

WSz. V/II/1

INSTITUTO OTOMANI P. A. S.

W. Kerkorian

24594

THE

Rockefeller Foundation

A REVIEW FOR 1928

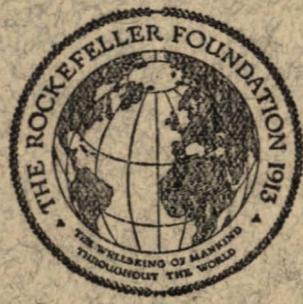
76

Inv. 91

BY

GEORGE E. VINCENT

President of the Foundation



NEW YORK

1929





Graduating Class, 1928, Peking Union Medical College.

THE
Rockefeller Foundation

A REVIEW FOR 1928

BY
GEORGE E. VINCENT
President of the Foundation



NEW YORK

1929

PRINTED IN THE UNITED STATES OF AMERICA

CONTENTS

	PAGE
THE YEAR IN BRIEF	7
THE RECORD OF SIXTEEN YEARS	10
A NEW CHAPTER OPENS	13
THE LYON MEDICAL CENTER	16
MEDICAL RESEARCH AND TEACHING	18
PEKING UNION MEDICAL COLLEGE	19
DOCTOR, HEALTH OFFICER, PRIVATE AGENCY, AND THE PUBLIC	21
HEALTH EDUCATION IN THE LABORATORY AND THE FIELD	24
YELLOW FEVER IN REVOLT	26
YELLOW FEVER RESEARCH CONTINUES	29
NOGUCHI AND YOUNG GIVE THEIR LIVES FOR SCIENCE	32
"THINKING LIKE A MALARIA MOSQUITO"	34
THE HOOKWORM'S AID TO HEALTH PROGRESS	37
PERMANENT RESULTS OF EMERGENCY RELIEF	38
LOCAL HEALTH WORK FROM WARSAW TO SHANGHAI	39
EIGHT HUNDRED FELLOWS FROM FORTY-SIX COUNTRIES	41
CONSULTATION AND FIELD SERVICE	43
AN INTERNATIONAL HEALTH SYSTEM EMERGES	44
WORKING WITH OTHER AGENCIES	46
THE ADVANCEMENT OF KNOWLEDGE	47
APPLICATIONS FOR AID	48
FINANCES FOR 1928	48
SUMMARY OF EXPENDITURES IN 1928	49
FUNDS AND PROPERTY	51
ORGANIZATION	53

THE ROCKEFELLER FOUNDATION

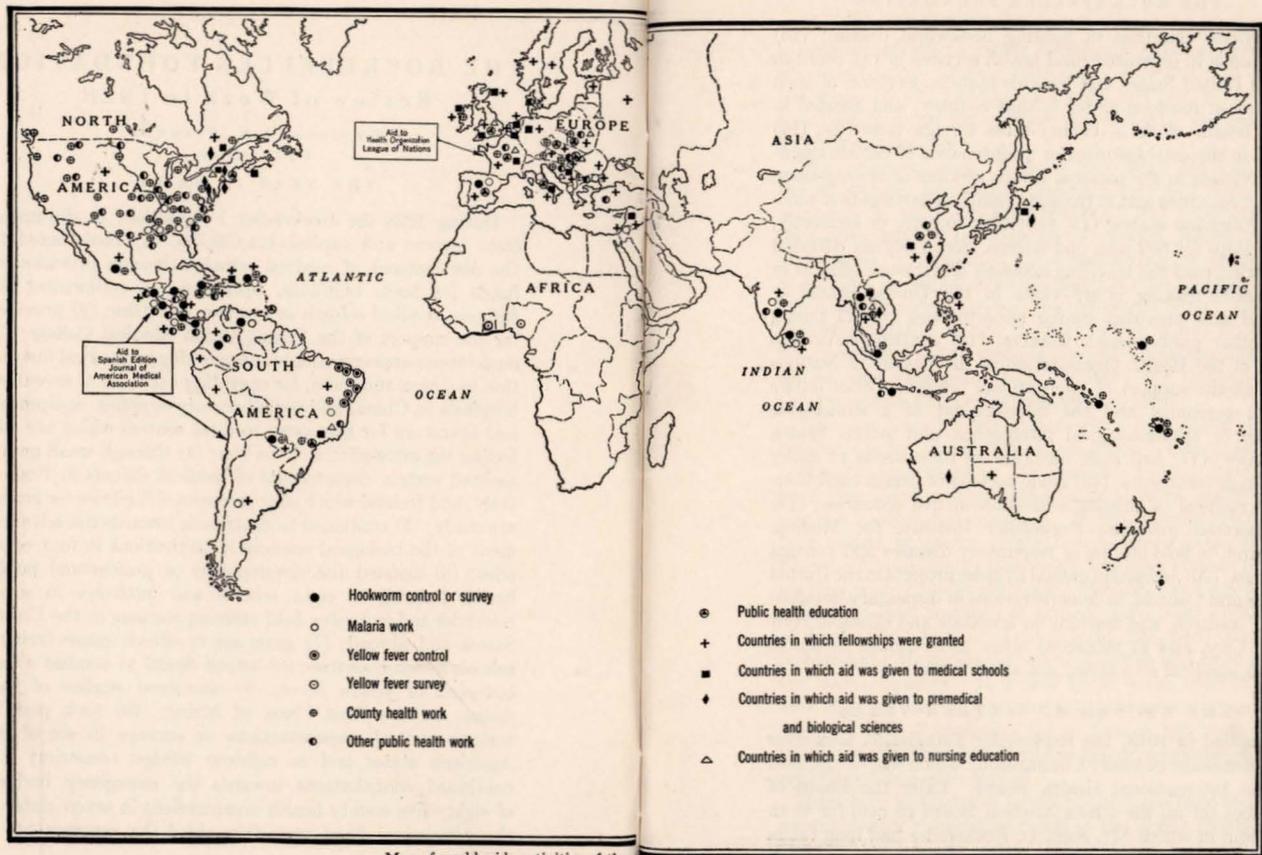
Review of Work in 1928

BY GEORGE E. VINCENT

PRESIDENT

THE YEAR IN BRIEF

During 1928 the Rockefeller Foundation, in disbursing from income and capital \$21,690,738, (1) contributed to the development of medical sciences through provision of funds for land, buildings, operation, or endowment for eighteen medical schools in fourteen countries; (2) provided for the support of the Peking Union Medical College; (3) made minor appropriations for improving premedical instruction in China and Siam, for operating expenses of seventeen hospitals in China, and for laboratory supplies, equipment, and literature for European medical centers which are still feeling the after-effects of the war; (4) through small grants assisted certain departments of medical schools in France, Italy, and Ireland which offer exceptional facilities for graduate study; (5) continued to contribute towards the advancement of the biological sciences in institutions in four countries; (6) assisted the development of professional public health training in eight schools and institutes in seven countries and in twelve field training stations in the United States and abroad; (7) gave aid to fifteen nurse training schools in ten countries; (8) helped Brazil to combat a new outbreak of yellow fever; (9) continued studies of that disease on the West Coast of Africa; (10) took part in malaria control demonstrations or surveys in six of the American states and in eighteen foreign countries; (11) continued contributions towards the emergency budgets of eighty-five county health organizations in seven states of the Mississippi flood area; (12) aided the governments of



