Thailand; \$14,500;

UNIVERSITY OF MICHIGAN: program to enable scholars to accept assignments for teaching and research related to university development in selected institutions in Africa, Asia, and Latin America; \$200,000 through June, 1975.

EQUAL OPPORTUNITY

UNITED STATES

APPALACHIAN LEADERS AND COMMUNITY OUTREACH, Kentucky: program leading to locally supported community projects in Central Appalachia; \$110,000;

ARIZONA STATE UNIVERSITY: College of Education for research on parent involvement in the pre-school education of children particularly in minority groups; \$15,000;

ASPIRA, New York: Guidance Program for Spanish-speaking students and their parents; \$85,000 through June, 1973;

ATLANTA UNIVERSITY CENTER CORPORATION, Georgia: to examine the experience of other university centers with institutional change so as to consider patterns for the Center's own development; \$3,500;

BETTER BOYS FOUNDATION, Illinois: leadership training program for pre-adolescents and their families; \$100,000 for a two-year period;

BOSTON UNIVERSITY, Massachusetts: Language Acquisition Research Curriculum Program (for early childhood language training); \$15,000;

CALIFORNIA STATE COLLEGE AT LOS ANGELES: programs to strengthen Locke High School; \$107,730;

CITY SCHOOL DISTRICT, New Rochelle, New York: planning the restructuring of its program; \$5,000;

CITY UNIVERSITY OF NEW YORK: Graduate Center's study to determine the role of organizations in Harlem and East Harlem in changing the lives of adolescents; \$15,000;

COLUMBIA UNIVERSITY, New York: Graduate School of Journalism's program to improve the standard of reporting of the urban racial crisis in the United States; \$25,000;

COMMISSION ON RELIGION IN APPALACHIA, Tennessee: to assist it in its encouragement of self-help programs for the alleviation of poverty; \$89,000;

COMMUNITY RENEWAL SOCIETY, Illinois: training program for graduate students from universities in the Chicago area who are planning careers as journalists specializing in urban affairs; \$15,000;

CONNECTICUT COLLEGE: summer school program for talented high school students from disadvantaged environments; \$15,000;

ECONOMIC DEVELOPMENT COUNCIL OF NEW YORK CITY: to strengthen its programs in four inner-city high schools in which businessmen serve as consultants; \$150,000 for a three-year period;

ECUMENICAL INSTITUTE, Illinois: summer training program for potential community leaders; \$15,000;

EDUCATION FOR INVOLVEMENT CORPORATION, Washington, D. C.: toward its summer program; \$15,000;

HOUSTON BAPTIST COLLEGE, Texas: scholarship assistance to candidates in the School of Nursing; \$10,000;

INTERNSHIP PROGRAM FOR SCHOOL ADMINISTRATORS: interns given grants were:

Howard Amos (Philadelphia Public School, Pennsylvania); \$31,200;

Oliver S. Coleman (Detroit Public Schools, Michigan); \$33,300;

Dr. Salvador R. Flores (Chula Vista City School District, California); \$32,900;

Remigio L. Garcia (San Antonio Independent School District, Texas); \$21,800;

Gilbert R. Guzman (San Diego City Schools, California); \$28,300;

Dr. Ernest E. Hartzog (San Diego City Schools, California); \$1,100;

Robert L. Matthews (San Diego City Schools, California); \$31,500;

Preston H. Roney (Indianapolis Public Schools, Indiana); \$30,100;

Dr. Leonard F. Sain (Board of Education of the School District of the City of Detroit, Michigan); \$2,500;

Alfred Sing Yuen (San Francisco Unified School District, California); \$31,200;

Dr. Charles W. Townsel (Lansing School District, Michigan); \$35,000;

Harold M. Treadwell (Berkeley Unified School District, California); \$34,000;

Bruce E. Williams (Minneapolis Public Schools Special School District No. 1, Minnesota); \$1,100;

Dr. Laval S. Wilson (Community Consolidated School District No. 65, Cook County, Illinois); \$1,600;

Other grants under this program included:

Orientation programs for the superintendents and administrators participating in the program at the superintendent level; \$21,000;

Public Schools of the District of Columbia: toward the cost of planning an internship program; \$5,000;

LAWYERS' COMMITTEE FOR CIVIL RIGHTS UNDER LAW, Washington, D. C.: for use by the New York Lawyers' Committee toward its project to assist implementation of the Decentralization Law of 1969 in New York City schools; \$15,000;

LOS ANGELES CITY UNIFIED SCHOOL DISTRICT, California: to develop curricula designed to provide educational alternatives for high school seniors; \$25,000;

MASSACHUSETTS INSTITUTE OF TECHNOLOGY: Community Fellows Program enabling minority community leaders to consult with and study under MIT staff; \$400,000 for a four-year period;

- MERRILL-PALMER INSTITUTE, Michigan:** for its project, "Social Change and the Urban Family"; \$15,000;
- METROPOLITAN APPLIED RESEARCH CENTER, New York:** continuation of a comparative study of ghettos in Newark, New Jersey, and White Plains, New York, under the direction of Dr. Kenneth B. Clark; \$121,000;
- MINNEAPOLIS PUBLIC SCHOOLS SPECIAL SCHOOL DISTRICT No. 1, Minnesota:** to expand its community-school centers program; \$4,200;
- NATIONAL URBAN COALITION, Washington, D. C.:** support of national and local programs; \$100,000;
- NATIONAL URBAN LEAGUE, New York:** toward its New Thrust Program aimed at school decentralization, student participation, leadership development, black business development, and similar projects; \$500,000;
- NAVAJO COMMUNITY COLLEGE, Arizona:** salary of its Director of Development; \$15,000;
- OAKLAND UNIFIED SCHOOL DISTRICT, California:** to implement its plan for gaining school-community involvement; \$175,000;
- PENNSYLVANIA STATE UNIVERSITY:** to provide black students graduating with bachelor's degrees in biology or agriculture with an interim period of study during which they may make up academic deficiencies before undertaking graduate work; \$25,000;
- PRINCETON UNIVERSITY, New Jersey:** trial program to enable college students to seek constructive nonacademic experience and service for University credit; \$57,600 for a three-year period;
- PROJECT NECESSITIES, New Mexico:** to strengthen education for American Indian children; \$7,500;
- PUBLIC SCHOOLS OF THE DISTRICT OF COLUMBIA:** internships at the principal level for minority-group school administrators; \$300,000 for a three-year period;
- REVITALIZATION CORPS, Connecticut:**
 Toward the cost of its tutorial training programs in Hartford and Harlem; \$9,500;
 To expand its tutorial training program "Operation Bridge" in six cities; \$150,000;
- SAINT LOUIS PUBLIC SCHOOLS, Missouri:** discussion sessions, data review, and workshops to be conducted by the Superintendent's Task Force; \$15,000;
- ST. OLAF COLLEGE, Minnesota:** experimental program for the higher education of American Indians; \$15,000;

Joseph D. Beasley, M.D., pediatrician and professor of maternal and child health, designed and initiated the Orleans Parish Program, a component of Tulane's Center for Population and Family Studies, of which he is the director. A system of satellite clinics, an intensive post-partum program, and training for medical students have combined to produce a model state-wide family planning program.



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SAN DIEGO CITY SCHOOLS, California: to continue its guidance program in cooperation with the Department of Counselor Education of San Diego State College; \$100,000;

SAN FRANCISCO UNIFIED SCHOOL DISTRICT: urban workshops for minority-group school administrators; \$15,000;

SEQUATCHIE VALLEY PLANNING AND DEVELOPMENT AGENCY, Tennessee: salary of the director; \$18,000;

SOCIAL DEVELOPMENT CORPORATION, Washington, D. C.: development of a strategy for ameliorating the unemployment resulting from tobacco farm mechanization; \$15,000;

UNIVERSITY OF CALIFORNIA, Davis: continuing adult education through university extension and training of leaders for community development, principally through local self-help organizations; \$2,220;

UNIVERSITY OF FLORIDA: to train black students for entrance into graduate education in agriculture and related fields; \$184,700;

UNIVERSITY SYSTEM OF GEORGIA: support of a pilot program aimed at alleviating poverty through the training of underprivileged girls; \$15,000;

VIRGINIA UNION UNIVERSITY: program in urban studies; \$60,000;

WATTS LABOR COMMUNITY ACTION COMMITTEE, California: establishment of an urban residential center for agriculturally related vocational education at Saugus, California; \$90,975;

YALE UNIVERSITY, Connecticut: continued support of its Black Studies Program and cooperative community development activities; \$50,000.

CULTURAL DEVELOPMENT

UNITED STATES

ACTORS STUDIO, New York: for the residency of Ronald Tavel, playwright; \$9,500;

AGNES DE MILLE DANCE THEATRE, New York: American heritage dance theatre project; \$25,000;

AMERICAN EDUCATIONAL THEATRE ASSOCIATION, Washington, D. C.: for use by the University Resident Theatre Association (URTA) toward the cost of unified auditions; \$25,000;

AMERICAN PLACE THEATRE, New York: for the residency of Jack Gelber, playwright; \$9,500;

AMERICAN UNIVERSITY, Washington, D. C.: for use by the Wolf Trap American University Academy for the Performing Arts to enable students to participate in the National Youth Orchestra; \$20,000;

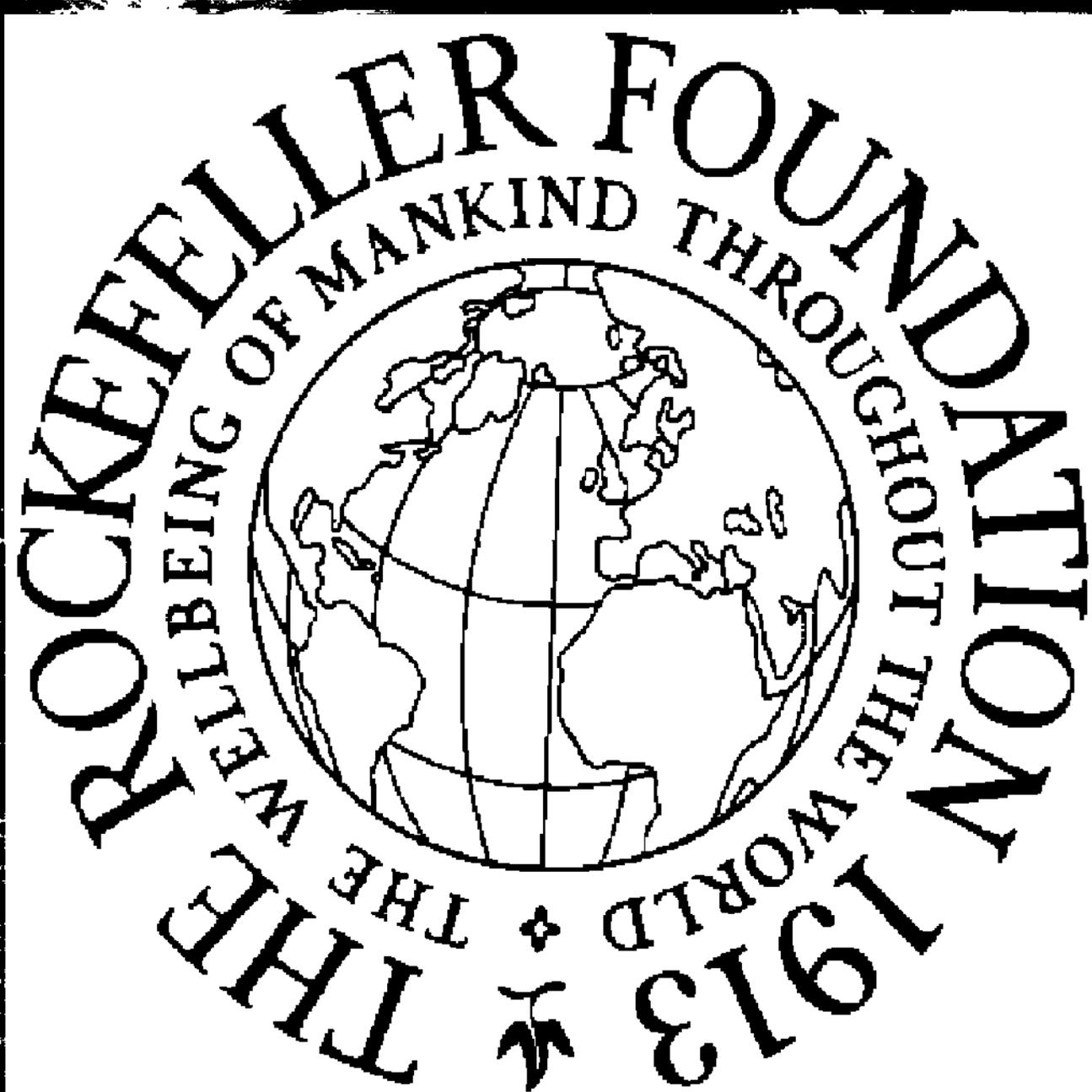
AMERICANS FOR INDIAN OPPORTUNITY, Washington, D. C.: toward establishing the American Indian Theatre Ensemble; \$25,000;

APPALACHIAN RESEARCH AND DEFENSE FUND, West Virginia: creation of an experimental series of workshops and festivals of Appalachian music; \$20,350;

- BAY AREA EDUCATIONAL TELEVISION ASSOCIATION, California:** to train professionally oriented students in the creative and artistic uses of television at selected university experimental centers; \$300,000 for a four-year period;
- BENEDICT COLLEGE, South Carolina:** to explore the uses of a combination of new technology and independent study; \$50,000 for a two-year period;
- BEREA COLLEGE, Kentucky:** development of the Puppetry Caravan for Appalachia: \$11,800;
- BERKSHIRE THEATRE FESTIVAL, Massachusetts:** creative and educational theatre programs in the New England area; \$50,000;
- BOSTON UNIVERSITY, Massachusetts:** for use by the Theatre Division of the School of Fine and Applied Arts for an experimental program involving professional theatre people and advanced students; \$24,000;
- BROOKLYN COLLEGE OF THE CITY UNIVERSITY OF NEW YORK:** to continue its program to train professional theatre technicians and artisans; \$115,000 for a three-year period;
- CENTER FOR MODERN DANCE EDUCATION, New Jersey:** resident professional companies; \$14,500;
- CHATHAM COLLEGE, Pennsylvania:** study of faculty employment policies and practices in 12 Pennsylvania colleges; \$15,000;
- CITY CENTER OF MUSIC AND DRAMA, New York:**
 Experimental 12-week session of children's theatre; \$12,500;
 To establish a permanent children's theatre; \$250,000 for a three-year period;
- CONVERSE COLLEGE, South Carolina:** musical training for high school students at the Brevard Music Center, North Carolina; \$100,000 for a three-year period;
- DUKE UNIVERSITY, North Carolina:** to enable a young scholar to participate in a research project concerned with Negro-white relations in the South between 1890 and 1910; \$7,500;
- EDUCATIONAL BROADCASTING CORPORATION, New York:** for use by its constituents, National Educational Television (NET) and Public Broadcasting Station WNET (Channel 13), to establish an experimental television laboratory workshop; \$150,000;
- EDWARD MACDOWELL ASSOCIATION, New Hampshire:** modernization and renovation of the MacDowell Colony facilities for year-round use; \$25,000;
- FLORIDA STATE UNIVERSITY:** for the residency of Murray Mednick, playwright; \$10,000;
- FOUNDATION FOR AMERICAN DANCE, New York:** City Center Joffrey Ballet to establish a choreographers' workshop; \$25,000;
- FREE SOUTHERN THEATER, Louisiana:** further development of its Ensemble and Drama Workshop; \$35,000;
- HENRY STREET SETTLEMENT, New York:** for use by the New Federal Theatre for the residency of Walter Jones, playwright; \$9,500;
- JACKSON STATE COLLEGE, Mississippi:** to assist Professor William R. Ferris to produce two documentary films on folk traditions of the Mississippi Delta region; \$7,068;
- KARAMU FOUNDATION, Ohio:** to enable Mr. and Mrs. Russell Jelliffe to serve as consultants for community arts and humanities centers; \$5,000;

- LONG ISLAND UNIVERSITY, New York:** C. W. Post Center for restoration of musical manuscripts donated by Stefan Wolpe; \$9,000;
- MANHATTAN SCHOOL OF MUSIC, New York:** experimental program of string training by the Preparatory Division of the School in conjunction with Eleanor Roosevelt Junior High School 143 and of creating string exercises designed specifically for American children; \$25,000;
- MICHIGAN STATE UNIVERSITY:** internships in university administration; \$15,000;
- MIDDLEBURY COLLEGE, Vermont:**
 Development of an innovative approach to music education; \$14,850;
 Toward the operating costs of its Committee on the College; \$12,000;
- MOREHOUSE COLLEGE, Georgia:** to prepare the first performances of Scott Joplin's folk opera, *Treemonisha*, in conjunction with the Atlanta Symphony Orchestra; \$25,000;
- NATIONAL GUILD OF COMMUNITY MUSIC SCHOOLS, Illinois:** to operate the executive office of the Guild; \$15,000;
- NEW SCHOOL FOR SOCIAL RESEARCH, New York:**
 To establish in connection with Global Village (an organization of artists founded by New School faculty members), an experimental video workshop; \$14,500;
 To assist Professor Hans Morgenthau to continue research on an analysis of President Lincoln's political philosophy; \$8,300;
- NEW YORK PUBLIC LIBRARY:**
 To establish an Index of New Musical Notation at the Music Division of its Library of the Performing Arts at Lincoln Center; \$55,000 for a three-year period;
 For use by the Dance Collection to catalogue materials for an eighteen-volume bibliography of its holdings; \$24,000;
 To enable Vera Brodsky Lawrence to research and prepare for re-publication historical American music of the 18th, 19th, and early 20th centuries; \$15,000;
- NEW YORK SHAKESPEARE FESTIVAL:** for use by the Public Theater for the residency of Myrna Lamb, playwright; \$9,500;
- NEW YORK UNIVERSITY:** for use by the Theatre Program of its School of the Arts to develop small ensembles composed of its graduates; \$300,000;
- NORTH CAROLINA SCHOOL OF THE ARTS:** to establish a resident dance company; \$250,000 for a three-year period;

William C. Spencer is president of Western College, a small liberal arts college in Oxford, Ohio. Under his leadership a group of faculty, students, trustees, and alumni explored ways to encourage experimental learning and teaching, to relate the college to communities near and distant, and to achieve economic viability.



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NORTHEASTERN UNIVERSITY, Boston: further development of a program involving colleges and universities in the New England area and the Opera Company of Boston; \$24,500;

PUERTO RICAN TRAVELING THEATRE COMPANY, New York: development of the project, "A Dramatized Anthology of Puerto Rican Short Stories"; \$15,000;

RADCLIFFE COLLEGE, Massachusetts: for use by the Radcliffe Institute for an experimental program of post-doctoral fellowships for young women scholars in university and college teaching; \$25,000;

REGIONAL PLAN ASSOCIATION, New York: to plan and initiate the proposed Television Town Meetings, "Choices for '76"; \$25,000;

REPERTORY THEATER OF LINCOLN CENTER, New York: to expand the programs at the Forum Theater; \$100,000;

STATE UNIVERSITY OF NEW YORK AT BUFFALO: to expand the work of the Center for the Creative and Performing Arts into areas of theatre, dance, and film; \$18,600;

STATE UNIVERSITY OF NEW YORK, COLLEGE AT BROCKPORT: to assist in the program development of its Center for Philosophic Exchange; \$11,500;

UNIVERSITY OF CALIFORNIA:

Berkeley

For use by the University Art Museum to enable Jane Dillenberger to prepare for an exhibition of 19th-century American religious art; \$14,300;

San Diego

To establish a Center for Music Experiment and Related Research; \$400,000 for a three-year period;

UNIVERSAL CHRISTIAN CHURCH, Maryland: for use by the Appalachian South Folklife Center, West Virginia, for a program of workshops and performances in indigenous performing arts; \$14,200;

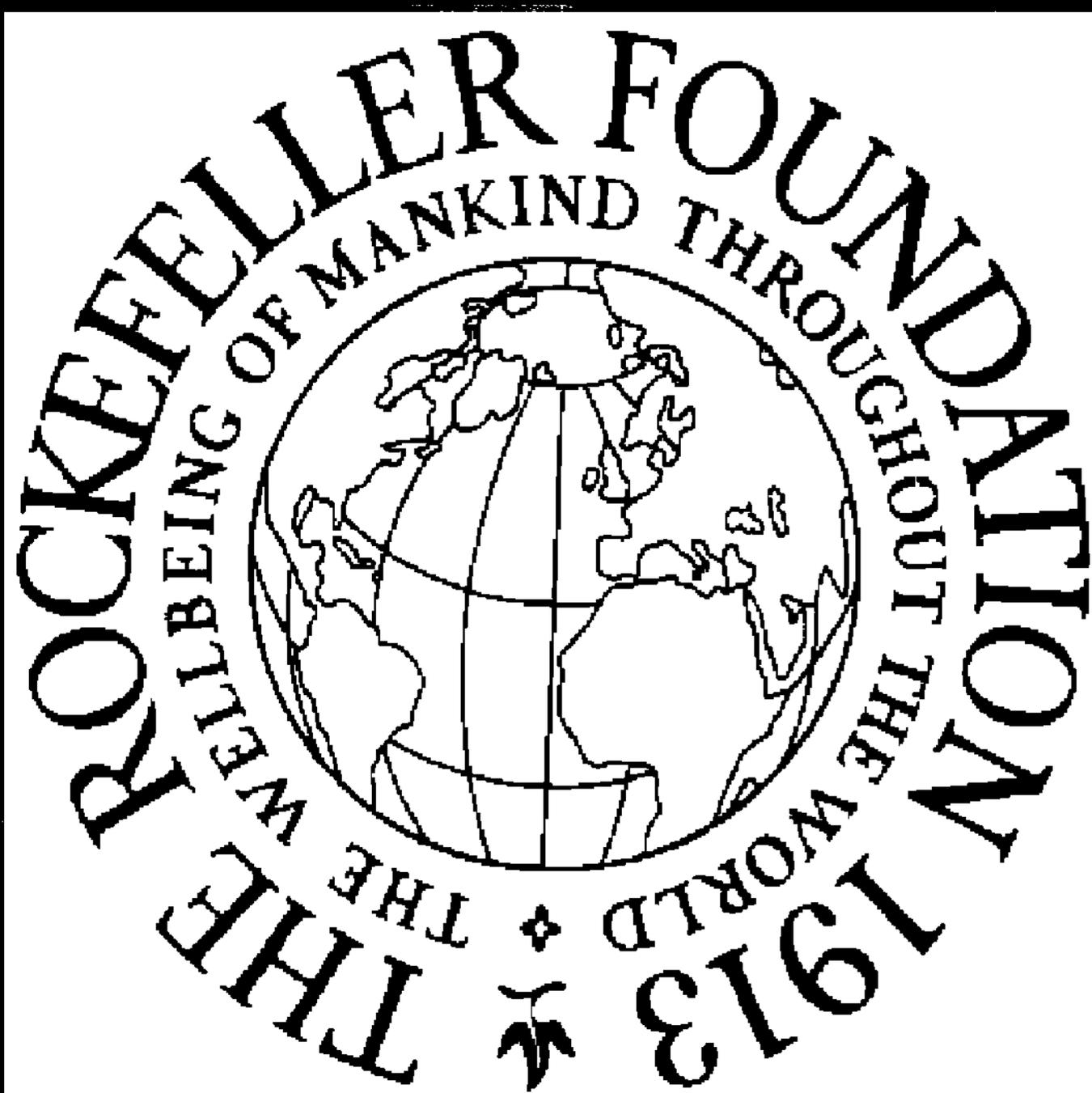
UNIVERSITY OF TEXAS AT AUSTIN: workshop for playwrights; \$13,800;

UNIVERSITY OF UTAH: to continue its Repertory Dance Theatre; \$145,000 for a three-year period;

WASHINGTON DRAMA SOCIETY: experimental workshops in theatre at the Arena Stage; \$10,000;

WESTERN COLLEGE, Ohio: experimental restructuring of educational procedures and operations; \$100,000 for a three-year period;

Bruce Petteway is president of the College of the Albemarle in North Carolina, a two-year college that actively recruits anyone legally out of high school. In addition to its academic program, the college offers employment-oriented training courses — ranging from welding and masonry to child care — that afford opportunities for employment in the seven-county region.



Photograph Excised Here

YALE UNIVERSITY, Connecticut:

Professional staffing of the Yale Repertory Theatre; \$225,000 through June, 1974;

To enable a photographer sponsored by the American Studies Program of the School of Art and Architecture to document some contemporary aspects of American Christianity; \$8,500.

QUALITY OF THE ENVIRONMENT

UNITED STATES

ACADEMY OF NATURAL SCIENCES OF PHILADELPHIA, Pennsylvania: research and graduate training in fresh-water ecology; \$293,000 through February, 1974;

ADMINISTRATION AND MANAGEMENT RESEARCH ASSOCIATION OF THE CITY OF NEW YORK: Mayor's Council on the Environment for an Environmental Intern Program; \$15,000;

BERMUDA BIOLOGICAL STATION FOR RESEARCH: installation of a new laboratory seawater system; \$15,000;

BOYCE THOMPSON INSTITUTE FOR PLANT RESEARCH, New York:

Research toward the preservation of a functional ecosystem in the Hudson River estuary; \$15,000;

Research on plant life of the Hudson River estuary designed to draw the cooperation of communities involved in helping to establish an ecological zoning plan for that portion of the river; \$386,000 through April, 1974;

CENTRAL MISSOURI STATE COLLEGE: student-originated study of environmental conditions in Warrensburg; \$10,924;

COLORADO STATE UNIVERSITY: research to determine the background levels of the mercury content of the environment in accumulations of bat guano dating back over the past several hundred years; \$25,000;

COLUMBIA UNIVERSITY, New York: School of Engineering and Applied Sciences for a survey of environmental pollution conducted by the New York City Science and Technology Advisory Council; \$25,000;

COMMITTEE FOR ECONOMIC DEVELOPMENT, New York: preparing an impartial nation-wide research report, leading to specific recommendations of public and private policies for controlling damage to the environment; \$125,000 for a two-year period;

CORNELL UNIVERSITY, New York:

Collaborative research and graduate training in the development of selective, non-persistent pesticides; \$50,000;

Collaborative studies on the role of insect pheromones in the biology and control of insect pests; \$25,000;

HARVARD UNIVERSITY, Massachusetts: for use by graduate students in its Department of Landscape Architecture for the study of environmental and other municipal problems in seven towns in Massachusetts and New Hampshire; \$15,000;

IOWA STATE UNIVERSITY: research on a new method of separating copper, tin, and chromium from automobile scrap steel; \$15,000;

- NEW YORK UNIVERSITY:** for use by the Medical Center's Institute of Environmental Medicine for preparation of a paper defining a research program on the ecology of the Hudson River Basin; \$5,000;
- OREGON STATE UNIVERSITY:** research and graduate studies of the biological, physical, economic, and social factors that influence environmental quality in the Willamette River Basin emphasizing development of alternative controls of air pollution; \$500,000 for a three-year period;
- RAND CORPORATION, California:** for a study of the effects of environmental constraints on the cost and availability of electric power; \$105,000 for a two-year period;
- RESOURCES FOR THE FUTURE, Washington, D. C.:** research incorporating political and other collective-choice features in a mathematical model which will permit examination of various strategies for residuals management; \$600,000 through December, 1974;
- STATE UNIVERSITY OF NEW YORK AT BINGHAMTON:** Laboratory for Trace Methods and Environmental Analysis for research on trace metals in the Upper Susquehanna River Basin; \$14,400;
- STUDENT COMPETITIONS ON RELEVANT ENGINEERING, Massachusetts:** support of an Urban Vehicle Design Competition; \$20,000;
- UNIVERSITY OF CALIFORNIA:**
- Berkeley*
- Collaborative studies on the role of insect pheromones in the biology and control of insect pests; \$25,000;
- Davis*
- Cooperative research and graduate training in plant resistance to insects, primarily to species of *Heliothis* and *Lygus*; \$25,400;
- Riverside*
- Collaborative research and graduate training in the development of selective, non-persistent pesticides; \$49,780;
- Collaborative studies on the role of insect pheromones in the biology and control of insect pests; \$25,000;
- UNIVERSITY OF COLORADO:** student-originated study of "The Environmental Effects of the 1976 Winter Olympics"; \$10,440;
- UNIVERSITY OF FLORIDA:**
- Research and graduate training by its Agricultural Research Center on utilization of aquatic vegetation by herbivorous fish; \$25,000;
- Planning of a major research program on the south Florida ecosystem by the Department of Environmental Engineering; \$15,000;
- UNIVERSITY OF ILLINOIS:**
- Research and graduate studies in the significance and sources of nitrogen entering waterways and the design and testing of alternative management practices to maintain agricultural productivity while minimizing pollution of surface and ground waters; \$600,000 for a four-year period;
- Collaborative research and graduate training in the development of selective, non-persistent pesticides; \$50,000;

UNIVERSITY OF MASSACHUSETTS: international symposium sponsored by the Northeastern Division of the American Fisheries Society on "River Ecology and the Impact of Man"; \$5,000;

UNIVERSITY OF OKLAHOMA: student-sponsored proposal on "Determination of the Major Sources of Pollution of the North Canadian River in Oklahoma County"; \$20,800;

WOODS HOLE OCEANOGRAPHIC INSTITUTION, Massachusetts: to investigate the feasibility of a combined tertiary sewage treatment and aquaculture system as a means of safeguarding plant and fish life from pollution; \$150,000 for a two-year period.

ALLIED INTERESTS

INTERNATIONAL

SUPPORT FOR INTERNATIONAL SCHOOLS; \$4,300;

FOR THE PRESENTATION of the John D. Rockefeller 3rd Award to Dr. Alfredo Aguirre and Dr. Alberto Pradilla; \$11,000;

SUPPORT OF A WORKING SEMINAR on social science research related to the unemployment problem in developing nations held at the Bellagio Study and Conference Center; \$14,000;

COLOMBIA

MICROBIOLOGY LABORATORY: *see International Cooperative Programs, page 106;*

ITALY

BELLAGIO STUDY AND CONFERENCE CENTER: *see International Cooperative Programs, page 106;*

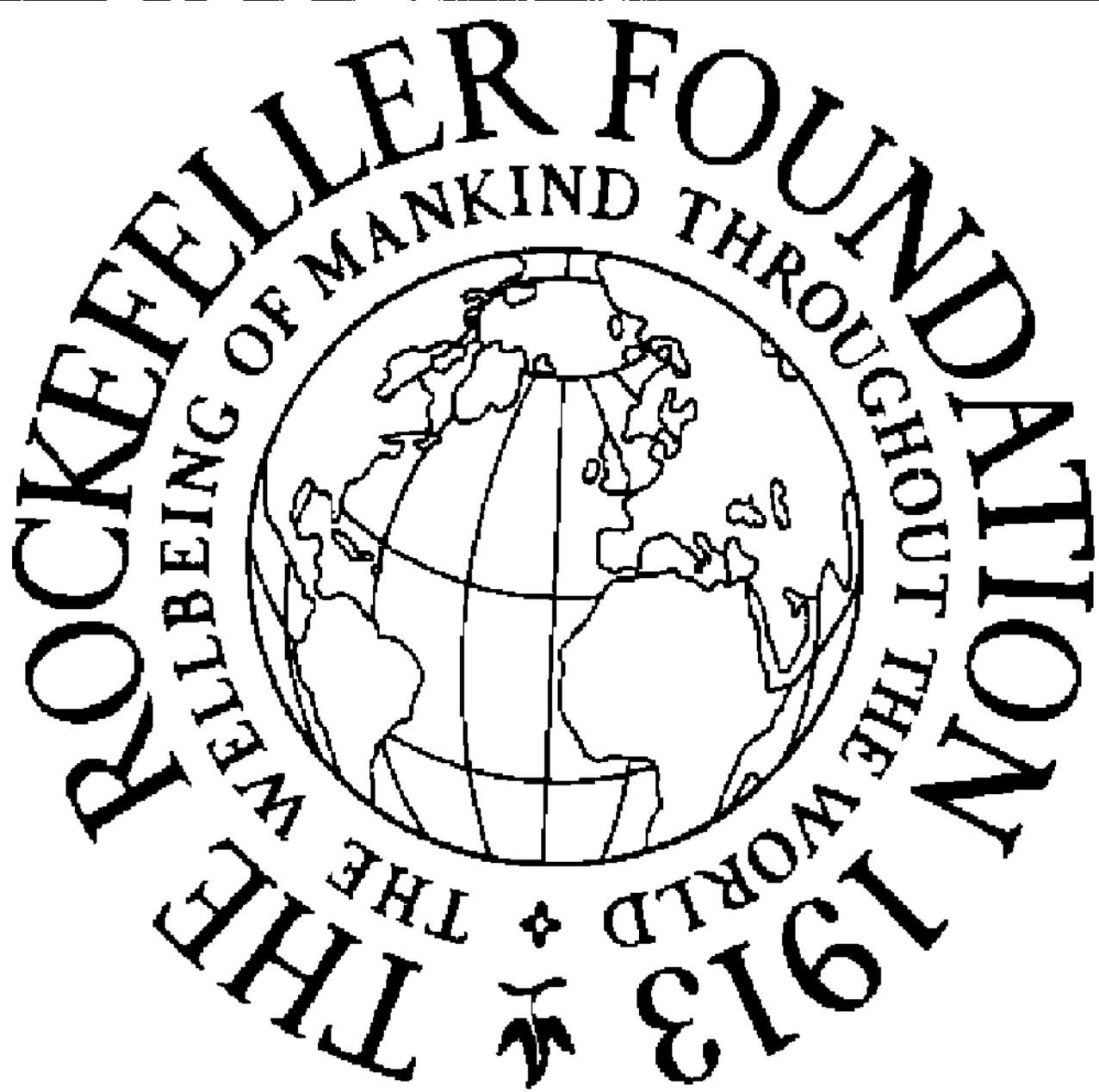
ST. LUCIA

SCHISTOSOMIASIS RESEARCH AND CONTROL PROJECT: *see International Cooperative Programs, page 106;*

SWITZERLAND

GENEVA GRADUATE INSTITUTE OF INTERNATIONAL STUDIES: advanced training for graduate students from Africa, Asia, and Latin America; \$100,000 through August, 1975;

Ronald J. Pion, M.D., now professor of public health at the University of Hawaii, previously directed the Division of Family Planning and Education at the University of Washington's medical school. The division has offered a weekly discussion program on the university's television station, organized medical students as a speaker's bureau for teen-age and adult groups, and prepared course materials for in-service training of teaching and health personnel in the city and state school systems.



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UNITED KINGDOM

UNIVERSITY OF CAMBRIDGE: preparation of an international survey of crime and its control at the Institute of Criminology; \$15,000;

UNIVERSITY OF SUSSEX:

Toward support of its Institute for the Study of International Organisation; \$75,000 for a five-year period;

Preparation of a volume on states-systems by the British Committee on the Theory of International Politics; \$12,500;

UNITED STATES

AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE, Washington, D. C.: planning study of television programming designed to enhance the public understanding of science; \$15,000;

AMERICAN BAR FOUNDATION, Illinois: study of the impact of the provisions of the Tax Reform Act of 1969 on foundations; \$20,000;

AMERICAN UNIVERSITIES FIELD STAFF, New Hampshire: comparative study of contemporary cultural youth movements in the west by James Richard Hougan; \$13,500;

ASSOCIATION OF THE BAR OF THE CITY OF NEW YORK FUND: Study on Decentralization of Government in New York City; \$15,000;

BROOKINGS INSTITUTION, Washington, D. C.: to enable Denisard Oliveira Alves, research associate, Institute of Economic Research, University of São Paulo, Brazil, to undertake a preliminary study on employment patterns and labor force absorption in Latin America; \$9,500;

COLUMBIA UNIVERSITY, New York:

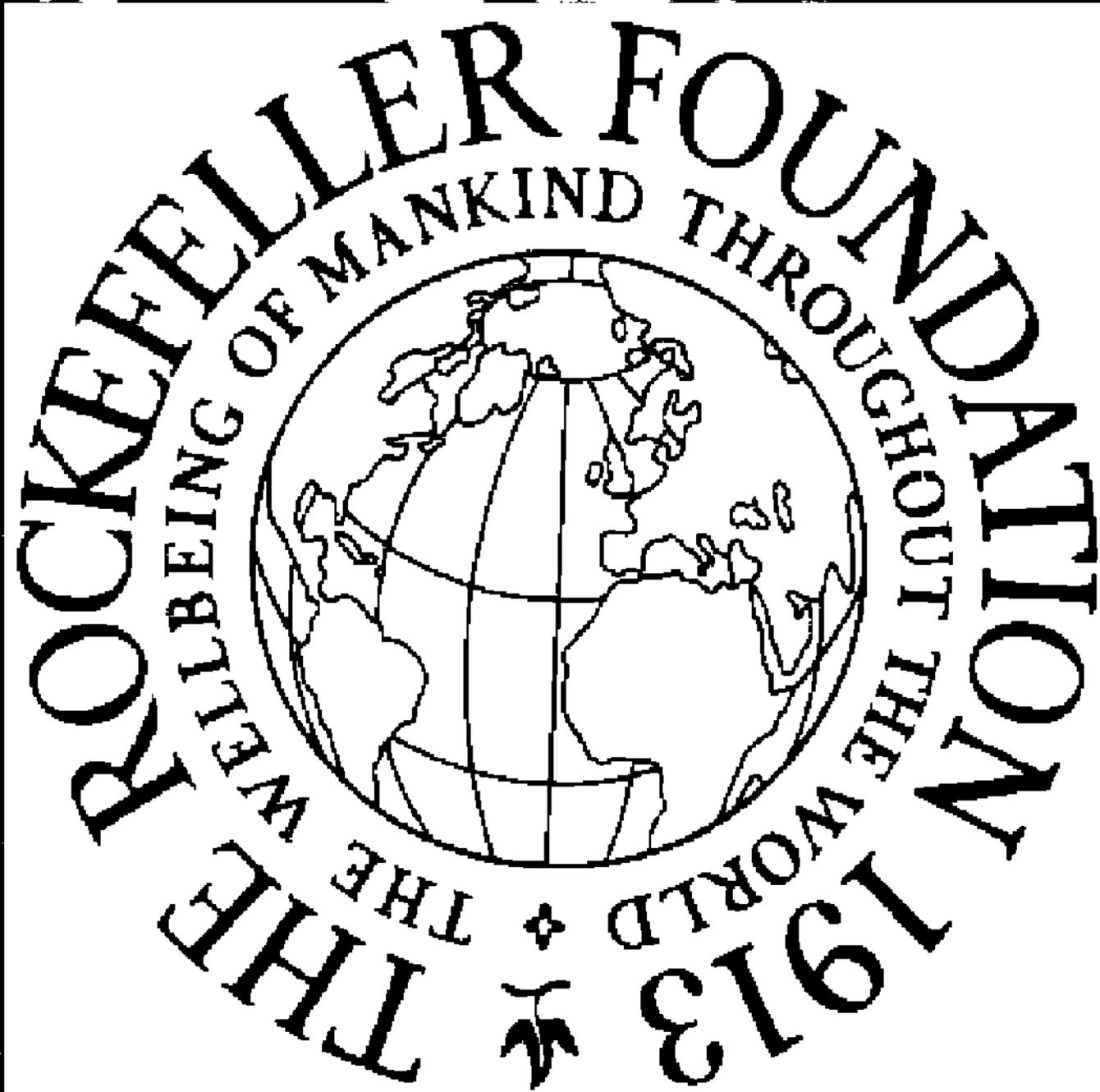
Community health programs to be conducted by the Center for Community Health Systems of the Faculty of Medicine of the College of Physicians and Surgeons; \$500,000 for a three-year period;

Preparation of the memoirs of Dr. E. C. Stakman by the Oral History Research Office; \$156;

FLORIDA STATE UNIVERSITY: Department of Economics for research on economic aspects of increasing grain production in less developed countries; \$15,000;

FOUNDATION CENTER, New York: toward its general support for a five-year period; \$250,000;

Robert Brustein, distinguished drama critic and director, heads the Yale School of Drama, which under his leadership has become once again one of America's largest and most vital theatre training centers. Yale's resident Repertory Company offers students the opportunity to combine study with professional work in all areas of theatre; it offers productions of new plays as well as neglected plays of other periods.