Map of world-wide activities of the

Rockefeller Foundation in 1928.



twenty-one countries in fighting hookworm disease; (13) gave funds to organized rural health services in 191 counties in the United States and towards state supervision of such services in fourteen states in that country, and assisted in local health work in twenty-three foreign countries; (14) aided in the establishment or maintenance of certain essential divisions in the national health services of twenty-three foreign countries and in the state health departments of nineteen American states; (15) provided, directly or indirectly, fellowships for 802 men and women from forty-six different countries, paid the traveling expenses of sixty-one officials or professors making study visits in the United States or abroad and provided similar opportunities for 127 nurses and other public health workers; (16) contributed to the work of the Health Organization of the League of Nations through the support of international interchanges of public health personnel and the development of a world-wide service of epidemiological intelligence and public health statistics; (17) lent staff members as consultants to many foreign governments; (18) made surveys of health conditions or of medical or nursing education in five countries; (19) collaborated with the Rockefeller Institute for Medical Research in field studies of respiratory diseases and verruga peruana; (20) assisted in mental hygiene projects in the United States and Canada, in demonstrations in dispensary development, research, and teaching in hospitals and clinics in New York City, and in numerous other undertakings in public health, medical education, and allied fields.

THE RECORD OF SIXTEEN YEARS

Founded in 1913, the Rockefeller Foundation took over the Rockefeller Sanitary Commission,¹ which was reorganized as the International Health Board. Later the Board of Trustees set up the China Medical Board to care for work in China in which Mr. John D. Rockefeller had long taken

¹ The Rockefeller Sanitary Commission was established in 1909 for the control of hookworm disease in the United States.

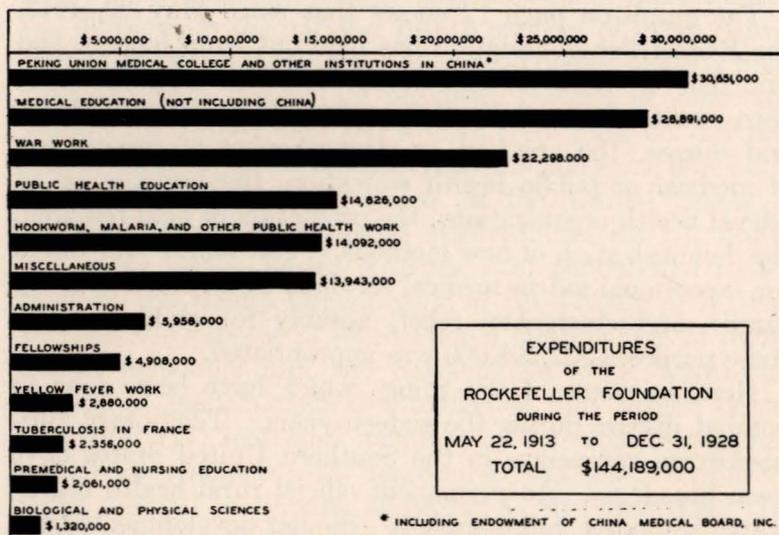
an interest. From these beginnings there grew naturally a program of aid to public health and medical education the world over. During 1928 plans were made to extend the scope of the Foundation's activities (see p. 13). At this time it seems appropriate to summarize the record of the first sixteen years.

The graph on page 12 shows that since May 22, 1913, the Rockefeller Foundation has paid out from income and principal a total of \$144,189,000. The emphasis has been obviously on the training of doctors, health officers, and nurses, the creation or strengthening of institutions of medical or public health education, the building up of official health organizations, the promotion of field research, the demonstration of new methods. The World War called for exceptional aid to medical services, social work in army camps, and emergency relief, notably for children. For these purposes \$22,298,000 was appropriated.

Here are some of the things which have been done to combat disease during the sixteen years. Temporary anti-hookworm campaigns in the Southern United States have been broadened into permanent official rural health organizations, modest, but complete. Similar developments have been aided in many tropical and semitropical regions. Elsewhere local health machinery has been created or reorganized with Foundation help. Malaria has been studied more fully, and methods of control have been worked out at home and abroad. Yellow fever has been forced to retreat from Mexico and Central America and from Northern South America. It is now to be found only in Brazil and West Africa. A wartime antituberculosis organization built up with Foundation aid in France has been wholly taken over by the French and is being incorporated into a general public health service.

Schools or institutes of public health have been created or extended with Foundation funds at the Johns Hopkins and Harvard Universities in the United States, and in Toronto, London, Prague, Warsaw, Budapest, Belgrade, Zagreb, and

São Paulo, Brazil. Pledges have been made towards similar institutions in Angora and Calcutta. Further aid has been given to the training of health officers through participation in the maintenance of field training stations, through support to the League of Nations' plan of inter-



national study tours by health officials, and through the granting of fellowships.

The progress of both preventive and curative medicine depends upon the constant improvement of fundamental medical training. For the strengthening of influential medical schools in many parts of the world from London, Brussels, and Lyon, through Canada and the United States to Hongkong and Singapore, the Foundation has expended about \$29,000,000. The program, adapted to varying conditions, has included the bringing of laboratories and teaching hospitals into close relations on the same site, the improvement of laboratory facilities under full-time teachers, the better organization of clinical instruction with a larger share of time and attention from the teachers,

increased emphasis on research and advanced training of teachers and investigators through fellowships and traveling professorships. All this has been done in addition to the building, equipment, and support of the Peking Union Medical College and aid to hospitals and the premedical sciences in China.

The importance of nursing to public health work, to medical care, and to the education of doctors has led the Foundation to aid schools of nursing in several countries of Europe, in the United States, and in the Far East, through gifts towards buildings, equipment, and maintenance, and through fellowships.

In addition to the characteristic work for public health and medical education, the Foundation has made minor appropriations for the physical and biological sciences, has contributed to various surveys, and cooperated with a number of organizations and committees, notably the Health Organization of the League of Nations.

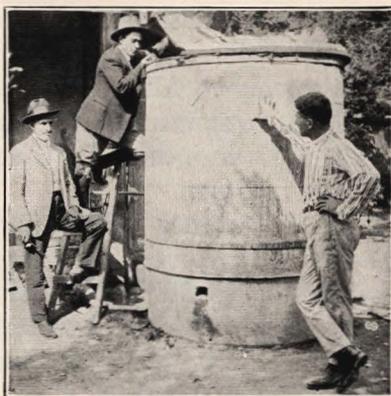
Fellowships, which have already been mentioned, have proved a most important and effective means of realizing the aims of the Foundation. Up to December 31, 1928, 3,187 fellowships had been granted to representatives of fifty-eight countries at a total cost to the Foundation of \$4,908,000. The international significance of these fellowships may be inferred from the fact that, of the total fellows, 1,383 pursued their studies in countries other than their own.

A NEW CHAPTER OPENS

During 1928 a conference committee of four Rockefeller boards—the General Education Board, the Rockefeller Foundation, the Laura Spelman Rockefeller Memorial, and the International Education Board—sought ways of bringing the work of these organizations into closer and more definitely cooperative relations. In the autumn the committee made a report embodying recommendations which were approved by all the groups, with the understanding



Minor drainage is often an effective antimalaria measure.



Sealing water-tanks against the yellow fever mosquito.



Child welfare work
(left).

Administering hook-worm treatment
(right).



A class in public health nursing.

Types of health work to which the Foundation has given assistance during the past sixteen years.

that the new régime would go into effect at the beginning of 1929.

The essential features of the reorganization were these: (1) the merging of the Rockefeller Foundation and the Laura Spelman Rockefeller Memorial into a new corporation to be known as the Rockefeller Foundation, which should assume all the assets and liabilities of the two boards; (2) the extension of the scope of the new Foundation's activities to include not only public health, but the advancement of knowledge in the medical sciences, in the natural sciences (taking over the foreign program of the International Education Board), in the social sciences (heretofore administered by the Memorial), and in the humanities; (3) the administration of the public health activities of the Foundation through an International Health Division with a group of seven scientific directors; (4) the appointment of a director with necessary assistants for each of the fields—the natural sciences, the medical sciences, the social sciences, and the humanities; (5) a clearly defined division of labor between the General Education Board and the Foundation through frequent conferences of the officers; (6) the incorporation of a China Medical Board, with independent self-perpetuating trustees, to which the lands and buildings in Peking, together with endowment funds and annual appropriations, should be given.

From this reorganization two large and well-endowed Rockefeller boards emerge: the General Education Board, with a Federal charter which limits expenditures to the United States, and the Rockefeller Foundation, incorporated under the general laws of New York State. The book value of the combined resources of the new Rockefeller Foundation will be more than \$203,000,000, with outstanding obligations of \$35,000,000.

It is worth noting that since their founding the four Rockefeller boards have not only distributed all their incomes but have appropriated \$225,000,000 of capital funds. Even when the increase in market value of securities has

been taken into account, the appropriations from principal represent a substantial reduction in the endowments of these boards.

THE LYON MEDICAL CENTER

The policies and methods of the Rockefeller Foundation find typical expression in a cooperative plan for building up in the city of Lyon, France, modern facilities for medical teaching and research, which, it is hoped, will lead to a further development of public health activities. Under discussion for some time, this program began to take concrete form during 1928.

Lyon is the third city of France in size. The municipal government favors progress; there is an enterprising public spirit; leading citizens take an active part in social work; the administration of the medical school is enlightened and alert. The Ministry of Public Instruction in Paris recognizes the importance of Lyon as a university city and gives sympathetic support. The auspices for a forward step in medical education are singularly favorable.

When the plan was first discussed this was the situation: medical institutes or laboratories were housed in old quarters near the center of the city, and their equipment was inadequate; a large new municipal hospital was in process of construction on a suburban site; near this was a temporary residence hall or hostel for medical students; in an historic hospital in the heart of the city a nurse training school was being carried on with Foundation aid; a maternity and child welfare nursing service, an outgrowth of an American Red Cross wartime demonstration, was going forward under a private society; there were a number of dispensaries for the treatment and prevention of diseases. Thus scattered and unrelated, these activities awaited closer association and better team-work.

The authorities of the medical school having asked for the cooperation of the Rockefeller Foundation, the latter invited the Dean, two of his staff, and the university architect to

visit medical centers in various countries as its guests, in order to familiarize themselves with recent developments in hospital and laboratory architecture, the organization and methods of teaching, provisions for housing students, relations of medical schools with public health work, and other pertinent things. After the commission returned to Lyon, the university worked out a plan for creating a new medical center and asked the Foundation to contribute to the sum needed to carry out the program. The project involved the erec-



Three members of the Commission from Lyon that visited medical institutions in various countries preparatory to the drawing up of plans for a medical center for the city. One of the pavilions of the new hospital which will form a part of this center is shown at the left.

tion, on a site directly across the street from the new hospital, of a building to house all the medical laboratories and the administrative offices of the medical school; increase in the annual budget to improve teaching facilities; and the provision in the hospital of laboratories for the clinical subjects. Plans for the future include the construction on the same site of a nurses' home and training school; the creation near by of a *cité universitaire*, or students' quarters; and the establishment of a health center as a means of training in preventive medicine and public health.

The city is hastening the completion of its new hospital, and work on the medical school building is advancing rapidly. Thus the fundamental plan of bringing the labora-

tories to the hospital site and improving teaching facilities is now under way. Towards the cost of this project, to which the Government, the municipality, the university, and private citizens contribute, the Rockefeller Foundation has appropriated or pledged 43,000,000 francs.

MEDICAL RESEARCH AND TEACHING
EDINBURGH TO BEIRUT

The Foundation of necessity adapts its policies in the medical sciences to a wide variety of needs, ranging from a large-scale, comprehensive project like the Lyon medical center to a small item of aid, a study trip for a professor, a fellowship for a promising assistant, a grant for special apparatus or much needed literature. These minor forms of assistance, it should be clearly understood, are given only on a limited scale and to institutions, departments, or scientific leaders in cases where for special reasons the Foundation is cooperating.

During 1928 the Foundation aided to some degree eighteen medical schools from the University of Edinburgh to the American University in Beirut. Of these, nine were in Europe, two in Canada, one in Haiti, one in Brazil, one in Japan, two in China, one in Siam, and one in Syria. In addition, medical departments of twenty-two schools in three different countries were assisted, laboratory supplies were given to eighteen investigators in ten countries, and medical literature was sent to 247 institutions in seventeen national areas.

An international exchange of ideas was promoted by the visits of five prominent medical teachers and administrators from Canada, Switzerland, Bulgaria, and India, to medical centers in the United States and Canada, by trips of Foundation staff members to the medical schools of twenty different countries, and by the distribution to all the medical schools of the world and to many leaders in medical education and research of three volumes of "Methods and Problems of Medical Education," dealing with a variety of subjects

in eighty-three articles contributed by authors from twenty-three different countries.