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HARVARD UNIVERSITY, Massachusetts:

Programs conducted by its Center for Community Health and Medical Care; \$750,000 through April, 1974;

To enable its School of Public Health to participate in an experimental program to develop a new system of health planning at the University of Valle, Colombia; \$15,000;

INSTITUTE FOR INTERNATIONAL ORDER, New York: for use by its World Law Fund toward research on the World Order Model Project undertaken by the Academy for Political and Social Research, New Delhi; \$15,000;

INSTITUTE FOR THE STUDY OF HEALTH AND SOCIETY, Washington, D. C.: planning and developing its program; \$25,000;

INSTITUTE OF INTERNATIONAL EDUCATION, New York: support of its Program of Educational and Technical Exchange with Central America and the Caribbean; \$15,000;

INTERNATIONAL ASSOCIATION FOR THE STUDY OF GROUP TENSIONS, New York: preparation for its 1971 planning conference held at the Bellagio Study and Conference Center; \$3,000;

NATIONAL COUNCIL ON CRIME AND DELINQUENCY, New Jersey: development of course materials in the areas of negotiation and arbitration for use in the training of correctional administrators; \$25,000;

OHIO LEADERSHIP DYNAMICS INSTITUTE: for use by its Ohio Governor's School toward a pilot program of internships in governmental processes for young people; \$5,000;

OVERSEAS DEVELOPMENT COUNCIL, Washington, D. C.: continuing program of reappraisal, research, and education on the problems and needs of the less-developed countries; \$125,000;

ROCKEFELLER ARCHIVES AND RESEARCH CENTER, New York: planning, construction, and organization; \$126,600;

STUDENT ADVISORY COMMITTEE ON INTERNATIONAL AFFAIRS, Washington, D. C.: for its Dialogue Program; \$15,000;

TOWARD THE COST of preparation, publication, and distribution of the Foundation's Fellowship and Scholarship Directory; \$25,000;

UNITED WAY OF AMERICA, New York: implementation of uniform standards of accounting and budgeting in affiliate organizations; \$25,000;

Herbie Miller, now a special assistant for community relations to the New York City Commissioner of Police, was for several years a street worker in the New York Urban League's Street Academy program. The staff, in cooperation with four problem-area Manhattan high schools, worked with students and their families, helping dropouts get back into school or into useful employment or job training and encouraging potential dropouts to remain in school and aim toward college or vocational training.



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UNIVERSITY OF COLORADO: for use by its International Economic Studies Center toward support of a Cooperative Research and Training Program with the Autonomous University of Guadalajara, Mexico; \$15,000;

UNIVERSITY OF SOUTHERN CALIFORNIA: studies of potential benefits to be obtained from resource sharing among the University of California, Los Angeles, the California Institute of Technology, and the University of Southern California; \$25,000;

UNIVERSITY OF VIRGINIA: conference on "The Open Society" to be held at the Bellagio Study and Conference Center in the summer of 1972; \$15,000;

U. S. DEPARTMENT OF COMMERCE, Washington, D. C.: White House Conference on the Industrial World Ahead; \$15,000;

YALE ARBOVIRUS RESEARCH UNIT, Connecticut: *see International Cooperative Programs, page 106;*

YALE UNIVERSITY, Connecticut: for the completion of data analysis from the Belém Virus Laboratory; \$13,421;

ZAIRE

NATIONAL UNIVERSITY OF ZAIRE: development of a graduate program in social history; \$11,220.

STUDY AWARDS



The Foundation's study awards are closely integrated with its interests in the agricultural sciences, the biomedical sciences, the social sciences, and the arts and humanities. Awards are made internationally to outstanding men and women who have shown promise of making important contributions to their fields of study in their native countries. Today direct fellowship-scholarship awards are made principally for the training of selected individuals drawn from those developing institutions abroad in which the Foundation has an active program interest. For 1971 the Trustees approved a fund of \$3,810,000 for fellowships and scholarships. A fund of \$3,200,000 was approved for allocation during 1972.

This fund by no means represents the full extent of the Foundation's commitment to training. Most grants to universities and research institutes, as well as to other types of organizations, include funds to permit the inclusion of graduate students or other trainees, as may be appropriate, in the enterprise. And some substantial Foundation grants, including grants in previous years to the Population Council and the Social Science Research Council, have as their sole or principal purpose the provision of training opportunities by the grantee institution.

During 1971 a total of 434 persons held Foundation fellowships and scholarships; 347 awards that began in previous years continued active in 1971, and 87 new awards became active during the year. Their distribution by program is as follows:

	STUDY AWARDS FROM PREVIOUS YEARS CONTINUED INTO 1971	NEW AWARDS IN 1971	NUMBER OF AWARDS ACTIVE IN 1971
Agricultural Sciences	149	18	167
Arts and Humanities	13	4	17
Biomedical Sciences	83	31	114
Social Sciences	102	31	136
	<hr/> 347	<hr/> 87	<hr/> 434

Rockefeller Foundation fellows and scholars in 1971 came from the following countries:

	PREVIOUS AWARDS	NEW AWARDS		PREVIOUS AWARDS	NEW AWARDS
Argentina	1		Nigeria	43	14
Bolivia	1		Pakistan	1	
Brazil	21		Paraguay	1	
Ceylon	1		Peru	15	
Chile	18		Philippines	32	6
Colombia	42	19	Sudan	1	
Ecuador	5	1	Taiwan	2	
Ethiopia	4		Tanzania	17	5
Guatemala	3		Thailand	67	22
Guyana	1		Trinidad	1	
India	12		Turkey	6	2
Iran	1		Uganda	16	5
Kenya	16	8	United Arab Republic	1	
Korea	1		United States	1	2
Malawi	1		Zaire	1	
Mexico	13	3		<hr/>	<hr/>
Nicaragua	1			347	87

FELLOWS AND SCHOLARS: 1971 AWARDS

F: Fellow; S: Scholar; AGR: Agricultural Sciences; BMS: Biomedical Sciences; AH: Arts and Humanities; SS: Social Sciences; RB: Reproductive Biology

COLOMBIA

ENRIQUE CASTELLANOS-MOLINA M.A., Williams College, 1966. Physics. Appointed from University of Valle. Place of study: U.S.A. s-BMS

J. ARMANDO CUBILLOS B.S., National University, 1958. Public Health-Sanitary Engineering. Appointed from University of Valle. Place of study: U.S.A. s-BMS

RAMIRO DE LA CRUZ M.S., Iowa State University, 1969. Plant Science-Physiology. Appointed from Colombian Institute of Agriculture. Place of study: U.S.A. s-AGR

CARLOS DIAZ B.S., National University, 1967. Physics. Appointed from University of Valle. Place of study: U.S.A. s-BMS

ERIKA DIEROLF M.A., University of Texas, 1970. Economics. Appointed from University of Valle. Place of study: U.S.A. s-SS

JAVIER FERNANDEZ RIVA B.S., Catholic University, 1968. Economics. Appointed from University of Valle. Place of study: U.S.A. s-SS

JORGE ELIECER GAITAN-SALAZAR M.D., University of Valle, 1961. Medicine. Appointed from University of Valle. Place of study: U.S.A. s-BMS

- EDUARDO FEDERICO GONZALEZ G. D.M.V., University of Madrid, 1967. Animal Science-Veterinary Science-Pathology. Appointed from Colombian Institute of Agriculture. Place of study: U.S.A. s-AGR
- LUIS VICENTE MALAVER H. Ing. Agr., University of Caldas, 1963. Plant Physiology-Weed Control-Ecology. Appointed from National University. Place of study: U.S.A. s-AGR
- GUSTAVO ARMANDO MORALES M.S., University of Connecticut, 1970. Veterinary Science-Pathology. Appointed from International Center of Tropical Agriculture. Place of study: U.S.A. s-AGR
- JAIIME NAVAS M.S., Purdue University, 1969. Soil Science-Fertility and Management. Appointed from Colombian Institute of Agriculture. Place of study: U.S.A. s-AGR
- FRANCISCO HELADIO PINEDA POLO Licenciado, University of Bogotá, 1967. Marine Biology. Appointed from University of Valle. Place of study: U.S.A. s-BMS
- LUIS EDUARDO QUINTERO Civil Engineer, Pontificia University Javeriana. 1965. Agricultural Engineering. Appointed from University of Valle. Place of study: U.S.A. s-BMS
- HAROLD J. RIZO M.A., University of Notre Dame, 1971. Political Science. Appointed from University of Valle. Place of study: U.S.A. s-ss
- CARLOS ROA MEJIA M.S., University of Maryland, 1970. Economics. Appointed from University of Valle. Place of study: U.S.A. s-ss
- CARLOS JULIO RODRIGUEZ B.A., University of Valle, 1970. Mathematics. Appointed from University of Valle. Place of study: Mexico. s-BMS
- CARLOS THOMPSON M.S., City College of the City University of New York, 1969. Chemical Engineering. Appointed from University of Valle. Place of study: U.S.A. s-BMS
- RAMIRO TOBON-RAMIREZ M.A., Amherst College, 1966. Physics. Appointed from University of Valle. Place of study: U.S.A. s-BMS
- JULIO CESAR TORO MEZA M.S., Purdue University, 1967. Crop Production. Appointed from International Center of Tropical Agriculture. Place of study: U.S.A. s-AGR

ECUADOR

- GUSTAVO ANIBAL VERA MOSQUERA M.S., Purdue University, 1969. Agronomy. Appointed from National Institute of Agricultural Research. Place of study: U.S.A. s-AGR

KENYA

- PETER ANYANG'NYONG'O B.A., Makerere University, 1971. Political Science. Appointed from University of Nairobi. Place of study: U.S.A. s-ss
- NILAM BEDI M.Sc., University of London, 1970. Agricultural Economics. Appointed from University of Nairobi. Place of study: U.S.A. s-ss
- AZIZ S. GIGA B.S., Makerere University College, 1969. Organic Chemistry. Appointed from University of Nairobi. Place of study: U.S.A. s-BMS
- EDWARD R. KARANJA M.A., Northern Illinois University, 1968. Public Administration. Appointed from University of Nairobi. Place of study: U.S.A. s-ss
- JAMES G. KARUGA B.A., University of Sussex, 1970. Economics. Appointed from University of Nairobi. Place of study: U.S.A. s-ss
- PETER K. KINYANJUI B.A., University College, Dar es Salaam, 1970. Education. Appointed from University of Nairobi. Place of study: U.S.A. s-AM

JOHN C. ONYANGO-ABUJE B.A., Makerere University College, 1970. Anthropology-Archaeology. Appointed from University of Nairobi. Place of study: U.S.A. s-ss

BILLY O. WANDERA B.Sc., University College, Nairobi, 1970. Mathematics. Appointed from University of Nairobi. Place of study: U.S.A. s-BMS

MEXICO

JOSE LUIS MAYA DEL LEON M.S., National School of Agriculture, 1969. Plant Breeding. Appointed from International Maize and Wheat Improvement Center. Place of study: U.S.A. s-AGR

EVERARDO GONZALEZ PADILLA M.Sc., University of Florida, 1969. Animal Science-Nutrition-Physiology. Appointed from National Institute of Livestock Research. Place of study: U.S.A. s-AGR

SOCRATES C. RIZZO Licenciado in Economics, University of Nuevo Leon, 1969. Economics. Appointed from Colegio de México. Place of study: U.S.A. s-ss

NIGERIA

DANIEL D. ABASIEKONG M.A., Columbia University, 1970. Comparative Literature. Appointed from University of Ibadan. Place of study: U.S.A. s-AH

MUSA ABDULLAH M.A., University of Kent, 1971. Sociology. Appointed from Ahmadu Bello University. Place of study: U.S.A. s-ss

OLUGBEMI AKINKOYE B.Sc., University of Ibadan, 1970. Demography. Appointed from University of Ibadan. Place of study: U.S.A. s-ss

MESHACH E. AKPE B.A., University of Ghana, 1962. Public Administration. Appointed from University of Ibadan. Place of study: U.S.A. s-ss

BENONI C. BRIGGS M.Sc., University of Ibadan, 1970. Economics. Appointed from University of Ibadan. Place of study: U.K. s-ss

JONAH I. ELAIGWU B.Sc., Ahmadu Bello University, 1971. Political Science-International Relations. Appointed from Ahmadu Bello University. Place of study: U.S.A. s-ss

OLAYIWOLA A. ERINOSH O M.A., University of Toronto, 1971. Sociology. Appointed from University of Ibadan. Place of study: Canada s-ss

EYITAYO LAMBO B.Sc., University of Ibadan, 1968. Economics. Appointed from University of Ibadan. Place of study: U.S.A. s-ss

OLUWUMI LONGE M.Sc., University of Sydney, 1967. Computer Science. Appointed from University of Ibadan. Place of study: U.S.A. s-BMS

GINIGEME F. MBANEFOH B.Sc., University of Ibadan, 1967. Economics. Appointed from University of Ibadan. Place of study: U.S.A. s-ss

DOMINIC A. OKORIE Ph.D., University of Ibadan, 1969. Chemistry. Appointed from University of Ibadan. Place of study: U.S.A. F-BMS

FREDERICK E. ONYEOZIRI B.Sc., University of Ibadan, 1967. Public Administration. Appointed from University of Ibadan. Place of study: U.S.A. s-ss

SOLOMON O. UNOH M.Ed., Queen's University (Belfast), 1966. Psychology. Appointed from University of Ibadan. Place of study: U.S.A. s-ss

AKINTUNDE ISHOLA OLADIPO WILLIAMS Ph.D., University of Ibadan, 1971. Biochemistry. Appointed from University of Ibadan. Place of study: U.S.A. F-BMS

PHILIPPINES

- SALVACION G. BAYLON** B.S.N., University of the Philippines, 1964. Public Health Nursing. Appointed from University of the Philippines. Place of study: U.S.A. s-BMS
- GERONIMO M. COLLADO** M.A., University of Wisconsin, 1970. Agricultural Economics-Agribusiness. Appointed from University of the Philippines. Place of study: U.S.A. s-ss
- EDWIN T. DECENTECEO** A.B., University of the Philippines, 1969. Psychology. Appointed from University of the Philippines. Place of study: U.S.A. s-ss
- EMMANUEL T. FLORESCA** M.S., University of the Philippines, 1960. Agronomy. Appointed from International Rice Research Institute. Place of study: U.S.A. s-AGR
- BASILIO BAQUIRAN MABBAYAD** M.S., University of the Philippines, 1967. Plant Science-Physiology. Appointed from University of the Philippines. Place of study: U.S.A. s-AGR
- ENRIQUE C. PALLER, JR.** M.Sc., University of Reading, 1968. Plant Science-Agronomy-Weed Control. Appointed from University of the Philippines. Place of study: U.S.A. s-AGR

TANZANIA

- WILLIAM M. CHAMUNGWANA** B.A., University of Dar es Salaam, 1971. Political Science. Appointed from University of Dar es Salaam. Place of study: U.S.A. s-ss
- NGANYIRWA J. KAROMA** B.A., University of Dar es Salaam, 1971. Archaeology. Appointed from University of Dar es Salaam. Place of study: U.S.A. s-ss
- JACKSON N. KESSI** M.Sc., University of London, 1969. Economics. Appointed from University of Dar es Salaam. Place of study: U.S.A. s-ss
- JAMES MAINOYA** M.S., University of Dar es Salaam, 1971. Biology-Zoology. Appointed from University of Dar es Salaam. Place of study: U.S.A. s-BMS
- DANIEL J. MKUDE** B.A., University of Dar es Salaam, 1971. Linguistics. Appointed from University of Dar es Salaam. Place of Study: U.K. s-AN

THAILAND

- APHICHAT CHAMRATHIRONG** B.A., Chulalongkorn University, 1970. Sociology. Appointed from Mahidol University. Place of study: U.S.A. s-BMS
- CHAIYUTH BOONYANITAYA** B.A., Chulalongkorn University, 1970. Public Health Administration. Appointed from Mahidol University. Place of study: U.S.A. s-BMS
- KAVI SUVARNAKICH** M.D., Mahidol University, 1965. Social and Community Psychiatry. Appointed from Mahidol University. Place of study: U.S.A. s-BMS
- KRIT MONGKONPUNHA** M.S., West Pakistan Agricultural University, 1967. Animal Science-Nutrition-Physiology. Appointed from Kasetsart University. Place of study: U.S.A. s-AGR
- MAHN BHOVICHITRA** M.Agt., University of Tokyo, 1967. Marine Biology. Appointed from Kasetsart University. Place of study: U.S.A. s-BMS
- NUALCHAWEE SUTHAMWONG** M.A., Chulalongkorn University, 1971. Library Science. Appointed from Thammasat University. Place of study: U.S.A. s-ss
- LIKHIT DHIRAVEGIN** M.A.L.D., Tufts University, 1969. Political Science. Appointed from Thammasat University. Place of study: U.S.A. s-ss
- PAIBOON PRABUDDHAM** M.S., University of the Philippines, 1966. Soil Science. Appointed from Kasetsart University. Place of study: U.S.A. s-AGR

- POOLSOOK POSYASVIN** B.S., Mahidol University, 1969. Maternal and Child Health Community Nursing. Appointed from Mahidol University. Place of study: U.S.A. s-BMS
- PORNCHAI BOODSAYASAKUL** B.A., Thammasat University, 1966. Sociology. Appointed from Mahidol University. Place of study: U.S.A. s-BMS
- PRAMOTE PRASANTKUL** B.A., Chulalongkorn University, 1970. Development Sociology. Appointed from Mahidol University. Place of study: U.S.A. s-BMS
- PREECHA SAKARINDR** M.S., Oregon State University, 1964. Statistics. Appointed from Thammasat University. Place of study: U.S.A. s-SS
- SERENE VIMOKESANT** D.Sc., Harvard University, 1962. Biochemistry-Nutrition. Appointed from Mahidol University. Place of study: U.S.A. F-BMS
- SIRIPORN NITAYANGKURA** B.Sc., Chulalongkorn University, 1968. Botany. Appointed from Mahidol University. Place of study: U.S.A. s-BMS
- SOMLUCKRAT WATTANAVITUKUL** M.A., Thammasat University, 1971. Economics. Appointed from Thammasat University. Place of study: U.S.A. s-SS
- STITAYA SIRISINHA** Ph.D., University of Rochester, 1965. Microbiology. Appointed from Mahidol University. Place of study: U.S.A. F-BMS
- SURANYA NITUNGKORN** M.A., Vanderbilt University, 1969. Economics. Appointed from Thammasat University. Place of study: U.S.A. s-SS
- SURACHAI CHAKRIYARAT** M.S., University of the Philippines, 1969. Animal Science-Dairy Husbandry. Appointed from Kasetsart University. Place of study: U.S.A. s-AGR
- SURAPHONG KOSIAYACHINDA** M.S., University of Hawaii, 1967. Plant Physiology. Appointed from Kasetsart University. Place of study: U.S.A. s-AGR
- SUTASINEE TUWASIN** B.Sc., Mahidol University, 1967. Medical-Surgical Nursing. Appointed from Mahidol University. Place of study: U.S.A. s-BMS
- SUWADEE SRILENAWATI** B.S., Punjab University, 1967. Pediatric Nursing. Appointed from Mahidol University. Place of study: U.S.A. s-BMS
- WUNPEN BONGKUSHSIT** B.A., Thammasat University, 1970. Philosophy. Appointed from Thammasat University. Place of study: U.S.A. s-AH

TURKEY

- CEVDET DUTLU** B.S., Ege University, 1962. Plant Pathology. Appointed from Ministry of Agriculture. Place of study: U.S.A. s-AGR
- CEMAL NADIR IZGIN** B.S., Ankara University, 1965. Soil Science-Fertility and Management. Appointed from Wheat Research and Training Center. Place of study: U.S.A. s-AGR

UGANDA

- VALENTINE J. AKENDA-ONDOGA** B.Sc., Makerere University, 1971. Agricultural Economics. Appointed from Makerere University. Place of study: U.S.A. s-SS
- EDWARD KANNYO** B.A., Makerere University, 1971. Political Science. Appointed from Makerere University. Place of study: U.S.A. s-SS
- GABRIEL M. B. KARTISA** B.Sc., Makerere University, 1970. Economics. Appointed from Makerere University. Place of study: U.S.A. s-SS
- VIRGINIO L. ONGOM** M.B.B.S., Agra University, 1965. Public Health. Appointed from Makerere University. Place of study: U.K. s-BMS

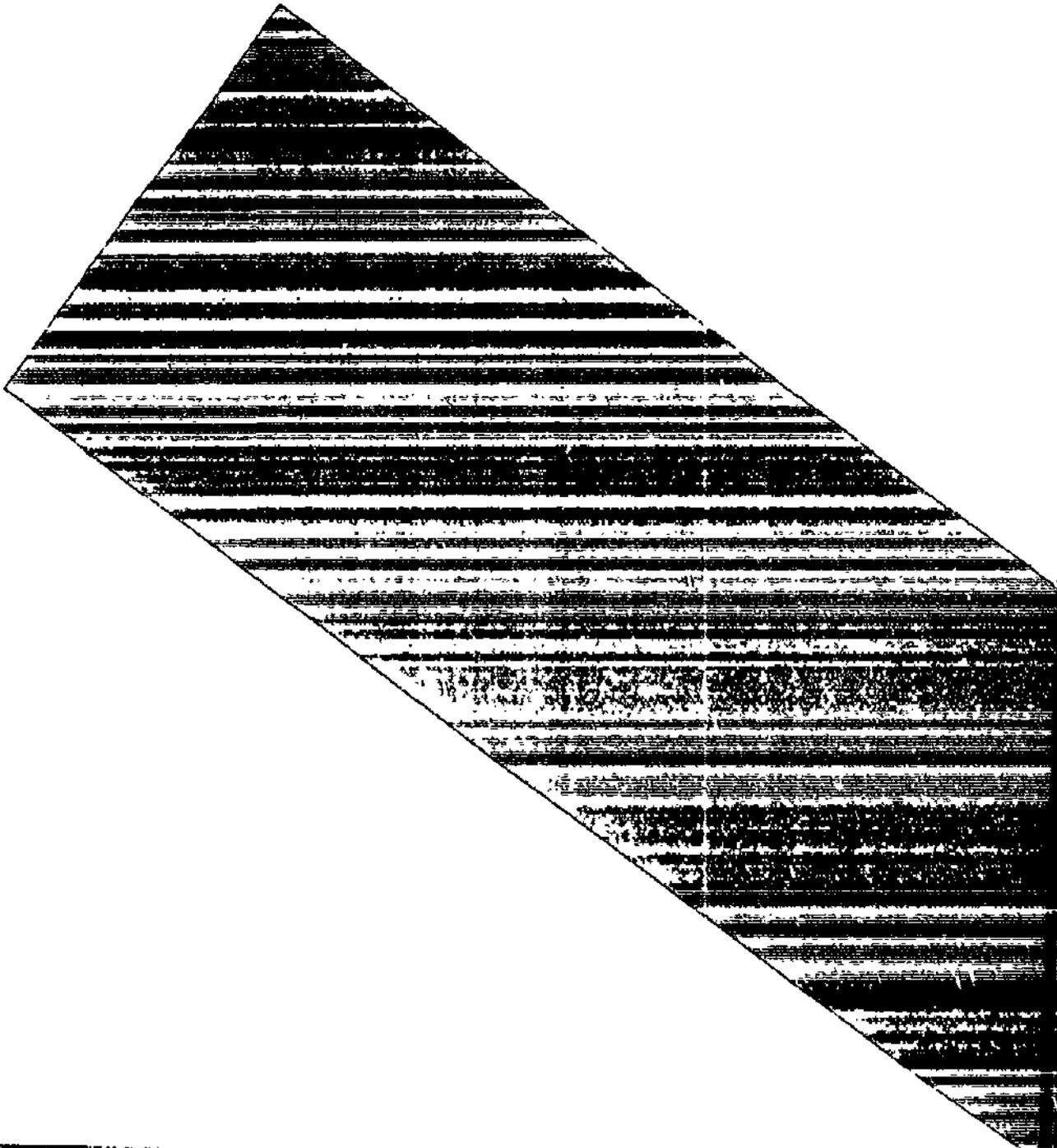
JOE M. A. OPIO-ODONGO B.Sc., Makerere University, 1971. Rural Sociology. Appointed from Makerere University. Place of study: U.S.A. s-ss

UNITED STATES

WILLIAM H. BEERS, III Ph.D., Rockefeller University, 1971. Reproductive Biology. Appointed from Rockefeller University. Place of study: U.S.A. F-BMS-RB

GARY VANDENBERG M.D., University of Michigan, 1965. Reproductive Biology. Appointed from Passavant Memorial Hospital, Illinois; and Boston Hospital for Women, Lying-In Division. Place of study: U.S.A. F-BMS-RB

ORGANIZATIONAL INFORMATION



MEETINGS

The annual meeting of the Corporation and a regular stated meeting of the Board of Trustees were held on April 7; a special meeting of the Board was held on September 13; and a stated meeting of the Board was held on December 6 and 7. Five regular meetings and one special meeting of the Executive Committee of the Trustees were held to take actions within the general policies approved by the Board.

TRUSTEES AND OFFICERS

John D. Rockefeller 3rd, Chairman of the Board since 1952 and a Trustee since 1931, retired in June. He was named Honorary Chairman, effective July 1. Under his leadership, The Rockefeller Foundation has entered into long-term commitments in international programs and expanded support for domestic interests.

Mr. Rockefeller was among the first, some 40 years ago, to recognize the importance and urgency of population research. In 1952 he founded the Population Council. And in 1963 the Trustees of the Foundation formalized the field of population stabilization as one of their major interests. Since then almost \$46 million has been appropriated for training, research, and action programs.

Mr. Rockefeller's association with the Foundation has reflected his commitments in other fields as well. During the era of his chairmanship, the Foundation has carried out the major part of the work that has led to the Green Revolution; has completed the program of virus research that began with the yellow fever campaign; has supported independent scholarly work in international relations, economics, and political opportunities; has redirected its programs toward emphasis on the developing regions of the world; has provided crucial leadership, training opportunities, and financial assistance to selected universities in several such regions; has concerned itself deeply with problems of minority-group opportunity in the United States—

John D. Rockefeller 3rd retired in June after 40 years as a Trustee and nearly two decades as Chairman of the Board. Under his leadership the Foundation launched strong programs in the allied causes of population stabilization and increased food production, and strove to develop and encourage creative solutions to critical problems within the United States.



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particularly access to education; has entered upon a new and vitally important engagement with problems of environment; and has begun to find ways of improving health care available to broad populations in the United States and a number of developing nations.

His deep conviction that creative fulfillment through the arts is important to individual satisfaction and happiness encouraged the Foundation to adopt an expanded program for the support of music, theatre, and the dance at a time when private funds were scarce and public funds nonexistent.

On the occasion of his retirement, the Trustees said: "John D. Rockefeller occupies a unique position of leadership among the philanthropists who have anticipated the challenges of our time and helped to develop effective responses. His concern for private philanthropy as a social force has transcended his association with The Rockefeller Foundation. For all those to whom are entrusted private funds for all the public benefit, Mr. Rockefeller's example has been a challenge: to be alert and swift in responding to new needs and to remember that private philanthropy's continued usefulness depends on its ability to help develop imaginative solutions to today's problems."

Douglas Dillon, Secretary of the Treasury from 1960 to 1965, succeeds Mr. Rockefeller as Chairman of the Board of Trustees of The Rockefeller Foundation. Mr. Dillon is President of the U.S. and Foreign Securities Corporation. A former Ambassador to France, he was appointed Under Secretary of State for Economic Affairs and Under Secretary of State by President Eisenhower, and Secretary of the Treasury by President Kennedy. Mr. Dillon was a Trustee of the Foundation from 1960 to 1961; he was re-elected in 1965. He was Chairman of the Finance Committee from July 1968 to July 1971 and has been a member of the Executive Committee since 1966.

Whitney M. Young, Jr., former Executive Director of the National Urban League, died on March 11. Mr. Young, a Trustee since 1968, was Dean of the School of Social Work of Atlanta University from 1954 until 1960. He served on seven presidential commissions and worked closely with three

As executive director of the National Urban League from 1961 until his death on March 11, 1971, Whitney Young, Jr., elected a Trustee in 1968, was a tireless worker and a pioneering spokesman for equality and justice.



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Presidents to achieve expanded opportunities in education and employment for the black American poor.

W. Barry Wood, Jr., pre-eminent bacteriologist, died March 9. A Trustee of the Foundation since 1954, Dr. Wood was Head of the Department of Microbiology at Johns Hopkins University from 1959 until his death.

Thomas J. Watson, Jr., currently Chairman of the Executive Committee of the IBM Corporation, resigned from the Board effective June 30. Mr. Watson had been a Trustee since 1963, serving on the Finance, Executive, and Nominating Committees.

Barry Bingham, editor and publisher of *The Courier-Journal* and *The Louisville Times*, retired from the Board effective June 30. He was elected a Trustee in 1958 and had served as a member of the Executive Committee.

At the April meeting of the Corporation, Vernon E. Jordan, Jr., Executive Director of the National Urban League, was elected a Trustee. Prior to joining the League in January, 1972, Mr. Jordan had been Executive Director of the United Negro College Fund.

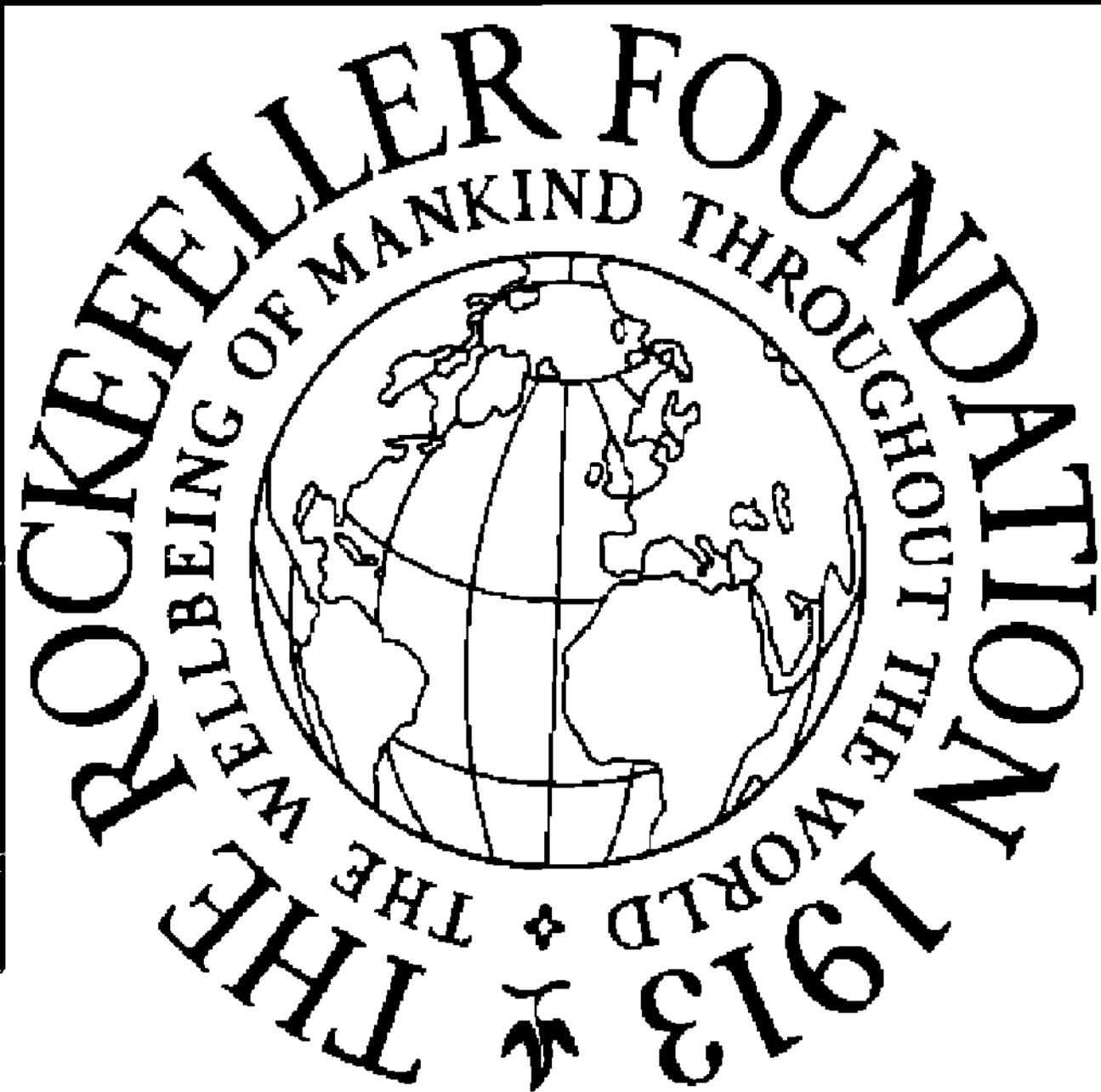
Also at the April meeting, Dr. Mathilde Krim was elected a Trustee. A geneticist specializing in cytogenetics and tumor-inducing viruses, Dr. Krim is an Associate at the Sloan-Kettering Institute for Cancer Research.

Maurice F. Strong, Secretary General of the United Nations Conference on Human Environment, was also elected a Trustee, effective July 1. Mr. Strong is a former Director General of the Canadian International Development Agency and has been actively involved in several private organizations devoted to development and international affairs.

Nevin S. Scrimshaw, formerly consultant to the Foundation in the area of nutritional sciences, also became a Trustee in July. Dr. Scrimshaw has been Professor of Human Nutrition and Head of the Department of Nutrition and Food Science at the Massachusetts Institute of Technology since 1961.

W. Michael Blumenthal, chairman, chief executive officer, and president of the Bendix Corporation, was elected a Trustee at the December meeting. He was earlier Deputy Assistant Secretary of State for Economic Affairs and

W. Barry Wood, Jr., a Trustee since 1954, died March 9, 1971. Dr. Wood was a noted bacteriologist and had headed the Department of Microbiology at Johns Hopkins University School of Medicine for 12 years.



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then deputy special representative for trade negotiations under Presidents Kennedy and Johnson.

Except for the retirement of Mr. John D. Rockefeller 3rd and the election of Mr. Douglas Dillon as Chairman of the Board, there was only one change in the composition of the principal officer group during 1971. Dr. Ralph W. Richardson, Jr., was named Director for Natural and Environmental Sciences, beginning February 1. Dr. Richardson was with the Foundation's Mexican Agricultural Program from 1951 until 1962, when he was appointed an Assistant Director for Agricultural Sciences. Three years later he became Associate Director and in 1970 was named Deputy Director for Agricultural Sciences.

At a special meeting of the Board on September 13, John H. Knowles, M.D., was elected to succeed J. George Harrar as President of the Foundation on July 1, 1972. Dr. Knowles is a research physician and medical administrator of national reputation who has demonstrated a remarkable awareness that institutions must adapt themselves to the manifest needs of the times.