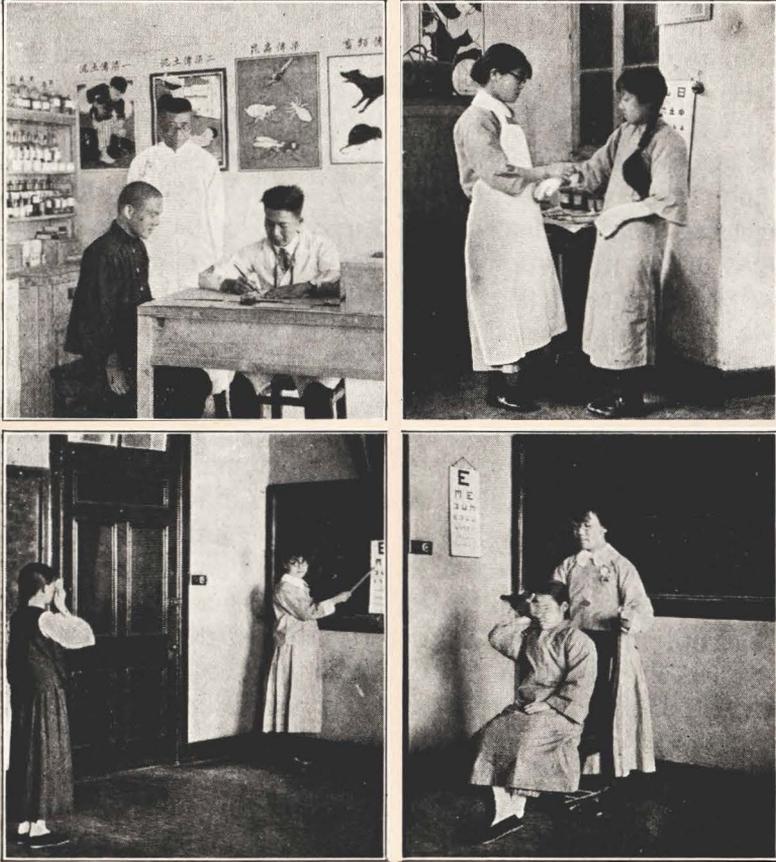
PEKING UNION MEDICAL COLLEGE ON THE
WAY TO AUTONOMY

In the Foundation's program of medical education the Peking Union Medical College is unique. It is the only medical center for teaching and research to which the Foundation has contributed the entire cost of land, buildings, equipment, and maintenance. This policy was deemed necessary, since there were no universities or government agencies in a position to assume responsibility when the college was established. These were the only terms on which it then seemed possible to set up in China an adequately equipped and staffed school which would maintain high standards of teaching and investigation, train leaders in medical sciences and in nursing, offer opportunities for graduate study, emphasize in the medical course the meaning of public health, and gradually diffuse among the leaders in China understanding and appreciation of modern scientific methods in the care and prevention of disease.

The work of the college has developed gradually without interruption or setback. In spite of disturbed conditions there has been no hostility shown towards the institution, which has scrupulously avoided any semblance of political partisanship. During 1928 the new Nationalist Government which occupied Peking assumed an attitude of friendliness. The only inconveniences have been due to interruptions of railway services, which at times have hampered shipments of coal and other supplies, reduced the number of hospital patients, and delayed the arrival of students.

In June 1928 the college gave the M.D. degree to thirteen graduates, its largest class. The enrolment of undergraduates in the autumn was eighty-five, a gain of seven over the previous year. Graduate and special students brought the total up to 118. In the school of nursing there were forty-two students, as against thirty-one a year earlier.

For the academic year 1928-29 the staff, including faculties of the medical and nursing schools and persons engaged in managing the hospital, numbered 131, of whom 87, or 66 per



Scenes at the Peking Health Center.

cent, were Chinese. A year ago the percentage of Chinese was 62, and in 1921-22 it was 25. The number of hospital patients increased from 4,217 in 1927 to 4,669 in 1928.

There is good reason to hope that if political conditions become more stable, the college may increase the already established cooperation between its department of hygiene

and public health and the city of Peking health administration. The college, in return for teaching facilities, assists the city authorities in maintaining a health center, where medical and nursing students are taught hygiene and public health and service is given to a district of Peking. The Nationalist Government has reorganized the city Health Department, has appointed a modernly qualified health officer, and is seeking to put the service on a sound and efficient basis.

During the year other steps have been taken towards the possibly remote but none the less steadily sought goal of making the college a Chinese institution, serving the Chinese people, staffed mainly by Chinese citizens, and administered under Chinese auspices. The Rockefeller Foundation waived its right to appoint a majority of the board of trustees of the college, and with the consent of other organizations which previously appointed representatives on the board, the board of trustees was made self-perpetuating.

In 1928 the China Medical Board, Incorporated, with a self-perpetuating board of trustees, quite independent of the Rockefeller Foundation, was formed. To this board the Foundation turned over an endowment of \$12,000,000 for the maintenance of the Peking Union Medical College, but with the proviso that such funds may be used for the support of other educational institutions in China or in the United States, should it seem at any time in the future inadvisable to continue the present arrangement. The land, buildings, and equipment held by the Foundation for the Peking Union Medical College were also transferred to the China Medical Board, Incorporated. The latter board has leased the property to the college.

DOCTOR, HEALTH OFFICER, PRIVATE
AGENCY, AND THE PUBLIC

The Foundation helped medical education at first because of its bearing on public health work. Later this interest was extended until the program now includes the advancement

of the medical sciences themselves. The earlier aim was valid because of the dependence of the public health movement upon the knowledge, sympathy, and public spirit of the typical practitioner. If the cause of prevention is to prosper, it is he who must recognize and report communicable diseases, understand the organization and methods of the health service, loyally aid its officers, currently



A modern development in child health work: a lesson in breathing at the otorhino-laryngology clinic maintained in conjunction with the Medical School of the University of Strasbourg.

inform patients and public and thus help to create a favorable attitude in the community.

Upon the medical school rests an obligation to put the future doctor in the way of understanding and accepting his responsibilities towards the public health. Only of late have a few schools, notably in Great Britain and the United States, shown a determination to prepare the doctor to take his place in a rapidly changing social order.