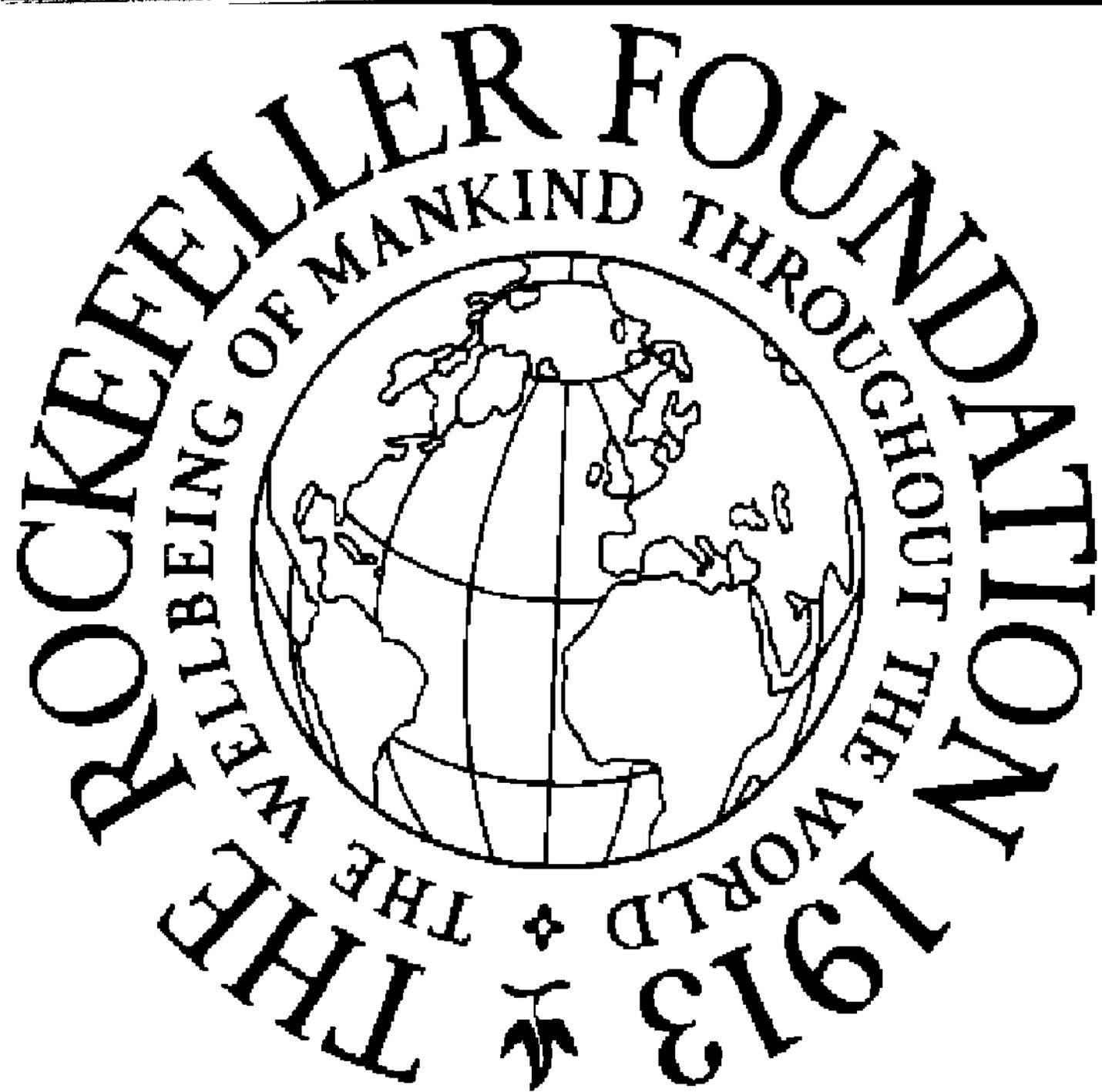
Born in Chicago on May 23, 1926, he was educated at Harvard College and at the Washington University School of Medicine from which he was graduated *cum laude*. Except during service as a medical officer in the United States Navy and as a U.S. Public Health Service Post-doctoral Fellow at the Universities of Rochester and Buffalo, Dr. Knowles has been closely identified with Massachusetts General Hospital and Harvard Medical School. In 1962, at 35, he was appointed General Director of the former and in 1969 also became Professor of Medicine at the latter. He is the author of numerous articles and four books—one of them considered a classic on pulmonary physiology, his medical specialty.

Barry Bingham (right), noted publisher and journalist, retired from the Board in June 1971, after 13 years of service during which he devoted himself especially to the humanistic dimensions of the Foundation's activities.

Thomas J. Watson, Jr. (page 160), a Trustee since 1963, resigned from the Board on June 30, 1971. Mr. Watson had served as a member of the Executive Committee, the Nominating Committee, and the Finance Committee. He was chairman of a Trustee-Officer Committee which during 1968 considered the future course of the Equal Opportunity program.



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FINANCIAL STATEMENTS

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SUMMARY

Expenditures for programs, grants and operating costs are authorized by the Trustees by means of appropriations. Such appropriations are of three types. First, grants which are announced to the recipient immediately after the Trustee appropriation has been made. Second, appropriations for grants, fellowships and scholarships subject to future release by the officers, which are reported to the recipient when the funds are released. Third, appropriations (usually approved in December) for program expenses and general administrative expenses in the following year.

GRANTS

During 1971 the Foundation announced programs and grants totaling \$32.6 million; they are listed on pages 106-150. These included \$16.4 million released by the officers from current and prior years' appropriations and \$16.2 million in new appropriations by the Trustees for programs and grants not requiring release by the officers. Funds for programs and grants were distributed among the Foundation's major areas of interest as follows (in millions of dollars):

Conquest of Hunger	8.1
University Development	6.6
Equal Opportunity for All	3.7
Population	3.6
Cultural Development	3.4
Quality of the Environment	3.3
Allied Interests	3.9
	<u>32.6</u>

APPROPRIATIONS

The total of new appropriations approved by the Trustees during 1971 was \$41.9 million (\$41.1 million after lapses and refunds). Of that total \$16.2 million was for the programs and direct grants mentioned above, \$20.1 million was for release by the officers, \$2.5 million for 1972 New York Program expenses, and \$3.1 million for 1972 general administrative costs.

PAYMENTS

Some grants are paid almost immediately upon approval by the Trustees or release by the officers; others are paid over a number of months or years, or at some future time when matched by other funds. Payments during the year totaled \$43.9 million. Of this amount, \$28 million was paid from income (net after deducting \$1.2 million of income for Federal Excise Tax) and \$15.9 million was paid from principal.

Since its founding in 1913, The Rockefeller Foundation has appropriated a total of \$1 billion 130 million, of which \$850 million was paid from income, while \$191 million was paid from principal.

The financial statements for 1971 and the opinion of Haskins & Sells, independent public accountants, are presented on the following pages.

ACCOUNTANTS' OPINION

HASKINS & SELLS

CERTIFIED PUBLIC ACCOUNTANTS

TWO BROADWAY
NEW YORK 10004

February 11, 1972

Board of Trustees,
The Rockefeller Foundation,
111 West 50th Street,
New York, New York 10020.

Dear Sirs:

We have examined the balance sheet of The Rockefeller Foundation as of December 31, 1971 and the related statements of income and appropriations, principal fund, and appropriations and payments for the year then ended, and the supplemental schedules of marketable securities held at December 31, 1971 and transactions therein 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, such financial statements and supplemental schedules present fairly the financial position of the Foundation at December 31, 1971 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, 1971

ASSETS

MARKETABLE SECURITIES—at cost or fair market value at date of gift or receipt (quoted market value, \$830,569,466)	\$387,577,635
CASH	746,374
ADVANCES AND ACCOUNTS RECEIVABLE	469,704
PROPERTY—at nominal or depreciated amount	<u>101,930</u>
TOTAL	<u>\$388,895,643</u>

FUNDS AND OBLIGATIONS

PRINCIPAL FUND	\$297,919,231
UNPAID APPROPRIATIONS	89,488,969
FEDERAL EXCISE TAX PAYABLE	1,166,450
ACCOUNTS PAYABLE	219,063
PROPERTY FUND	<u>101,930</u>
TOTAL	<u>\$388,895,643</u>

STATEMENT OF INCOME AND APPROPRIATIONS

FOR THE YEAR ENDED DECEMBER 31, 1971

INCOME RECEIVED		
Dividends		\$ 27,952,315
Interest		1,375,662
Royalties on security received by bequest		<u>111,437</u>
		29,439,414
Less investment expenses		<u>278,163</u>
Income before Federal Excise Tax		29,161,251
Federal Excise Tax		<u>1,166,450</u>
Income available for appropriations		27,994,801
 APPROPRIATIONS		
During the year	\$ 41,934,380	
Less refunds and lapses of unexpended balances	<u>849,828</u>	<u>41,084,552</u>
 EXCESS OF APPROPRIATIONS OVER INCOME		
(Charged to Principal Fund)		<u><u>\$ 13,089,751</u></u>

STATEMENT OF PRINCIPAL FUND

FOR THE YEAR ENDED DECEMBER 31, 1971

BALANCE, JANUARY 1, 1971		\$285,739,217
ADD:		
Excess of proceeds from sales of securities over ledger amount		24,842,237
Contributions received		<u>427,528</u>
		311,008,982
DEDUCT:		
Excess of appropriations over income		<u>13,089,751</u>
BALANCE, DECEMBER 31, 1971		<u><u>\$297,919,231</u></u>

APPROPRIATIONS AND PAYMENTS

FOR THE YEAR ENDED DECEMBER 31, 1971

UNPAID APPROPRIATIONS, JANUARY 1, 1971		\$ 92,289,736
APPROPRIATIONS		
During the year	\$ 41,934,380	
Less refunds and lapses of unexpended balances	<u>849,828</u>	<u>41,084,552</u>
		133,374,288
PAYMENTS ON APPROPRIATIONS		
For programs and grants	40,678,790	
Less refunds on closed appropriations	<u>36,515</u>	
	40,642,275	
For general administrative expenses	<u>3,243,044</u>	<u>43,885,319</u>
UNPAID APPROPRIATIONS, DECEMBER 31, 1971		<u><u>\$ 89,488,969</u></u>

SUMMARY OF TRANSACTIONS IN MARKETABLE SECURITIES

FOR THE YEAR ENDED DECEMBER 31, 1971

Ledger amount of securities, January 1, 1971		\$377,544,212
Purchased	\$136,291,200	
Otherwise acquired	499,900	<u>136,791,100</u>
		514,335,312
Sold	96,429,090	
Redeemed at maturity	29,802,179	
Ledger amount reduced	499,900	
Amortization of bond premiums	26,508	<u>126,757,677</u>
Ledger amount of securities, December 31, 1971		<u>\$387,577,635</u>

TRANSACTIONS IN MARKETABLE SECURITIES

FOR THE YEAR ENDED DECEMBER 31, 1971

PURCHASED:		LEDGER AMOUNT
\$ 32,500,000	U. S. Treasury Obligations (under Repurchase Agreements)	\$ 32,500,000
	U. S. Treasury Bills	
1,000,000	due October 14, 1971	979,828
1,000,000	due April 13, 1972	977,274
	The Chase Manhattan Bank Certificates of Deposit	
1,500,000	due July 12, 1972	1,500,000
1,000,000	due February 1, 1973	1,000,000
1,000,000	due February 22, 1973	1,000,000
1,000,000	due March 1, 1973	1,000,000
1,500,000	due April 6, 1973	1,500,000
3,000,000	due July 12, 1973	3,000,000
2,000,000	due August 7, 1973	2,000,000
2,500,000	due October 4, 1973	2,500,000
	First National City Bank Certificates of Deposit	
1,000,000	due April 20, 1972	1,000,000
3,000,000	due May 8, 1973	3,000,000
	Morgan Guaranty Trust Company Certificates of Deposit	
1,000,000	due November 1, 1971	1,000,000
1,000,000	due November 5, 1971	1,000,000
3,000,000	due December 7, 1971	3,000,000
2,000,000	due December 20, 1971	2,000,000
1,000,000	due April 3, 1972	1,000,000
1,000,000	due May 10, 1972	1,000,000
1,500,000	due May 15, 1972	1,500,000
1,500,000	due May 22, 1972	1,500,000
1,000,000	due July 12, 1972	1,000,000
	Commonwealth Edison Company Notes	
1,000,000	due April 13, 1971	996,576
1,000,000	due April 23, 1971	995,569
1,000,000	due May 20, 1971	995,625
1,000,000	due January 12, 1972	995,990

TRANSACTIONS IN MARKETABLE SECURITIES *continued*

FOR THE YEAR ENDED DECEMBER 31, 1971

PURCHASED: <i>concluded</i>		LEDGER AMOUNT
\$ 1,000,000	Duke Power Company Notes due March 19, 1971	\$ 999,156
1,000,000	due May 3, 1971	997,757
500,000	due May 25, 1971	497,509
	The Mountain States Telephone & Telegraph Company Notes	
1,000,000	due June 21, 1971	998,646
1,000,000	due June 28, 1971	997,698
1,000,000	due July 12, 1971	995,694
1,500,000	due January 5, 1972	1,495,260
	New England Telephone & Telegraph Company Notes	
1,000,000	due May 10, 1971	996,840
1,000,000	due May 17, 1971	995,990
	Pacific Northwest Bell Telephone Company Notes	
1,000,000	due November 15, 1971	995,042
1,000,000	due November 23, 1971	993,875
	The Pacific Telephone & Telegraph Company Notes	
1,000,000	due March 29, 1971	998,285
1,000,000	due July 23, 1971	994,167
2,300,000	W. T. Grant Company 4¾% Convertible Debentures due April 15, 1996	2,431,062
200,000	shares American Cyanamid Company	7,251,559
25,000	" American Electric Power Company (250,000 Rights were received on account of the ownership of Common Stock and exercised)	632,500
78,324	" American Telephone & Telegraph Company	3,671,711
100,000	" Avon Products, Inc.	9,134,358
125,000	" Boise Cascade Corporation	5,500,327
30,938	" Coca-Cola Company	3,356,154
25,000	" Control Data Corporation	1,382,123
22,200	" Kresge (S. S.) Company	1,303,659
4,600	" Merck & Company	451,619
50,000	" Morgan & Company (J. P.)	3,237,059
100,000	" Polaroid Corporation	10,549,099
9,100	" Sears, Roebuck & Company	775,429
65,000	" Singer Company	4,717,760
		<u>\$136,291,200</u>

OTHERWISE ACQUIRED:	LEDGER AMOUNT	
2,500 shares	Boise Cascade Corporation received as a stock dividend on 125,000 shares owned of record October 22, 1971	—
3,968 "	Columbia Broadcasting System, Inc. received as a stock dividend on 198,426 shares owned of record December 17, 1970	—
4,047 "	Columbia Broadcasting System, Inc. received as a stock dividend on 202,394 shares owned of record November 24, 1971	—
207,900 "	Firestone Tire & Rubber Company received in a stock split on 207,900 shares owned of record November 4, 1971	—

TRANSACTIONS IN MARKETABLE SECURITIES *continued*

FOR THE YEAR ENDED DECEMBER 31, 1971

OTHERWISE ACQUIRED: <i>concluded</i>		LEDGER AMOUNT
189,600	shares General Electric Company received in a stock split on 189,600 shares owned of record April 29, 1971	—
28,346	" Viacom International, Inc. common stock received as a stock distribution on 198,426 shares of Columbia Broadcasting System, Inc. at proportionate market value of the two stocks at ex-distribution date. (See contra)	<u>\$ 499,900</u>

SOLD:		PROCEEDS	LEDGER AMOUNT
\$ 32,500,000	U. S. Treasury Obligations (under Repurchase Agreements)	\$ 32,500,000	\$ 32,500,000
1,000,000	U. S. Treasury Bill due October 14, 1971	979,828	979,828
3,000,000	Export-Import Bank 6½% Participation Certificate due September 19, 1971	3,001,641	3,004,883
2,000,000	Federal National Mortgage Association 6% Participation Certificates due February 1, 1971	2,001,406	2,000,194
500,000	The Mountain States Telephone & Telegraph Company Notes due January 5, 1972	498,420	498,420
10,052	warrants American Telephone & Telegraph Company (received with company's 8¾% debentures maturing May 15, 2000, purchased by subscription in 1970)	118,340	118,340
200,000	rights American Telephone & Telegraph Company (received on account of ownership of record June 3, 1971 of 200,000 shares of stock)	50,000	50,000
140,000	shares Central Illinois Public Service Company	2,608,349	2,829,415
20,000	" Computer Sciences Corporation	162,653	565,905
225,000	" Consumers Power Company	6,642,567	9,382,482
40,650	" Corning Glass Works	8,445,147	6,599,332
25,000	" Denny's Restaurants Inc.	230,841	996,218
125,000	" Fairchild Camera & Instrument Corporation	3,878,839	8,959,099
135,191	" Ford Motor Company	8,904,865	6,294,290
85,000	" Hanna Mining Company	4,508,702	2,272,732
27,000	" Jim Walter Corporation (\$1.60 Cumulative Convertible Preferred)	1,216,654	1,035,344
11,600	" Kresge (S. S.) Company	1,017,900	625,257
30,000	" MacDermid, Inc.	1,002,433	812,530
100,000	" Public Service Electric & Gas Company	2,605,639	3,096,092
65,000	" Singer Company	4,310,988	4,717,760
506,700	" Standard Oil Company (Indiana)	30,453,688	3,593,698
88,500	" Upjohn Company	5,709,134	4,997,353
28,346	" Viacom International, Inc.	402,018	499,890
	Fractional shares	25	28
		<u>\$121,250,077</u>	<u>\$ 96,429,090</u>

SCHEDULE OF MARKETABLE SECURITIES

DECEMBER 31, 1971

FIXED INCOME SECURITIES	LEDGER AMOUNT	QUOTED MARKET VALUE
U. S. Government Obligations	\$ 3,366,337	\$ 3,479,022
U. S. Government Agency Obligations	4,002,250	4,001,563
Certificates of Deposit	23,500,000	23,500,000
Corporate Obligations	3,352,090	3,487,777
	<u>34,220,677</u>	<u>34,468,362</u>
CONVERTIBLE BONDS	2,650,441	2,391,655
OTHER INVESTMENT	862,500	862,500
PREFERRED STOCKS	4,335,047	13,695,000
COMMON STOCKS	345,508,970	779,151,949
TOTAL	<u>\$387,577,635</u>	<u>\$830,569,466</u>

FIXED INCOME SECURITIES	PAR	LEDGER AMOUNT	QUOTED MARKET VALUE
<i>U. S. Government Obligations:</i>			
<i>Bills</i>			
April 13, 1972	\$ 1,000,000	\$ 977,274	\$ 989,022
<i>Bonds</i>			
4%—February 15, 1972	1,500,000	1,436,250	1,501,875
4½%—November 15, 1973	1,000,000	952,813	988,125
		<u>3,366,337</u>	<u>3,479,022</u>
<i>U. S. Government Agency Obligations:</i>			
<i>Federal Land Banks Bonds</i>			
5.70%—February 15, 1972	1,000,000	1,000,000	1,001,563
<i>Federal National Mortgage Association Participation Certificates</i>			
5.20%—January 19, 1972	3,000,000	3,002,250	3,000,000
		<u>4,002,250</u>	<u>4,001,563</u>
<i>Certificates of Deposit:</i>			
<i>The Chase Manhattan Bank</i>			
4⅞%—July 12, 1972	1,500,000	1,500,000	1,500,000
5¼%—February 1, 1973	1,000,000	1,000,000	1,000,000
5¼%—February 22, 1973	1,000,000	1,000,000	1,000,000
5¼%—March 1, 1973	1,000,000	1,000,000	1,000,000
5¼%—April 6, 1973	1,500,000	1,500,000	1,500,000
5⅝%—July 12, 1973	3,000,000	3,000,000	3,000,000
5⅝%—August 7, 1973	2,000,000	2,000,000	2,000,000
5⅝%—October 4, 1973	2,500,000	2,500,000	2,500,000
<i>First National City Bank</i>			
4⅝%—April 20, 1972	1,000,000	1,000,000	1,000,000
5¼%—May 8, 1973	3,000,000	3,000,000	3,000,000

SCHEDULE OF MARKETABLE SECURITIES *continued*

DECEMBER 31, 1971

FIXED INCOME SECURITIES: <i>concluded</i>	PAR	LEDGER AMOUNT	QUOTED MARKET VALUE
Morgan Guaranty Trust Company			
4 $\frac{5}{8}$ %—April 3, 1972	\$ 1,000,000	\$ 1,000,000	\$ 1,000,000
5 $\frac{1}{8}$ %—May 10, 1972	1,000,000	1,000,000	1,000,000
5 $\frac{1}{8}$ %—May 15, 1972	1,500,000	1,500,000	1,500,000
5 $\frac{1}{8}$ %—May 22, 1972	1,500,000	1,500,000	1,500,000
5 $\frac{1}{8}$ %—July 12, 1972	1,000,000	1,000,000	1,000,000
		<u>23,500,000</u>	<u>23,500,000</u>

Corporate Obligations:

Notes

The Mountain States Telephone & Telegraph Company—January 5, 1972	1,000,000	996,840	999,410
Commonwealth Edison Company—January 12, 1972	1,000,000	995,990	998,583