It is high time that this be done, for the medical graduate of today goes out into a world very different from that his father knew. Medical practise calls for expensive equipment; specialization forces an organization of professional services; it grows harder to practise alone; hospitals are

developing in number, capacity, equipment, and efficiency; diseases like typhoid, once a source of profit to the practitioner, have almost disappeared from well-administered regions; clinics and health centers have sprung up; visiting nurses are active; great industries have organized their own services of medical care and hygiene; the European countries have established state health insurance schemes. In this new situation four groups are trying to adjust their relations: the doctors, the health officers, the leaders of private or voluntary health societies, and that vast inclusive group known as the public. Each has interests to protect and promote. There are inevitable suspicions, fears, competitions, clashes. The physician thinks that a health center is taking away his practise. The public health officer believes that a private agency is usurping his functions. The public declares that it is being exploited by the doctors or tyrannized by the health department.

If one looks at things through the eyes of each of the four groups in turn, he cannot fail to see that each has some cause to complain. There are very real conflicts of interest. But clashes are not to be averted by merely making fine and vague phrases. The only solution is to be found in the discovery of common interests and in the gradual extension of these towards complete accord. Already in many places successful plans of cooperation have been worked out. Doctors are loyally supporting public and private health activities only to discover that an increased community interest in personal hygiene, school health, maternal and child welfare is sending more and more patients to private practitioners. The public health staffs become in a sense agents for the doctors, who in turn man and strengthen the institutions of prevention. If this sort of thing can be made general, the well-known lines will come true in health work also:

It is not the individual
Or the army as a whole,
But the everlastin' team-work
Of every bloomin' soul.

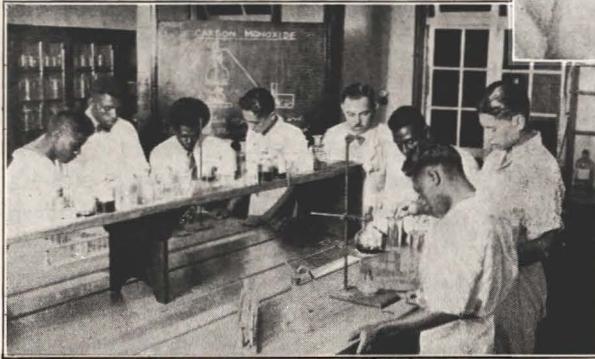
In the gradual solution of the public health problem the Rockefeller Foundation has supported the training of doctors and health officers but has limited its direct aid for health organization and activity to official governmental agencies—national, state or provincial, and local. In pursuing this policy the Foundation has not questioned the value of the pioneering and propagandist services of voluntary health societies. But, compelled to put restrictions of some kind upon its world-wide program, it has confined its cooperation to governmental services, which are responsible, permanent, and likely to perpetuate improved methods, once these have been tested and found feasible and effective.

HEALTH EDUCATION IN THE LABORATORY AND THE FIELD

The newer ways of introducing medical students to public health are admirably illustrated in the cooperation of a university department of hygiene with an institute of public health of a ministry of health in Zagreb, Yugoslavia. The Foundation has contributed to both of these agencies. First of all, the university department of hygiene is housed on a floor of the school and institute of the Ministry of Health, so that students are constantly in an environment of public health activity. Second, in the area around Zagreb there are many projects of sanitation and public health in active operation: good water-supplies, public baths, health stations large and small. Medical students not only work in the laboratories and attend lectures, but they also visit the field and, at first hand and under expert guidance, observe practical work actually going on. They cannot fail to get concrete and lasting ideas about the meaning and methods of modern sanitation and public health procedures.

In the Southern Pacific another experiment combines a certain amount of medical training with preparation for a limited kind of public health service. In the Central

Medical School for Native Medical Students in Suva, Fiji, matriculants from six groups of islands are taking courses which will enable them, under foreign direction, to render services of both cure and prevention to their fellows. This institution makes no attempt to give either a full medical or public health training. It frankly seeks to meet local needs as effectively as possible. To this undertaking the Rockefeller Foundation is making an annual contribution for a limited period.



A second-year student of the Central Medical School for Native Medical Students, Suva, Fiji (*above*); a class at work in the chemical laboratory of the school (*left*).

But when medical schools have done all they can to emphasize the importance of prevention, graduates who wish to take up public health as a career must have additional specialized training. This is to be had in schools of public health, or through actual experience supplemented by reading and attendance upon short courses in schools and field stations, or wholly by the hard, though often disciplinary, method of self-education. One characteristic feature of the modern public health movement is insistence upon special technical training for health officers, laboratory workers, statisticians, sanitary engineers, inspectors, and public health nurses.

After contributing on a large scale to the establishment or expansion of several important schools or institutes of hygiene (see p. 11) the Foundation has continued to make grants to a number of these institutions. In 1928 the list included the Harvard School of Public Health; the Institute of Hygiene, São Paulo, Brazil; the London School of Hygiene and Tropical Medicine; the State Institute of Public Health, Prague; and the State Hygienic Institute, Budapest.

Field stations for general or special practical training and investigation have proved valuable. Twelve such stations were assisted during 1928. They were distributed as follows: Alabama, Mississippi, North Carolina, Ohio, Spain, Corsica, Italy, Poland (3), Hungary, and Czechoslovakia. An idea of the influence of one of these stations may be gained from the following facts about the station maintained in connection with the Darke County Health Unit centered in Greenville, Ohio: seventy-one persons from seven states and thirteen foreign countries, including twenty-seven prospective health officers, seventeen nurses, eleven sanitary inspectors, and sixteen foreign doctors, were given supervised experience and instruction. In addition there were 161 visitors from eight states of the United States, two provinces of Canada, and seven other foreign countries.

Fifteen nurse training schools in ten different countries received aid during 1928. The most noteworthy contribution was the gift of \$1,000,000 towards the endowment of the Yale University School of Nursing.

YELLOW FEVER IN REVOLT

Since 1918 the Foundation, through its International Health Board, later renamed the International Health Division, has been aiding governments to attack systematically and concertedly the strongholds of yellow fever in the Americas and, recently, has itself studied the nature of the same or a similar disease in West Africa. The campaign was begun under the leadership of the late General Gorgas who lived to see substantial progress made in the Western

World. He died in London in July 1920 on his way to make a preliminary survey in Gold Coast and Nigeria.

Beginning with the banishment of yellow fever from Guayaquil, Ecuador, in 1918-1919, and the prompt suppression of a secondary epidemic in Northern Peru, the work was pushed steadily in Mexico and Central America until by 1925 the fever had disappeared from these countries and seemed to be making its last stand in Northern Brazil. Here,

too, cooperative measures adopted by the Brazilian Government and the Foundation met with initial success. In 1927 there was reason to hope that yellow fever was under control in the chief ports of Northern Brazil and was likely to burn itself out in the back-country.

But this hope proved oversanguine. Possibly as a result of troop movements through old yellow fever areas in the interior, cases began to appear again in port cities and in the back-country. Prompt and vigilant action was showing results, when, in May 1928, the disease appeared in Rio de Janeiro for the first time since 1908, when Oswaldo Cruz brought his famous campaign to a successful end. Official figures give a total of 108 cases in the city and suburbs up to September 10th. The mortality was 55.5 per cent. Eighty-two per cent of the persons attacked were males. Native resident Brazilians were much less susceptible than people who had



Cases of yellow fever were reported in Brazil during 1928 in the city of Rio de Janeiro and in the states of Sergipe, Pernambuco, and Bahia in the northern part of the country.

lived in the city for a short time. Of those who had the disease, 85 per cent had been resident for less than five years. In Northern Brazil during 1928 a total of twenty-one cases was reported.

It will be remembered that yellow fever (the inciting cause of which is a filterable virus) is spread by a mosquito, the female *stegomyia* (or *Aedes aegypti*). About twelve days after the mosquito has bitten a person who is in the early stages (first three days) of a yellow fever attack, its bite becomes infective and it can then



In Brazilian communities that are without a piped water-supply the residents purchase water from vendors or carry it in cans or jars from a central supply station. The water thus secured is stored at the homes in receptacles of various types.



transmit the disease to a non-immune. There are no human "carriers" of yellow fever. Survivors are not subject to a second attack and are not a source of danger to others.

The effective method of combating yellow fever is to keep the number of mosquitoes at so low a point as to eliminate all danger of transmission. By a well-organized carefully administered system, mosquitoes are either denied access to water in which to deposit their eggs or, if the eggs are laid, the larvae are destroyed before they develop into adults. In emergencies adult mosquitoes may be destroyed by fumigation and spraying in houses. In a community which has no piped water-supply but depends upon tanks,

barrels, open jars, etc., the work of control demands meticulous care and constant vigilance.

The Director General of Public Health of Brazil is inclined to attribute the outbreak in Rio de Janeiro to the arrival in the capital of soldiers from Northern Brazil suffering from mild or masked cases of yellow fever which had not been recognized by army doctors. The Government is concentrating men and money upon the task of reducing the mosquitoes to the point where the spread of the epidemic cannot continue.

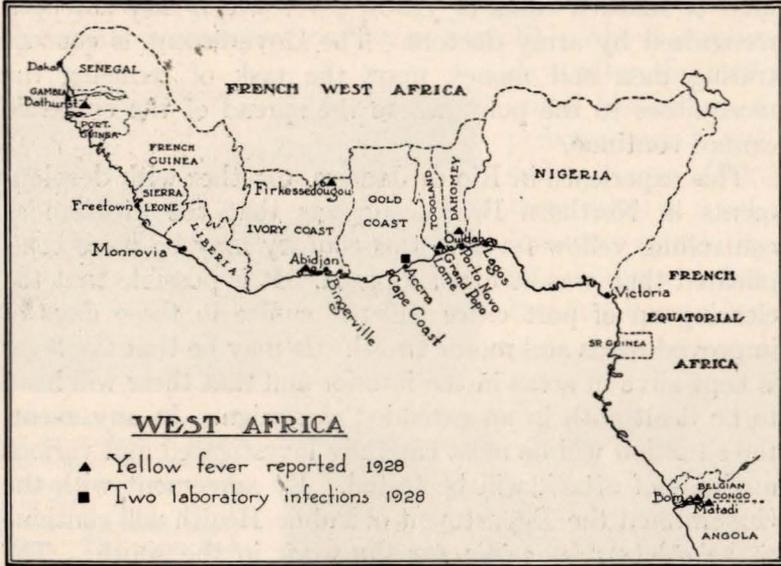
This experience in Rio de Janeiro, together with developments in Northern Brazil, suggests that the problem of controlling yellow fever in this country may be more complicated than was at first supposed. It is possible that the clearing up of port cities will not suffice in these days of improved roads and motor travel. It may be that the fever is kept alive in areas in the interior and that these will have to be dealt with in an extended campaign. In any event, the situation will be most carefully investigated and various methods of attack will be tested. By agreement with the Government the Department of Public Health will continue to be solely responsible for the work in the south. The operations in Northern Brazil will be carried out jointly by representatives of the Foundation and of the Federal and state governments.

YELLOW FEVER RESEARCH CONTINUES

In a well-appointed special station at Lagos, Nigeria, in a British institute at Accra on the Gold Coast, in a laboratory in Bahia, Brazil, and in quarters provided by the Rockefeller Institute for Medical Research in New York, investigators under the auspices of the Foundation have continued studies of the nature of yellow fever, methods of detecting its presence, the kinds of mosquitoes by which it is transmitted, the breeding habits of these insects, and the possibilities of protecting non-immunes against infection. The question as to whether the African and American yellow fevers are two

different diseases or one and the same has been kept constantly in mind.

The Indian monkey, *Macacus rhesus*, which, after futile attempts to inoculate West African animals of many kinds,

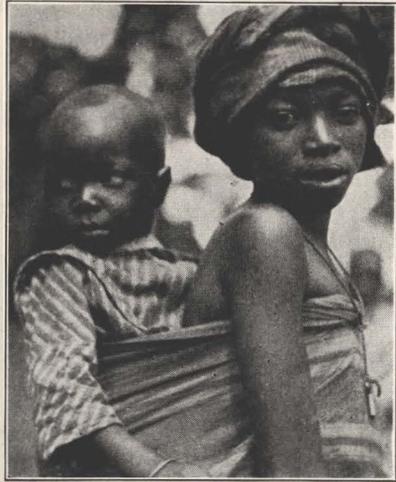


Countries on the West Coast of Africa, where yellow fever was reported during 1928.

the Foundation's West African Commission found to be susceptible to yellow fever, has proved invaluable as an experimental animal. Given the disease from a human source either by direct blood inoculation or by the bite of an infective mosquito, this monkey shows typical symptoms and bodily changes. The serum from a man convalescent from yellow fever will give the monkey immunity for a limited period. The rhesus is peculiarly useful in the diagnosis of those mild cases among native races and all children which so often elude discovery and probably explain the persistence of yellow fever in obscure endemic centers.

Some of the preliminary results of yellow fever research were published in technical journals during 1928. Other

papers will follow. While no specific causative agent for the disease has been found, knowledge about the virus has made some progress. The identity of African yellow fever with the American type is now almost completely established. Experiments with mosquitoes have proved that, in Africa at least, the *Aedes aegypti* is not the only means of transmission. Some of its close cousins are able to carry the infection, and there is even reason to think that an entirely



West African mother and child.



A Nigerian tom-tom band.