Bonds

American Telephone & Telegraph Company 8 $\frac{3}{4}$ %—May 15, 2000	502,600	384,260	562,284
General Motors Acceptance Corporation 5%—August 15, 1977	1,000,000	975,000	927,500
		<u>3,352,090</u>	<u>3,487,777</u>

TOTAL FIXED INCOME SECURITIES

\$ 34,220,677 \$ 34,468,362

CONVERTIBLE BONDS

	PAR	LEDGER AMOUNT	QUOTED MARKET VALUE
W. T. Grant Company 4 $\frac{3}{4}$ %—April 15, 1996	2,300,000	2,428,441	2,047,000
Xerox Corporation 6%—November 1, 1995	222,000	222,000	344,655
TOTAL CONVERTIBLE BONDS		<u><u>\$ 2,650,441</u></u>	<u><u>\$ 2,391,655</u></u>

OTHER INVESTMENT

	LEDGER AMOUNT	ESTIMATED FAIR VALUE
1.725% of "Lambert Contract" covering royalties on sales of Listerine—at estimated fair value	<u><u>\$ 862,500</u></u>	<u><u>\$ 862,500</u></u>

PREFERRED STOCKS

	SHARES	LEDGER AMOUNT	QUOTED MARKET VALUE
International Telephone & Telegraph Corporation Convertible Preferred Series "K"	15,000	\$ 1,401,294	\$ 1,485,000
International Telephone & Telegraph Corporation Convertible Preferred Series "N"	165,000	2,933,753	12,210,000
TOTAL PREFERRED STOCKS		<u><u>4,335,047</u></u>	<u><u>13,695,000</u></u>

SCHEDULE OF MARKETABLE SECURITIES *concluded*

DECEMBER 31, 1971

COMMON STOCKS	SHARES	LEDGER AMOUNT	QUOTED MARKET VALUE
American Cyanamid Company	200,000	\$ 7,251,559	\$ 6,800,000
American Electric Power Company, Inc.	275,000	4,573,500	8,353,125
American Home Products Corporation	106,200	3,628,841	9,491,625
American Telephone & Telegraph Company	255,000	8,297,109	11,411,250
Armstrong Cork Company	280,000	10,232,501	12,040,000
Armstrong Rubber Company	15,000	615,320	607,500
Avon Products, Inc.	100,000	9,134,358	10,037,500
Boise Cascade Corporation	127,500	5,500,327	2,390,625
Bristol-Myers Company	150,000	9,021,569	8,756,250
Burroughs Corporation	100,000	9,845,438	15,275,000
Carrier Corporation	280,000	10,383,158	13,230,000
Coca-Cola Company	50,000	4,820,757	6,100,000
Columbia Broadcasting System, Inc.	206,441	9,498,103	9,625,312
Control Data Corporation	100,000	6,288,599	4,562,500
Diamond International Corporation	200,000	9,098,431	7,975,000
DuPont (E. I.) de Nemours and Company	53,000	10,039,968	7,685,000
Eastman Kodak Company	237,200	7,790,263	23,067,700
Firestone Tire & Rubber Company	415,800	9,673,965	11,174,625
Ford Motor Company	357,700	16,653,976	25,128,425
General Electric Company	379,200	11,673,784	23,747,400
General Motors Corporation	195,982	10,513,152	15,776,551
Hanna Mining Company	150,000	4,010,703	7,237,500
Hewlett-Packard Company	110,000	4,654,677	5,266,250
International Business Machines Corporation	104,806	10,407,686	35,267,219
International Nickel Company of Canada, Ltd.	438,250	8,527,341	14,078,781
International Paper Company	300,000	4,620,039	10,500,000
International Telephone & Telegraph Corporation	71,000	4,028,571	4,144,625
Kresge (S. S.) Company	70,400	3,794,662	7,040,000
Marathon Oil Company	424,482	3,708,384	14,326,267
Merck & Company	100,000	8,866,268	12,400,000
Minnesota Mining & Manufacturing Company	100,225	6,338,156	13,530,375
Mobil Oil Corporation	600,000	7,778,152	32,775,000
Morgan & Company (J. P.)	150,000	9,906,801	11,231,250
Polaroid Corporation	100,000	10,549,099	8,900,000
Rohr Industries, Inc.	40,000	1,077,272	655,000
Sav-A-Stop, Inc.	45,000	893,250	641,250
Sears, Roebuck & Company	84,100	6,012,979	8,620,250
Southern Company (The)	342,000	8,853,096	7,524,000
Sperry Rand Corporation	185,000	8,508,106	5,688,750
Standard Oil Company (Indiana)	1,200,000	8,510,830	83,400,000
Standard Oil Company (New Jersey)	3,000,000	14,951,594	221,250,000
Texas Instruments Inc.	100,450	10,006,815	12,593,919
U. S. Plywood-Champion Papers Inc.	280,000	10,148,658	8,505,000
Upjohn Company	88,500	4,997,353	6,438,375
Xerox Corporation	111,000	9,823,800	13,902,750
TOTAL COMMON STOCKS		<u>345,508,970</u>	<u>779,151,949</u>
TOTAL STOCKS		<u>\$349,844,017</u>	<u>\$792,846,949</u>

1971 APPROPRIATIONS AND PAYMENTS



APPROPRIATIONS AND PAYMENTS IN 1971

The first column lists all grants and programs announced in 1971. The second column lists all payments made in 1971 including payments on prior years' grants. Appropriations made in 1971 but not released during the year are shown in a summary at the end.

	GRANTS & PROGRAMS	PAYMENTS
International Cooperative Programs		
Conquest of Hunger—field staff	\$ 750,900	\$ 974,826
University Development—field staff	1,481,300	1,821,196
Arbovirus Research—field staff	136,700	254,930
Biomedical Sciences Research—field staff	148,500	178,999
Population Program—field staff	70,180	
Bellagio Study and Conference Center—field staff	41,500	46,444
Exploration of new University Development Centers	188,900	
Preparation and distribution of publications	74,160	85,231
Unallocated contingency reserve	250,000	
 ARGENTINA		
National University of Cordoba		
Research in reproductive biology	9,000	222
Fellowships and scholarships	5,584	9,316
 AUSTRALIA		
Australian National University		
Development of high-lysine rice and wheat	14,270	
Preparation of a biography of Gilbert Murray		6,500
University of New England		
Study of Chilean farmers' attitudes to risk—refund		(193)
 BAHAMAS		
Ministry of External Affairs		
Library acquisitions in international relations		2,348
 BELGIUM		
International Union for the Scientific Study of Population		
Research on population policies	30,000	15,000
 BERMUDA		
Bermuda Biological Station for Research		
New laboratory seawater system	15,000	
 BOLIVIA		
Fellowships and scholarships	884	5,570

APPROPRIATIONS AND PAYMENTS IN 1971

BRAZIL		
Cooperative program		
Belém Virus Laboratory		11,928
Rural University of the State of Minas Gerais		
Library materials		493
School of Domestic Science		2,377
University of São Paulo		
Piracicaba School of Agriculture		5,352
Special institutional grant	1,500	1,500
Fellowships and scholarships	91,340	146,065
CANADA		
McGill University		
Special institutional grant	750	750
Visiting faculty assignments in Africa, Asia, and Latin America		56,034
University of Manitoba		
Special institutional grant	1,500	1,500
University of Montreal		
Fifth General Conference of the International Association of Universities—refund		(15,000)
University of Toronto		
Special institutional grant	4,500	4,500
Visiting faculty assignments in Africa, Asia, and Latin America		103,342
University of Waterloo		
Schistosomiasis and fascioliasis studies		38,826
CEYLON		
Fellowships and scholarships	2,834	4,614
CHILE		
Catholic University of Chile		
Equipment for studies in reproductive biology	9,500	
Latin American Center of Demography		
Research on population policies	31,035	20,690
University of Chile		
Family planning program		1,250
Fellowships and scholarships	115,927	126,727

APPROPRIATIONS AND PAYMENTS IN 1971

COLOMBIA		
Bolivar College		
Equipment and supplies	1,130	806
Cooperative programs		
Cali Microbiology Laboratory	34,000	61,825
Colombian Agricultural Program		2,379
University of Valle, University Development Program Center	57,000	75,688
University of Valle, visiting faculty	45,900	63,633
Colombian Association of Faculties of Medicine		
Program support		37,600
Colombian Institute of Agriculture (ICA)		
Agricultural Engineering Department, equipment		1,156
Animal husbandry and animal health programs	66,848	59,422
Carimagua experiment station, equipment	8,000	6,417
Consultations with an animal disease specialist		2,419
General support		65,944
Graduate teaching and research	29,238	28,927
Library development		2,328
National Center of Communications, equipment		26,600
Program in plant pathology		7,671
Seed storage research	7,000	1,638
Special institutional grant	5,250	5,250
Staff member's conference expenses		1,231
Staff member's course in agricultural planning	1,550	1,516
Teaching, research, and extension programs	32,169	46,496
Vehicles for staff car pool		10,000
International Center of Tropical Agriculture		
General support	740,000	697,868
Library materials		30,000
Presentation of findings at International Congress of Nutrition in Czechoslovakia		1,542
Toward construction costs of headquarters buildings	220,418	220,238
Turipana Station, equipment		35,229
Vehicles for staff car pool		80,000
Veterinary Medicine Laboratory, equipment		12,427
National Institute of Nutrition		
Nutrition study using opaque-2 corn		5,232
National University of Colombia		
Department of Irrigation and Drainage, equipment		29,512
University of Antioquia		
School of Library Science—refund		(2,131)

APPROPRIATIONS AND PAYMENTS IN 1971

University of Valle

Central Administration, equipment		40,281
Department of Biology, equipment		224
Department of Chemistry, training	2,500	2,304
Division of Engineering, support	22,696	111,054
Division of Engineering, visiting professorship		851
Division of Health Sciences, support	217,438	233,881
Division of Humanities, support	31,210	14,551
Division of Sciences, support	79,315	105,083
Division of Social and Economic Sciences, faculty development	40,040	20,020
Equipment for chemistry research		1,948
Faculty of Economics, equipment	2,500	2,295
General support		1,921
Intensive English Program		2,100
Library acquisitions	14,400	14,400
Microfilming of regional archives	4,462	1,031
Population studies		42,070
Program in comprehensive health services		14,810
Research in grains and other products in cooperation with ICA and Palmira experiment station		11,576
Fellowships, scholarships, and special awards	432,659	382,205

COSTA RICA

Inter-American Institute of Agricultural Sciences

Latin American Association of Plant Science, Secretariat support		2,500
Library improvement		9,000
Training for agricultural librarians—refund		(553)
Fellowships and scholarships		734

ECUADOR

Cooperative program

Ecuador Agricultural Project	16,000	19,958
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National Agricultural Research Institute

Experiment stations and research and training programs		58,209
Laboratory equipment		9,536
Programs in crop and animal improvement	101,000	68,999

Fellowships and scholarships	10,531	34,022
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EL SALVADOR

Foundation for the Development of Cooperatives

To increase agricultural productivity		35,640
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Fellowships and scholarships	4,700	
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APPROPRIATIONS AND PAYMENTS IN 1971

ETHIOPIA		
Fellowships and scholarships	20,788	24,918
GHANA		
Association of African Universities		
Participation in the Association for the Advancement of Agricultural Sciences in Africa	9,000	9,000
Fellowships and scholarships	169	1,058
GUATEMALA		
Fellowships and scholarships	3,179	13,123
GUYANA		
Fellowships and scholarships	3,554	2,422
HONDURAS		
Pan American School of Agriculture		
Evaluation project	12,000	12,000
Fellowships and scholarships		307
INDIA		
American International School		
General support	750	750
Cooperative program		
Indian Agricultural Program	210,300	293,006
Indian Agricultural Research Institute		
General support		14,658
Indian Council of Medical Research		
Equipment		5,524
Virus Research Centre, equipment		13,064
India International Centre		
Seminars—refund		(1,349)
University of Delhi		
Department of Botany		967
Library training—refund		(228)
Fellowships and scholarships	76,984	78,413
INDONESIA		
Cooperative program		
Visiting faculty (Gadja Mada University)	30,300	

APPROPRIATIONS AND PAYMENTS IN 1971

University of Indonesia		
Family planning teaching		13,014
 ITALY		
Bellagio Study and Conference Center		
Activities of the Center	215,600	276,766
Conference support	17,452	12,074
 JAMAICA		
University of the West Indies		
Schistosomiasis research	8,500	8,500
 JAPAN		
Kihara Institute for Biological Research		
Wheat and rice research		9,180
 KENYA		
Cooperative programs		
University Development Program Center (Universities in East Africa)	62,200	74,283
Visiting faculty (University of Nairobi)	159,200	211,820
East African Agriculture and Forestry Research Organization		
Doctoral research—refund		(525)
General support	1,680	
Research on supplementary feeding techniques	4,200	4,200
Sorghum research	30,000	30,000
Ministry of Agriculture and Animal Husbandry		
Library equipment		4,201
Plant Breeding Station, support—refund		(4,807)
Organization of an animal disease laboratory	25,000	1,669
University of Nairobi		
Assistantships in economics	12,860	6,430
Department of Economics, lectureship	2,700	2,700
Department of Government—refund		(1,019)
Department of Government, assistantship	1,915	1,915
Faculty of Veterinary Science, clinical studies	85,500	42,750
Faculty of Veterinary Science, fascioliasis research		2,537
Institute of African Studies, research	10,000	10,000
Institute for Development Studies, activities of the Institute	86,800	44,965
Reading skills project—refund		(2,386)
Research on East Coast fever and trypanosomiasis		3,500
Research on Kenyan political development—refund		(3,029)

APPROPRIATIONS AND PAYMENTS IN 1971

KENYA (cont'd)		
University of Nairobi (cont'd)		
Research on pneumonia of cattle, sheep, and goats	9,300	4,650
Staff development	15,200	14,994
Study of geographical research techniques—refund		(1,354)
Study of pathogenesis of East Coast fever	11,000	10,568
<i>The Eastern Africa Economic Review</i> —refund		(389)
Training in public administration—refund		(182)
Fellowships and scholarships	129,872	108,208
 KOREA		
Ewha Womans University		
Teaching in family planning	15,000	7,500
Fellowships and scholarships	1,284	8,090
 LEBANON		
American University of Beirut		
Equipment for a neuropathology laboratory		309
Strengthening the academic program		230,084
 MALAWI		
Fellowships and scholarships	7,834	7,472
 MEXICO		
Colegio de México		
Demographic research	120,000	35,200
 International Maize and Wheat Improvement Center (CIMMYT)		
Cafeteria and guest house	86,000	86,000
Central American Food Crop Improvement Program		15,000
Cooperative regional wheat program in the Near East and North Africa	80,650	61,300
General services	143,572	181,372
Genetic improvement of maize and wheat	2,500	2,500
Greenhouses at headquarters	80,000	25,821
General support	750,000	740,475
Headquarters facilities	544,163	553,058
Inauguration of headquarters	24,162	
International Potato Improvement Project		80,000
Investigation of maize plant factors	3,000	13,000
Maize program in Kenya—refund		(705)
Potato program in West Pakistan	43,800	43,800
Protein quality laboratory	16,300	37,256

APPROPRIATIONS AND PAYMENTS IN 1971

Puebla Project, general support	130,300	130,300
Puebla Project, training	15,000	15,000
Renovation of some storage facilities	31,640	31,640
Scholarship program		30,000
Seed storage building	7,075	190,530
Spring-Winter Wheat Breeding Project	26,100	39,000
Substation facilities		69,221
Visits to CIMMYT by scientists and administrators	15,000	15,000
Latin American Association of Higher Agricultural Education		
Conference expenses—refund		(2,395)
National Institute of Agricultural Research		
Potato research and training program—refund		(190)
National School of Agriculture		
Graduate program	70,000	70,000
Research in cooperation with International Potato Project	28,150	15,000
Special institutional grant	17,250	17,250
Technological Institute of Monterrey		
Graduate studies		15,976
Fellowships and scholarships	105,419	100,268
NICARAGUA		
Fellowships and scholarships	5,834	6,810
NIGERIA		
Ahmadu Bello University		
Cereal research		28,379
Conference expenses—refund		(2,928)
Association for the Advancement of Agricultural Sciences in Africa		
First international conference	15,000	15,000
Cooperative programs		
University Development Program Center (University of Ibadan)	33,200	32,604
Project support for staff assigned to Ahmadu Bello University		2,925
Visiting faculty (University of Ibadan)	32,700	5,774
International Institute of Tropical Agriculture		
General support	750,000	534,450
International School		
General support	1,220	215

APPROPRIATIONS AND PAYMENTS IN 1971

NIGERIA (cont'd)

University of Ibadan

Acting Director, Computing Centre	8,525	8,525
Arbovirus research	109,265	116,528
Audiovisual teaching equipment		11,100
Chief Accountant—refund		(5,912)
Conference on Regional Planning	15,000	15,000
Crop improvement program	10,750	10,750
Department of Agricultural Economics and Extension, study awards	4,620	4,620
Department of Animal Science and Agricultural Biology, research	5,400	
Department of Chemistry, equipment		12,217
Departments of Geography, Economics, and Sociology, research	41,586	43,643
Department of History, visiting professorship	2,500	2,500
Endocrinology study in the United States		2,250
Faculty of Agriculture, visiting professorship	53,331	(157)
Faculty of Agriculture, Forestry, and Veterinary Science, training	19,000	19,000
Faculty of Social Sciences, training	16,800	16,800
Fellowship in economics	5,404	5,404
Lectureships—refund		(8,307)
Library materials—refund		(202)
Medical training posts		37,602
Nutrition center—refund		(2,097)
Registrar's Office, development	2,145	2,145
Research in histochemistry		936
Research in legume entomology	11,000	11,000
Research on employment of university graduates	21,152	21,152
Research on family planning	50,000	33,400
Research on hemoglobins		889
Rural water supply project at Igbo-Ora		3,053
Second Conference of Deans of Agriculture in Sub-Saharan Africa	15,000	15,000
Special field operations	3,000	2,523
Special institutional grant	1,500	1,500
Study of Nigerian legal systems—refund		(1,478)
Study of trypanosomiasis in animals	14,500	
Fellowships and scholarships	397,281	309,765

NORWAY

Christian Michelsen Institute

Research on the East African economy		9,200
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PAKISTAN

Fellowships and scholarships	3,284	9,161
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PARAGUAY

Fellowships and scholarships	434	5,241
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APPROPRIATIONS AND PAYMENTS IN 1971

PERU

Agrarian University

Research and teaching in agricultural economics
and rural sociology 32,803

Fellowships and scholarships 66,287 101,024

PHILIPPINES

Children's Medical Center

Family planning program 15,000 15,000

Cooperative programs

University Development Program Center (University of the Philippines) 3,800 5,185

Visiting faculty (University of the Philippines)—refund (404)

International Rice Research Institute

Improvement of productivity of marginal rice farmers 42,350 42,350

Research on upland rice 10,000 10,000

Research and training on cropping systems 25,322

General support 750,000 742,195

University of the Philippines

Conference—refund (6,133)

Corn and sorghum research 15,000 17,637

Department of Anatomy, equipment—refund (239)

Hostel and training center for the College of Agriculture 2,510

Rural community health teaching service 3,491

Scholarship, research, and library support 40,000 20,000

Special institutional grant 3,000 3,000

Fellowships and scholarships 236,314 221,984

ST. LUCIA

Cooperative program

Schistosomiasis research and control 148,800 155,836

Ministry of Education and Health

Training—refund (472)