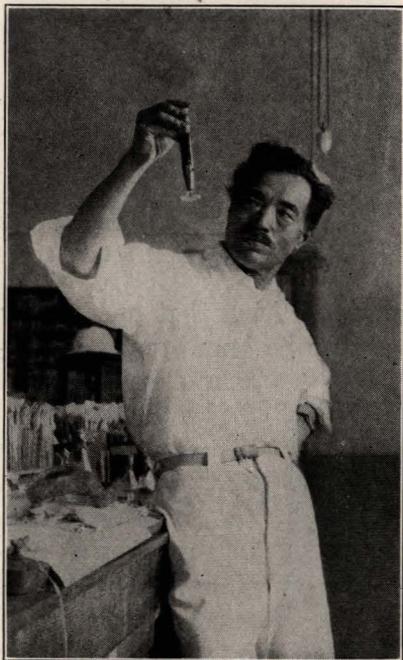
different kind of mosquito may also be found guilty. Certain tests seem to indicate that virus in blood may find its way through even the unbroken skin of a monkey or possibly of a man and thus directly cause infection.

Before any plan for the control of yellow fever in West Africa can be considered, much more knowledge will be needed. In Brazil further information must be sought. A program of research is being steadily pushed forward by groups of well-trained, experienced, resourceful, and devoted men who do not

hesitate to face isolation, hardship, and danger for the sake of science and human welfare.

NOGUCHI AND YOUNG GIVE THEIR
LIVES FOR SCIENCE

The death of the brilliant British investigator, Adrian Stokes, at Lagos in 1927, showed that in laboratory research



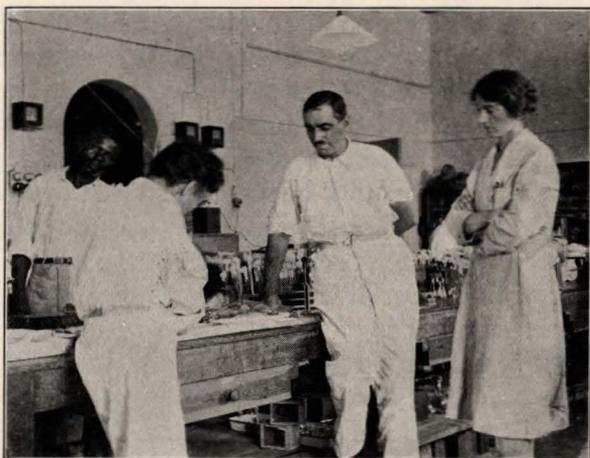
Dr. Hideyo Noguchi.

in yellow fever lurks unsuspected peril. In spite of this tragic event, the work went steadily forward and other scientists continued readily to accept posts on the firing-line. Among these was the world-famous bacteriologist, Hideyo Noguchi, of the Rockefeller Institute for Medical Research, who, under the auspices of the Foundation, had already studied yellow fever in Ecuador, Peru, Mexico, and Brazil. Although not in the best of health and well on in years, he insisted, against the advice of many friends, on undertaking the arduous expedition.

Dr. Noguchi decided to do his work at Accra, Gold Coast. Special provisions were made for him at Foundation expense in the British Medical Research Institute under the direction of Dr. W. A. Young, who gave whole-hearted cooperation, extending all possible facilities and making a large number of pathological examinations. Beginning his studies in November 1927, Noguchi worked with characteristic energy and unremitting application until early May,

1928, when he said that he had done all he could in West Africa and was ready to take his material back to New York for continued investigation. On the eve of sailing for home he was stricken with yellow fever and died in the European Hospital at Accra, May 21, 1928.

Born in Japan in 1876, graduated in medicine in Tokyo, having occupied research and teaching posts in his native country, Noguchi in 1900 came



Dr. W. A. Young in his laboratory at Accra.

to the United States, served for three years on the pathological staff of the University of Pennsylvania under Dr. Simon Flexner, and then, after a year in the State Serum Institute of Copenhagen, became one of the original staff members of the Rockefeller Institute for Medical Research, a post which he held until his death. Dr. Noguchi's extensive researches in bacteriology had an important bearing upon paresis, yellow fever, Oroya fever, trachoma, and other diseases. He showed extraordinary skill and resourcefulness in the technic of bacteriology, to which he made lasting contributions.

Noguchi was honored by membership in significant scientific societies at home and abroad; he was the recipient of degrees from many universities, and was decorated by foreign governments. In his death bacteriological science has lost one of its most brilliant and original investigators. His character found true expression in his readiness to make the

supreme sacrifice for the sake of science, to which he had dedicated his life.

A few days after Noguchi's death, Dr. W. A. Young, who had welcomed him so hospitably, fell ill of yellow fever, of which he died May 30. Dr. Young was born in London in 1889, was educated in Dundee, took degrees in medicine and public health, served in hospitals, was graduated from the Liverpool School of Tropical Medicine, and joined the West African Medical Staff in 1913. He saw war service in the Cameroons, afterwards continuing medical and research work in Nigeria until he was transferred to the Gold Coast as pathologist, and finally becoming director of the Medical Research Institute at Accra. Dr. Young was an able investigator with a special interest in yellow fever. He had published a number of valuable papers and was regarded as a man of promise in his field. His death was a loss to science. His personality and character impressed all who knew him. The Rockefeller Foundation pays tribute to Dr. Young's memory and deeply regrets that he fell a victim in the cause he so faithfully served.

“ THINKING LIKE A MALARIA MOSQUITO ”

It has been said that a good malaria fighter must “learn to think like a mosquito.” He must ask: Which of many kinds of anopheline mosquitoes shall I try to imagine myself? How far is it possible to fly? When and where is food to be had? Which blood is to be preferred, human or animal? How can one get into a screened house? Where shall one rest after a good meal? Where is the best place to deposit eggs? Is the water of the right kind and temperature? Is it stagnant or flowing? Is there vegetable growth to protect eggs and larvae from fish? Then, too, it is important to think like a larva which has grown from egg to “wiggler,” and to wonder: How can one get through that film of oil on top of the water? Is that little floating speck food or a grain of Paris green?

No wonder that malaria presents a complicated problem

about which experts fall out. When so many factors are to be reckoned with there is a temptation either to despair of doing very much or to put one's faith largely in a single method. Thus one group of malariologists believes that malaria tends to disappear automatically in communities that reach a fairly high economic, social, and cultural level. A second theory holds that for most of the malaria a rela-

tively small number of house-loving, well-protected, long-lived, and lazy female anophelines are to blame. Catching and killing these



Fighting the malaria mosquito: inspectors searching for anopheline larvae in a stream near Leesburg, Georgia (*above*); a Ceylonese oiling squad ready for a day's work (*right*).



mosquitoes is, therefore, the thing to do. A third idea is that major drainage operations will put an end to serious breeding of malaria mosquitoes. A fourth group insists that systematic and compulsory giving of quinine to whole communities is the most important measure.