SUDAN

Fellowships and scholarships 6,999 9,443

SWITZERLAND

Geneva Graduate Institute of International Studies

Training and research in international organization and relationships 13,758

Training for students from Africa, Asia, and Latin America 100,000 12,500

APPROPRIATIONS AND PAYMENTS IN 1971

TAIWAN

Joint Commission on Rural Reconstruction

Corn mildew study—refund		(1,160)
Fish culture research	75,000	48,368
Nutrition study—refund		(776)

Fellowships and scholarships	404	5,980
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TANZANIA

Cooperative program

Visiting faculty (University of Dar es Salaam)	21,300	69,920
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University of Dar es Salaam

Department of Political Science, visiting appointment	15,800	15,800
Departments of Political Science and History, development	16,850	8,425
Research and teaching in economics	48,000	37,000
Research and teaching in geography	28,280	14,140
Research fellowship—refund		(113)
Teaching materials on East African society	4,000	3,447
Teaching-through-research programs	14,000	14,000

Fellowships and scholarships	131,430	141,490
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THAILAND

Cooperative programs

Inter-Asian Corn Program	38,280	38,525
Rice and corn-sorghum program		17,029
University Development Program Center (Universities in Bangkok)	158,200	196,619
Visiting faculty (Universities in Bangkok)	52,160	89,190

International School

General support	1,200	
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Kasetsart University

Consultations and travel	5,000	5,000
Experiment station development		22,742
Farm Suwan training facility		11,193
Graduate assistantships	17,200	17,200
Research leadership positions	12,000	6,000
Rice and corn-sorghum program	118,000	74,088

Local Consulting Committee

Consultation, training in nutritional sciences		400
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APPROPRIATIONS AND PAYMENTS IN 1971

Mahidol University		
Applied nutrition research	12,000	5,523
Appointment of a laboratory director—refund		(297)
Community health program		83,610
Development of full-time faculty system in Thai universities	2,500	
Faculty of Medical Sciences, support	12,000	45,289
Faculty of Science, equipment	130,000	204,434
Preparation of biochemistry textbook in Thai	9,000	9,000
Ramathibodi Faculty of Medicine, teaching materials		773
Research on malnutrition and resistance to infection	10,000	3,475
Research on reproductive biology	14,800	2,438
Scholarships	10,000	(6,000)
Special institutional grant	1,500	1,500
Study of nutritional status and mental development in Thai children		2,493
Surgery training at the Ramathibodi Faculty of Medicine		8,183
Symposium on bladder stone disease	6,700	6,706
National Economic Development Board		
Research on population policy	8,778	8,778
Social Science Association of Thailand		
Publication of textbooks—refund		(7,818)
Thammasat University		
Faculty of Economics, scholarship	7,250	7,250
Research in Asian drama	6,587	6,587
Research on economics in Thailand	1,945	5,345
Research on the efficiency of manpower in Thailand	1,500	1,500
Research on tourism—refund		(985)
Fellowships and scholarships	489,871	472,899
TRINIDAD		
Fellowships and scholarships	469	6,696
TURKEY		
Cooperative program		
Wheat improvement project in the Middle East	97,400	101,937
Fellowships and scholarships	40,441	48,199
UGANDA		
Cooperative program		
Visiting faculty (Makerere University)	76,500	119,653

APPROPRIATIONS AND PAYMENTS IN 1971

UGANDA (cont'd)

Makerere University

Conference of deans of African university Faculties of Agriculture		387
Department of Political Science and Public Administration, research	2,279	2,279
Department of Sociology, training for a lecturer	6,401	6,401
Exchange program in history with the University of Ibadan	1,122	1,122
Faculty of Agriculture, development and research	90,000	68,737
Faculty of Social Sciences, development and research	45,200	22,600
Institute of Social Research, fellowship	9,500	9,500
Readership in comparative economic systems	11,700	11,700
Research on economic development problems of East Africa	10,831	10,831
Research in geography	2,605	2,685
Research, teaching, and graduate studies in political science	40,600	20,300
Social Science Council of Universities of East Africa	16,058	16,058
Fellowships and scholarships	161,431	133,284

UNITED ARAB REPUBLIC

Fellowships and scholarships	10,816	8,303
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UNITED KINGDOM

England

Ditchley Foundation

Conferences on international problems		15,000
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London School of Economics and Political Science

Demographic training		8,073
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University of Cambridge

Animal Research Station	2,000	2,000
International survey of crime control	15,000	
Special institutional grant	4,500	4,500

University of London

Special institutional grant	6,750	6,750
Teaching materials on West African politics		4,792

University of Sussex

Assignment of scholars to universities abroad		24,670
British Committee on the Theory of International Politics		2,419
Institution for the Study of International Organisation	75,000	
Preparation of a volume on states-systems	12,500	
Special institutional grant	3,000	3,000

University of Warwick

Special institutional grant	3,000	3,000
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Victoria University of Manchester

Special institutional grant	1,500	1,500
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APPROPRIATIONS AND PAYMENTS IN 1971

<i>Scotland</i>		
University of Edinburgh		
Special institutional grant	3,000	3,000
University of Glasgow		
Special institutional grant	3,000	3,000
UNITED NATIONS		
Food and Agriculture Organization, Rome, Italy		
Training of Middle Eastern wheat specialists	100,000	29,092
UNITED STATES		
<i>Alabama</i>		
Alabama Council for Voluntary Family Planning		
State-wide family planning services	10,000	10,000
<i>Alaska</i>		
University of Alaska		
Educational television development—refund		(561)
<i>Arizona</i>		
Arizona State University		
Internships in university administration		29,000
Research on the involvement of parents in the pre-school education of children, particularly in minority groups	15,000	
Navajo Community College		
Salary of Director of Development	15,000	15,000
University of Arizona		
Industrial gases detoxification		52,664
Research on agricultural systems and crop yields		172,100
<i>California</i>		
Bay Area Educational Television Association		
Creative training programs of the National Center for Experiments in Television	300,000	100,000
Berkeley Unified School District		
Internship for a school administrator	34,000	34,000
California Institute of Technology		
Special institutional grant	1,500	1,500
California State College at Los Angeles		
Community Relations Office		13,102
Cooperative program with Locke High School	107,730	76,884
Center Theatre Group of Los Angeles		
Programs of the Mark Taper Forum		125,000

APPROPRIATIONS AND PAYMENTS IN 1971

UNITED STATES (cont'd)		
Chula Vista City School District		
Internship for a school administrator	32,900	32,900
Claremont Graduate School		
Special institutional grant	3,000	3,000
Cooperative program		
Research in virology at Berkeley		6,911
Los Angeles City Unified School District		
Curriculum development	25,000	
Oakland Unified School District		
Integrated school program	175,000	87,357
Occidental College		
Discovery and support of talented minority-group students		120,000
Rand Corporation		
Environmental quality research	105,000	30,000
Research on economic factors influencing family size	250,000	104,075
Salk Institute for Biological Studies		
Research in reproductive biology		76,000
San Diego City Schools		
Internship for a school administrator	60,900	60,900
Programs in community education	100,000	100,000
San Francisco Conservatory of Music		
Awards to talented students		28,035
San Francisco Unified School District		
Internship for a school administrator	31,200	31,200
Workshops for minority-group school administrators	15,000	15,000
Stanford University		
Graduate program in Afro-American studies		47,000
Kenyan doctoral candidate—refund		(5,128)
Planning community health services in Thailand	14,500	14,500
Special institutional grant	6,750	6,750
University of California		
<i>Berkeley</i>		
Exchange program with Makerere University—refund		(805)
Exhibition of religious art	14,300	14,300
Research on Ghana's family planning policy	9,798	9,798
Research on insect pheromones	25,000	18,382
Research on pesticides		50,000
Special institutional grant	60,750	60,750

APPROPRIATIONS AND PAYMENTS IN 1971

<i>Davis</i>		
Assignment of scholars to universities abroad		93,365
Community development	2,220	2,220
Research on rat control	7,000	7,000
Research and training programs in environmental studies		60,160
Study of plant resistance to insects	25,400	25,400
<i>Los Angeles</i>		
Educational opportunities for Mexican-American students		37,722
Graduate Dance Center		12,000
<i>Riverside</i>		
Project in wheat production		12,500
Research on insect pheromones	25,000	50,000
Research on pesticides	49,780	49,780
<i>San Diego</i>		
Center for Music Experiment and Related Research	400,000	
Training and research in reproductive biology		240,467
University of Southern California		
Special institutional grant	3,000	3,000
Study of resource sharing with other universities	25,000	25,000
Training for music critics		99,325
West Coast branch of the Congress of Strings		30,000
Urban Affairs Institute		
Precollege leadership development program		16,846
Watts Labor Community Action Committee		
Center for vocational education at Saugus	90,975	90,975
<i>Colorado</i>		
Colorado State University		
Research in reproductive biology	19,000	
Study of mercury content of the environment	25,000	
Special institutional grant	3,750	3,750
Music Associates of Aspen		
Advanced teacher training		30,000
University of Colorado		
Cooperative program with the Autonomous University of Guadalajara	15,000	5,000
Study of probable effects of 1976 Winter Olympics on the environment	10,440	10,440
University of Denver		
Assignment of social science scholars to universities abroad		15,592
Professional program in theatre		130,000

APPROPRIATIONS AND PAYMENTS IN 1971

UNITED STATES (cont'd)

Connecticut

Connecticut College

Creation of TV essays on the nature of man		15,000
Summer program for talented disadvantaged high school students	15,000	
Summer program for talented high school graduates		14,242

Eugene O'Neill Memorial Theater Center

National Theater Institute		130,000
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Revitalization Corps

Tutorial training programs	.159,500	49,230
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Wesleyan University

Eugene O'Neill Memorial Theater Center Program—refund		(1,374)
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Yale Arbovirus Research Unit

Research in reproductive biology	6,000	
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Yale University

Advanced training program for African students at the Law School		21,482
American cultural heritage projects	16,800	16,800
Assignment of scholars to universities abroad		67,977
Black studies and community development programs	50,000	165,000
Computer analysis of data from Belém Virus Laboratory	13,421	
Facilities for reproductive biology and family planning programs		862,500
Research on relationships between economic development and population growth		200,000
School of Drama	225,000	100,000
Special institutional grant	5,250	5,250
Training program in family planning		9,978

District of Columbia

**Agricultural Research Service of the United States
Department of Agriculture**

Pulse seed increase program	15,000	15,000
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American Association for the Advancement of Science

Annual meeting expenses		5,000
Study of television as a means of enhancing public understanding of science	15,000	

American Educational Theatre Association

Unified auditions project	25,000	24,330
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American Historical Association

Promotion of the proper use of films in teaching and research		8,490
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American University

Scholarships to National Youth Orchestra	20,000	20,000
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APPROPRIATIONS AND PAYMENTS IN 1971

Americans for Indian Opportunity		
American Indian Theatre Ensemble	25,000	
Association of American Medical Colleges		
Conference in Uganda on family health	2,500	
Board of Education of the District of Columbia		
Summer course in urban problems for secondary school students		23,000
Brookings Institution		
Foreign policy studies program		189,914
Study of employment and labor in Latin America	9,500	9,500
Education for Involvement Corporation		
Summer program	15,000	15,000
George Washington University		
Special institutional grant	750	750
Institute for the Study of Health and Society		
Developing its program	25,000	25,000
Lawyers' Committee for Civil Rights Under Law		
To assist implementation of the Decentralization Law of 1969 in New York City schools	15,000	
League of Women Voters' Education Fund		
Establishment of a unified management system		25,000
National Academy of Sciences		
Board of Medicine		1,186
Agricultural Board		28,270
National Association of State Universities and Land-Grant Colleges		
Conference expenses—refund		(342)
National Urban Coalition		
National and local programs	100,000	100,000
Overseas Development Council		
Research and education	125,000	125,000
Pan American Health Organization		
Population-nutrition studies in the Caribbean area		82,806
People-to-People Health Foundation		
Project HOPE health programs in Laredo, Texas		72,700
Population Reference Bureau		
Latin American educational program		10,000

APPROPRIATIONS AND PAYMENTS IN 1971

UNITED STATES (cont'd)

Public Schools of the District of Columbia

Internship program	305,000	5,000
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Resources for the Future

Research on management of residuals	600,000	268,515
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Social Development Corporation

Development of a strategy for ameliorating unemployment resulting from tobacco farm mechanization	15,000	
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Student Advisory Committee on International Affairs

Dialogue program	15,000	5,000
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U.S. Department of Commerce

White House Conference on the Industrial World Ahead	15,000	15,000
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Washington Drama Society

Experimental workshops	10,000	
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Florida

Economic Opportunity Program

Management Internship Program—refund		(13,081)
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Florida State University

Playwright in residence	10,000	
Research on economics of increasing grain production	15,000	15,000

University of Florida

Preparation of black students for graduate study in agriculture	184,700	86,010
Research on aquatic vegetation	25,000	25,000
Research on south Florida ecosystem	15,000	
Special institutional grant	6,000	6,000

University of Miami

Management Internship Program		51,492
Special institutional grant	1,500	1,500

Georgia

Atlanta University Center Corporation

Examination of possible institutional changes at the Center	3,500	3,500
Support of the post of executive secretary		20,000

Emory University

Student assistance program		78,467
Teaching in family planning	12,000	4,000

Mercer University

Discovery and support of talented students		107,500
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APPROPRIATIONS AND PAYMENTS IN 1971

Morehouse College		
Preparation of the first performance of the folk-opera <i>Treemonisha</i>	25,000	25,000
Southeastern Academy of Theatre and Music		
Development of its theatre program	60,000	30,000
Southern Regional Council		
General support		25,000
University System of Georgia		
Job training and home management courses for girls	15,000	15,000
Hawaii		
University of Hawaii		
Assignment of scholars to universities abroad		69,892
Rice-blight studies	2,500	2,500
Special institutional grant	2,250	2,250
Illinois		
American Bar Foundation		
Study of Tax Reform Act of 1969	20,000	5,000
Art Institute of Chicago		
Goodman Theatre and School of Drama		28,000
Better Boys Foundation		
Program for preadolescents and their families	100,000	50,000
Chicago Urban League		
West Side projects		50,000
Community Consolidated School District No. 65, Cook County		
Internship for a school administrator	1,600	
Community Renewal Society		
Leadership training program		57,739
Training program for journalists specializing in urban affairs	15,000	
Ecumenical Institute		
Training community leaders	15,000	15,000
Industrial Areas Foundation		
Training community organizers		75,000
National Guild of Community Music Schools		
Operation of executive office	15,000	15,000

APPROPRIATIONS AND PAYMENTS IN 1971

UNITED STATES (cont'd)

Northwestern University

Collaboration with departments of geography at African institutions		12,200
Fellowship operations	150,000	
Research in reproductive biology	445,000	
Special institutional grant	4,500	4,500
Visiting lectureship at the University of Ibadan	12,866	12,866

University of Chicago

James Madison papers -refund		(688)
Research on relationships between poverty and behavior		87,187
Research position in reproductive biology	155,000	75,000
Special institutional grant	9,000	9,000
Study of the economic factors influencing population growth		9,464

University of Illinois

Cereal crops breeding project	25,000	25,000
Research on pesticides	50,000	45,591
Sorghum germplasm project		8,795
Special institutional grant	18,000	18,000
Studies of nitrogen in the pollution of waterways	600,000	

Indiana

Ball State University

Community use of school facilities		45,000
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Indiana University

Special institutional grant	3,000	3,000
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Indiana University Foundation

Study of repertoires of American symphony orchestras		4,000
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Indianapolis Public Schools

Internship for a school administrator	30,100	30,100
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Purdue University

Special institutional grant	21,750	21,750
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University of Notre Dame

Assignment of scholars to universities abroad		93,718
Seminar expenses—refund		(174)

Iowa

Iowa State University

Maize and sorghum project	15,000	15,000
Research on removing nonferrous metals from scrap steel	15,000	
Special institutional grant	20,250	20,250

APPROPRIATIONS AND PAYMENTS IN 1971

University of Iowa		
Assignment of scholars to universities abroad		40,000
Center for the New Performing Arts		172,500
Research on the Nigerian market		3,500
Visiting fellowship at the University of Nairobi	21,437	11,130
Kansas		
Kansas State University		
Special institutional grant	1,500	1,500
Kentucky		
Appalachian Leaders and Community Outreach		
Involvement of local college students in the community	110,000	110,000
Berea College		
Puppetry Caravan for Appalachia	11,800	11,800
Louisiana		
Free Southern Theater		
Ensemble and Drama Workshop	35,000	35,000
Louisiana State University		
Single-cell proteins study—refund		(830)
Special institutional grant	7,500	7,500
Repertory Theatre		
Experimentation in musical theatre		12,000
Tulane University		
Family planning program		267,000
Student assistance program		36,214
Special institutional grant	750	750
Maine		
Bowdoin College		
Recruitment and assistance of talented students		26,400
Maryland		
Baltimore City Public Schools		
Internships for school administrators		5,493
On-the-job training for high school seniors		169,000
Training program for school administrators		120,000
Center Stage Associates		
Children's theatre—refund		(126)
Johns Hopkins University		
Graduate training in international relations		49,795
Monograph on rat ecology—refund		(391)

APPROPRIATIONS AND PAYMENTS IN 1971

UNITED STATES (cont'd)

Johns Hopkins University (cont'd)

Population studies	40,000	
Research in health care		183,503
Research on population policies	8,710	2,177
Research on the psychological factors associated with therapeutic termination of pregnancy	6,000	
Research on sterilization techniques	10,500	10,500
Schistosomiasis research	15,000	(165)
Seminars for young diplomats		41,714
Special institutional grant	8,250	8,250

Peabody Institute of the City of Baltimore

Awards to talented students		56,666
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Universal Christian Church

Workshops in performing arts in Pipestem, West Virginia	14,200	14,200
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Massachusetts

Berkshire Theatre Festival

Theatre programs in New England	50,000	50,000
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Boston University

Early childhood language training	15,000	10,000
Experimental theatre program	24,000	
Special institutional grant	1,500	1,500

Brandeis University

Special institutional grant	1,500	1,500
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Clark University

Preparation for publication of research materials in geography accumulated at the University of Dar es Salaam	4,887	4,887
Special institutional grant	1,500	1,500

Elma Lewis School of Fine Arts

Dance programs		70,000
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Harvard University

Center for population studies		75,000
Colloquium on family planning	2,300	2,300
Educational models relating human fertility and fertility control	14,500	
Environmental studies in five New Hampshire towns	15,000	15,000
Harvard Community Health Plan		25,000
Health careers summer program for minority-group students		50,000
Health planning systems at the University of Valle	15,000	
International legal studies and advanced training for Africans		10,541

APPROPRIATIONS AND PAYMENTS IN 1971

Laboratory of Human Reproduction and Reproductive Biology		72,750
Programs in community health	750,000	478,126
Research on insect control		125,000
Research on racial attitudes in the United States		67,320
Schistosomiasis research	25,000	25,000
Special institutional grant	9,000	9,000
Training program for potential leaders in education		20,000
Massachusetts Institute of Technology		
Community Fellows: to work on civic problems under the guidance of MIT staff	400,000	150,000
Special institutional grant	9,750	9,750
New England Conservatory of Music		
Awards to talented students		67,000
New England Hospital		
Health careers training for disadvantaged persons		450,000
Northeastern University		
Cooperative program with Opera Company of Boston	24,500	49,000
Radcliffe College		
Post-doctoral fellowship program	25,000	
Student Competitions in Relevant Engineering		
Urban Vehicle Design Competition	20,000	
University of Massachusetts		
International symposium on river ecology	5,000	5,000
WGBH Educational Foundation		
Exploration of the history of the American people		100,000
Williams College		
Assignment of scholars to universities abroad		78,150
Center for Environmental Studies		47,820
Woods Hole Oceanographic Institution		
Tertiary sewage treatment and aquaculture system	150,000	
Michigan		
Board of Education of the School District of the City of Detroit		
Guidance counseling for high school students		81,449
Internship for a school administrator	2,500	34,900
Research on the disparity between schools		90,000
Detroit Public Schools		
Internships for school administrators	33,300	98,300

APPROPRIATIONS AND PAYMENTS IN 1971

UNITED STATES (cont'd)

Higher Education Opportunities Committee

Student counseling and pre-college assistance in inner-city schools 20,000

Lansing School District

Internship for a school administrator 35,000 35,000

Merrill-Palmer Institute

Urban family programs 15,000 10,000

Michigan State University

Internships in university administration 15,000 45,000

Research on the economics of smallholder dairying in Tanzania 4,860 4,860

Special institutional grant 16,500 16,500

Study of nutritional development in Nigeria 14,850 14,850

Monroe County Community College

Training of environmental control technicians 20,350

University of Michigan

Assignment of scholars to universities abroad 200,000 31,050

Contemporary Performance Project of the School of Music 19,950

Medical malacology program 175,000

Programs in environmental quality 220,000

Special institutional grant 6,000 6,000

Wayne State University

Special institutional grant 1,500 1,500

Minnesota

Carleton College

Discovery and support of talented students 75,040

Minneapolis Public Schools, Special School District No. 1

Internship for a school administrator 1,100 1,100

Use of schools as community centers 4,200 9,925

Minneapolis Society of Fine Arts

Children's Theatre Company 75,847

St. Olaf College

Higher education program for American Indians 15,000

University of Minnesota

Minneapolis

Advanced work in theatre 65,750

Assignment of scholars to universities abroad 121,032

Research on small-farming in Japan 12,200 500

Special institutional grant 9,750 9,750

Summer program for potential graduate students - refund (740)

APPROPRIATIONS AND PAYMENTS IN 1971

<i>St. Paul</i>		
Research in applied crop physiology and breeding of small grains	15,000	
Research on frost resistance in basic food crops		22,907
<i>Mississippi</i>		
Jackson State College		
Film study of traditions of the Mississippi Delta	7,068	
Mississippi State University		
Study of plant resistance to insects		42,060
University of Mississippi		
<i>Jackson</i>		
Family planning programs	60,000	60,000
<i>Oxford</i>		
Family planning program—refund		(19,833)
<i>Missouri</i>		
Central Missouri State College		
Environmental study	10,924	
St. Louis Public Schools		
Projects of Superintendent's Task Force	15,000	15,000
Saint Louis University		
Development of the Anemia and Malnutrition Research Center, Chiang Mai, Thailand	295,500	217,249
University of Missouri		
Special institutional grant	3,000	3,000
Washington University		
Special institutional grant	2,250	2,250
Work-study program for high-school graduates		95,000
<i>Nebraska</i>		
University of Nebraska		
Research on modification of tropical corn germplasm		47,770
Sorghum research	300,000	74,500
Special institutional grant	6,000	6,000
Visits to rice and sorghum centers—refund		(509)
<i>New Hampshire</i>		
American Universities Field Staff		
Study of contemporary youth movements in the western world	13,500	
Dartmouth College		
Preparing students for admission to college on scholarships		29,287

APPROPRIATIONS AND PAYMENTS IN 1971

UNITED STATES *(cont'd)*

Edward MacDowell Association

Renovation of MacDowell Colony facilities	25,000	25,000
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New Jersey

Center for Modern Dance Education

Resident professional companies	14,500	14,500
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National Council on Crime and Delinquency

Course materials for training of correctional administrators	25,000	
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Princeton University

Afro-American studies program		13,328
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Assignment of scholars to universities abroad		32,754
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Community work program for University students	57,600	
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Humanistic studies in engineering		15,000
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Interdisciplinary research in ecology		7,254
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Population research study	24,388	24,388
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Special institutional grant	5,250	5,250
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Rutgers, the State University

Research on early American solo songs—refund		(116)
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Special institutional grant	1,500	1,500
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New Mexico

Project Necessities

Support	7,500	7,500
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University of New Mexico

Study of Hispanic folk music in the Southwest		10,000
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New York

Actors Studio

Playwright in residence	9,500	
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Adelphi University

Special institutional grant	1,500	1,500
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Administration and Management Research Association

Environmental intern program	15,000	15,000
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Agnes de Mille Dance Theatre

American heritage project	25,000	
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Agribusiness Council

Operating expenses	25,000	50,000
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American Place Theatre

Playwright in residence	9,500	
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Writers development program		125,000
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APPROPRIATIONS AND PAYMENTS IN 1971

ASPIRA		
Guidance program for Spanish-speaking students and their parents	85,000	67,311
Association of the Bar of the City of New York Fund		
Study of the decentralization of government in New York City	15,000	15,000
Ballet Theatre Foundation		
Artistic staff		75,000
Bank Street College of Education		
Division of field action		90,517
Boyce Thompson Institute for Plant Research		
Research on plant life and ecosystem of the Hudson River Basin	401,000	145,600
Brooklyn College of the City University of New York		
Training for theatre technicians	115,000	
Brooklyn Institute of Arts and Sciences		
Resident performing companies		120,000
Business Committee for the Arts		
Development of support for the arts		50,000
Carnegie Endowment for International Peace		
Training program for foreign service officers from developing countries.		84,280
City Center of Music and Drama		
Children's theatre	262,500	137,500
City School District of New Rochelle		
Restructuring of programs in the school system	5,000	5,000
City University of New York		
Study of the role of organizations in the lives of inner-city adolescents	15,000	7,500
Colgate University		
Internship in academic administration		15,000
Columbia University		
Artificial upwelling project for fish breeding		25,000
Community health programs	500,000	
Harlem Hospital Center, research in family planning		92,212
Library Development Center		25,000
Recording the memoirs of an agricultural consultant	156	7,656
Research in reproductive biology		37,031
School of Journalism: to improve reporting of urban racial problems	25,000	41,925
Special institutional grant	5,250	5,250
Studies of pollution in cooperation with the New York City Science and Technology Advisory Council	25,000	25,000
Summer program for disadvantaged students		15,000

APPROPRIATIONS AND PAYMENTS IN 1971

UNITED STATES (*cont'd*)

Committee for Economic Development

Nation-wide research report on improving the quality
of the environment 125,000 40,000

Cornell University

Agricultural waste and nutrient management program 110,000
Cooperation with the University of the Philippines in the
humanities and social sciences 25,357
Family planning clinic 66,881
Maize research 15,000 15,000
Potato germ-plasm in Latin America—refund (334)
Research on insect pheromones 25,000 12,500
Research on pesticides 50,000 50,000
Schistosomiasis research 10,000
Special institutional grant 37,500 37,500
Study of adolescent drug dependence 129,187

Economic Development Council

Cooperative programs with inner-city schools 150,000 50,000

Educational Broadcasting Corporation

Experimental television laboratory workshop 150,000 75,000

Encyclopaedia of the Social Sciences—refund (1,594)

Foundation Center

General support 250,000

Foundation for American Dance

Choreographers workshop, City Center Joffrey Ballet 25,000 25,000

Henry Street Settlement

Playright in residence, New Federal Theatre 9,500

Institute for International Order

Research to describe the character of a desired world order 15,000 15,000

Institute of International Education

Educational and technical exchange with Central America
and the Caribbean 15,000 15,000
International education program 25,000

International Organization for the Study of Group Tensions

Preparation for 1971 Planning Conference 3,000 2,941

International Planned Parenthood Federation—
Western Hemisphere Region

Education in family planning in Latin America and the Caribbean 50,000

APPROPRIATIONS AND PAYMENTS IN 1971

Juilliard School of Music		
American Opera Center for Advanced Training		100,000
Awards to talented students		84,500
LaMama Experimental Theatre Club		
Experimental workshop in music, dance, and film		50,000
Vera Brodsky Lawrence		
Research on historical American music		7,200
Long Island University		
Restoration of musical manuscripts	9,000	9,000
Manhattan School of Music		
Awards to talented students		31,637
Dance Theatre Workshop — refund		(2,231)
Program of strings training	25,000	
Metropolitan Applied Research Center		
Study of urban ghettos	121,000	75,000
Mount Sinai School of Medicine		
Post-partum follow-up	300,000	113,466
NAACP Legal Defense and Educational Fund		
Division of Legal Information and Community Service		75,000
NAACP Special Contribution Fund		
Leadership development program		119,143
National Bureau of Economic Research		
Training and research collaboration with institutions in the Foundation's University Development Program	225,000	
National Urban League		
Leadership development program	500,000	350,000
New School for Social Research		
Establishment of an experimental television workshop	14,500	14,500
New York Public Library		
Cataloguing of dance collection	24,000	
Index of new musical notation	55,000	17,978
Preparation for republication of historical American music	15,000	15,000
New York Shakespeare Festival		
Playwright in residence	9,500	
Public Theater		112,500

APPROPRIATIONS AND PAYMENTS IN 1971

UNITED STATES (cont'd)

New York University

Graduate performing ensembles in theatre	300,000	50,000
School administration — refund		(539)
Special institutional grant	3,000	3,000
Training in theatre arts		111,644

New York University Medical Center

Institute of Environmental Medicine, defining a research program on the ecology of the Hudson River Basin	5,000	5,000
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Paper Bag Players

Educational theatre for children		40,300
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Planned Parenthood Federation of America

Center for Family Planning	500,000	156,250
Family planning training programs	100,000	16,490

Planned Parenthood of New York City

Family planning training center		191,034
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Population Council

General support		300,000
International Committee for Contraceptive Development	500,000	500,000
Technical Assistance Division		600,000

Puerto Rican Traveling Theatre Company

Dramatized anthology of Puerto Rican stories	15,000	15,000
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Regional Plan Association

Planning of television programs	25,000	25,000
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Repertory Theater of Lincoln Center

Forum Theater	100,000	100,000
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Research Foundation of the State University of New York

Special institutional grant	3,000	3,000
Training grants for foreign nurse-midwives		7,018
Training in family planning		2,318

Rockefeller Foundation

Planning and organization of archives	126,600	75,232
Preparation of a fellowship directory	25,000	26,112

Rockefeller Foundation—New York program costs

Agricultural Sciences	435,050	441,789
Arts and Humanities	193,210	153,415

APPROPRIATIONS AND PAYMENTS IN 1971

Biomedical Sciences	428,960	381,884
Interdisciplinary activities	783,290	754,976
Natural and Environmental Sciences	292,230	124,919
Social Sciences	414,420	402,955
Rockefeller University		
Researchers in reproductive biology		806,000
Schistosomiasis research		9,300
State University of New York at Binghamton		
Research on trace metals in the Upper Susquehanna River Basin	14,400	
State University of New York at Buffalo		
Center for the Creative and Performing Arts	18,600	18,600
State University of New York, College at Brockport		
Center for Philosophic Exchange	11,500	11,500
Syracuse University		
Special institutional grant	6,000	6,000
United Way of America		
Uniform accounting standards in affiliate organizations	25,000	
University of Rochester		
Special institutional grant	4,500	4,500
Yeshiva University		
Programs in community health		183,869
<i>North Carolina</i>		
College of the Albemarle		
Education and development in a depressed rural area	102,825	50,000
Duke University		
Conference on "The Marginal Revolution in Economics"		6,000
Investigations in race relations	7,500	7,500
Special institutional grant	4,500	4,500
Student assistance programs		51,291
Training of physician's assistants and establishment of health service programs in rural areas		50,000
Visiting faculty assignments in Africa, Asia, and Latin America		100,624
North Carolina School of the Arts		
Piedmont Chamber Players		72,000
Resident professional dance company	250,000	78,000
North Carolina State University		
Special institutional grant	10,500	10,500

APPROPRIATIONS AND PAYMENTS IN 1971

UNITED STATES (cont'd)

University of North Carolina

Arbovirus catalogue supplement		600
Carolina Population Center		53,000
Center for research in reproductive biology		296,395
Conference on rodent control		176
Cooperative program in population studies with Mahidol University, Thailand	300,000	60,000
Special institutional grant	6,000	6,000

North Dakota

North Dakota State University

Special institutional grant	10,500	10,500
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Ohio

Antioch College

Jazz workshops		25,000
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Bowling Green State University

Special institutional grant	1,500	1,500
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Case Western Reserve University

Research on schistosomiasis		16,666
Teaching and research program in population		42,000

Cleveland Institute of Music

Awards to talented students		25,000
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Cleveland Public Schools

Involvement of schools in community problems		44,695
Internship for a school administrator		2,715

Karamu Foundation

Consultants for community arts and humanities centers	5,000	5,000
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Kenyon College

Creative writing program		3,000
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Oberlin College

Discovery and support of talented students		109,139
Follow-up of summer program for junior-high-school students		45,000
Summer workshop for public school music teachers		67,500

Ohio Leadership Dynamics Institute

Internships in governmental processes	5,000	5,000
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Ohio State University

Special institutional grant	3,000	3,000
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APPROPRIATIONS AND PAYMENTS IN 1971

Ohio University		
Special institutional grant	1,500	1,500
University of Cincinnati		
East Coast branch of the Congress of Strings		20,000
Western College		
Experimental program in liberal arts education	100,000	50,000
Oklahoma		
Oklahoma State University		
Special institutional grant	1,500	1,500
University of Oklahoma		
Study of the pollution of the North Canadian River in Oklahoma County	20,800	20,800
Oregon		
Oregon State University		
Air pollution studies in the Willamette River Basin	500,000	
Research and training program in wheat improvement for the Near East and North Africa		144,090
Special institutional grant	9,750	9,750
Reed College		
Discovery and support of talented students		25,040
University of Oregon		
Special institutional grant	1,500	1,500
Pennsylvania		
Academy of Natural Sciences of Philadelphia		
Research and teaching in fresh water ecology	293,000	108,434
American Friends Service Committee		
Family planning programs	44,000	44,000
Carnegie-Mellon University		
Special institutional grant	1,500	1,500
Chatham College		
Study of faculty employment policies in 12 Pennsylvania colleges	15,000	
Haverford College		
Internship in college administration		9,010
Post-baccalaureate program		88,300
Lincoln University		
Discovery and support of talented students		60,000

APPROPRIATIONS AND PAYMENTS IN 1971

UNITED STATES (*cont'd*)

Pennsylvania State University

Preparation of black students for graduate work in agriculture	25,000	12,500
Research and training in environmental studies		130,350
Research in economic factors in family-size decisions	14,000	
Research in reproductive biology	15,000	

Philadelphia Public Schools

Internship for a school administrator	31,200	31,200
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Temple University

Cooperation between the University, communities, and schools		49,417
Special institutional grant	2,250	2,250

University of Pennsylvania

Research position in reproductive biology	120,000	49,857
Special institutional grant	12,000	12,000

University of Pittsburgh

Special institutional grant	8,250	8,250
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Villanova University

Theatre program — refund		(2,300)
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Puerto Rico

University of Puerto Rico

Special institutional grant	1,500	1,500
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Rhode Island

Brown University

Special institutional grant	750	750
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South Carolina

Benedict College

Experimental program in liberal arts education	50,000	25,000
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Converse College

Summer training in music for high school students	100,000	49,300
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Tennessee

Commission on Religion in Appalachia

Community development	89,000	89,000
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Fisk University

Development		80,247
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George Peabody College for Teachers

Special institutional grant	1,500	1,500
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APPROPRIATIONS AND PAYMENTS IN 1971

Sequatchie Valley Planning and Development Agency		
Director's salary	18,000	18,000
University of Tennessee		
Special institutional grant	1,500	1,500
Vanderbilt University		
Study of Vitamin E		2,999
<i>Texas</i>		
Baylor University		
Family planning program		10,339
Houston Baptist College		
Scholarships for nursing candidates	10,000	9,000
San Antonio Independent School District		
Internship for a school administrator	21,800	21,800
Southern Methodist University		
Special institutional grant	1,500	1,500
Texas A & M University		
Research and training in tropical veterinary medicine		92,732
Special institutional grant	4,500	4,500
Study of plant resistance to insects		116,300
University of Texas		
Establishment of a workshop for playwrights	13,800	13,800
New approaches to control of conception	120,000	39,965
Research position in reproductive biology	110,000	
Special institutional grant	3,000	3,000
<i>Utah</i>		
Utah State University		
International Shrubs Symposium	5,000	5,000
Research and training in environmental studies		161,000
Special institutional grant	1,500	1,500
University of Utah		
Repertory Dance Theatre	145,000	146,000
<i>Vermont</i>		
Marlboro School of Music		
Contemporary music program		16,666
Middlebury College		
Evaluating the performance of the college	12,000	
Music education project	14,850	

APPROPRIATIONS AND PAYMENTS IN 1971

UNITED STATES (cont'd)

Virginia

University of Virginia

Assignment of scholars to universities abroad		4,507
International conference on "The Open Society"	15,000	

Virginia Polytechnic Institute

Discovery and support of talented students		46,330
Special institutional grant	3,750	3,750

Virginia Union University

Program of community organization and administration	60,000	
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Washington

University of Washington

Assignment of scholars to universities abroad		89,269
Contemporary Performing Group		29,370
Division of Family Planning and Education		31,750
Special institutional grant	4,500	4,500
Training for staff members of the School of Fisheries, Catholic University of Valparaiso, Chile	8,200	55,000

Washington State University

Cooperation with triticale breeding program of CIMMYT	15,000	
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Western Washington State College

Educational program for disadvantaged junior-high-school students		15,416
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West Virginia

Appalachian Research and Defense Fund

Workshop festivals in Appalachia	20,350	20,350
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West Virginia University

Program to increase animal production		126,221
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Wisconsin

University of Wisconsin

Assignment of scholars to universities abroad		205,537
Special institutional grant	21,000	21,000
Study in agricultural economics		4,800

United States—General

**Internship for training at the superintendent level for
minority group administrators**

Two orientation conferences	21,000	10,505
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1969 White House Conference on Food, Nutrition and Health—refund		(24,582)
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Fellowships	41,104	22,294
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APPROPRIATIONS AND PAYMENTS IN 1971

URUGUAY

Fellowships and scholarships		307
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ZAIRE

National University of Zaire

Graduate program in social history	11,220	
Researcher training program	15,000	15,000

Fellowships and scholarships	6,156	3,775
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Miscellaneous payments and refunds of less than \$100 each		<u>(179)</u>
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TOTALS	<u>\$35,053,294</u>	<u>\$40,642,275</u>
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SUMMARY OF FUNDS APPROPRIATED IN 1971

Grants and Programs

Total announced in 1971 — as above	\$35,053,294
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Deduct releases from prior years' appropriations announced in 1971	<u>10,848,033</u>
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Approved and announced in 1971	24,205,261
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Appropriations in 1971 not released during the year	14,585,879
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Appropriation for 1972 general administration expenses	<u>3,143,240</u>
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TOTAL APPROPRIATIONS DURING THE YEAR	<u>\$41,934,380</u>
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