Still another plan, which the Foundation has tested and shown to be effective in a number of suitable areas, is to discover significant breeding-places and either eliminate these by minor drainage and filling of hollows, or prevent the development of mosquito larvae into adult insects by the use of larva-eating fish or by suffocating or poisoning the "wrigglers" with oil or Paris green. At a malaria conference

held at Geneva in June 1928 under the auspices of the Health Organization of the League of Nations, all these and other ideas about combating the disease were frankly and fully discussed. While it would be too much to say



A scene from a moving picture film used in educational work in Java. Residents of the island are shown taking treatment for hookworm disease.

that an entire agreement was reached, progress towards a more inclusive program of malaria research and control was undoubtedly made.

One thing at any rate is certain. Malaria is a local problem in the sense that,

before one can hope for success in the control of it, there must be a careful survey of the actual situation with respect to geological formation, temperature, rainfall, the particular mosquitoes which are guilty, their breeding-places, habits of life, range of flight, food preferences, and many other things. Then, too, the blood of adults and children must be examined to detect the malaria parasite. Splens, which in confirmed cases of malaria show enlargement, should also be examined as one index of the prevalence and intensity of the disease. All these conditions having been determined, a program of control, adapted to the specific situation, may be decided upon and put into effect. During 1928 the Foundation assisted in an especially

complete survey of this kind at Maracay, not far from Caracas in Venezuela.

Twenty foreign governments from the West Indies through Europe to the Philippines were assisted in 1928 in some form of antimalaria measures or research. In the United States contributions were made to the malaria budgets of fifteen countries in six southern states. Assistance in malaria field studies or research was given at stations in North Carolina and Alabama, and at the Johns Hopkins University and the University of Chicago. Practical training for malariologists was provided at malaria stations in Italy, Corsica, and Spain.

THE HOOKWORM'S AID TO HEALTH PROGRESS

The idea of county or local health organizations with full-time staffs was a natural outgrowth of the work of the original Rockefeller Sanitary Commission, which aided states of the Southern United States to control and prevent hookworm disease. This disease has been described as "probably the most prevalent of all man's ills, certainly the most common of all human parasitic infections." Tropical and semitropical regions furnish the conditions of warmth and moisture under which, in all but a few kinds of soil, the small hookworm larvae, hatched from eggs, flourish. These larvae make their way through the bare feet of their human host into the intestinal tract, where they remain as parasites, robbing their victim of blood.

The fact that people can be quickly freed from this infestation and protected by proper sanitation from a recurrence of the disease makes the malady extremely useful in showing rural communities what public health means. Hookworm disease has been called "the advance agent of public health organization," because it has prepared the way for more general and inclusive programs. Thus several years ago the Foundation ceased to aid antihookworm campaigns in the United States but concentrated its efforts

upon expanding hookworm units into county health organizations.

In certain other countries aid is still being given to anti-hookworm campaigns, both for the sake of the victims and as a means of promoting the idea of more inclusive health activities. During 1928 assistance either through grants of money or through expert advice was given in Mexico, Central America, Jamaica, Porto Rico, Colombia, Paraguay, Venezuela, Spain, Ceylon, India, the Netherlands East Indies, Siam, the Straits Settlements, and in the South Pacific Islands. Hookworm studies were continued at the Johns Hopkins University, at Vanderbilt University, and at a special research laboratory in Alabama.

PERMANENT RESULTS OF EMERGENCY RELIEF

An official of the United States Public Health Service has said that there have been two floods of late in the Mississippi Valley, one the inundation of 1927 and the other a flood of public health development through the creation of county health organizations staffed by full-time doctors, sanitary inspectors, and nurses.

Before the American National Red Cross and other agencies had completed an unusually well-organized and efficient emergency campaign for the rescue, protection, and assistance of the thousands of flood sufferers of seven states, a conference of representatives of the United States Public Health Service, the departments of health of the states concerned, the American National Red Cross, and the Rockefeller Foundation was held in New Orleans. A cooperative plan was worked out for the creation of full-time health organizations in the 100 counties which had been affected by the flood. Each agency pledged a contribution towards a total sum which, with local contributions, would provide the necessary support.

This attempt to capitalize a disaster for permanent progress has been gratifyingly successful. In 1928 eighty-five

of the 100 counties maintained full-time health organizations. Not one slipped back to the old part-time plan. Reports show that a large amount of constructive health work was done in sanitation, in reporting and control of communicable diseases, in maternal, infant, and school hygiene, and in health instruction of the public. Of the total cost of maintaining these organizations the Rockefeller Foundation bore nearly one-quarter.

But more than money was needed to organize the eighty-five counties. Competent men and women with knowledge, wisdom, and loyalty were essential. A certain number of trained or experienced persons were available. Others were lent for a time by state and city health departments until permanent appointees could be found. Even so, many posts were vacant. The burden of giving a short intensive training to men and women who offered themselves for local health service, especially in the flooded area, was assumed by the Foundation. Since July 1, 1927, at two field stations, one at Indianola, Mississippi, and the other at Greenville, Ohio, 72 physicians, 102 nurses, and 105 sanitary inspectors have taken this training at a cost to the Foundation of \$43,625.66.

LOCAL HEALTH WORK FROM WARSAW TO SHANGHAI

From the beginnings which have been described, the Foundation's program of aid to county or local health organizations has been extended until, during 1928, it included 263 projects in twenty-four different countries from Poland in Europe, through the Americas, to the Far East. Of these, 191 were in the United States, where the average budget was about \$10,000, of which the Foundation contributed approximately 15 per cent. The minimum staff for a county health department comprises a health officer, a nurse, a sanitary inspector, and a clerk, all giving full time to their duties. In many cases the number of nurses and inspectors is considerably greater.

In foreign countries plans must obviously be adapted to local conditions, taking into account actual possibilities and needs.



Medical examination in a rural school in Austria. Such examinations are an important feature of the public health demonstrations that are being conducted in certain districts of the country with the aid of the Foundation.

It would be both unimaginative and futile to attempt to impose any one standardized form of organization and work. The very variety of experimentation and the ex-

change of experiences enriches the results available for all. The demonstration is a genuinely international and cooperative one.

Thus plans which prove successful in the district of Gödöllő in Hungary may have suggestions for County Kildare in Ireland, just as the health center work



Group of children waiting to be vaccinated at a cooperative health station in the district of Bihac, Yugoslavia.

in Mokotow, a suburb of Warsaw, has already influenced similar programs in several countries. The idea has spread

to China, where arrangements were made in 1928 to set up a local organization within the boundaries of Greater Shanghai. The new local health projects inaugurated last year included demonstrations in Mexico, Jamaica, Costa Rica, Paraguay, Bulgaria, Irish Free State, and a group of South Pacific Islands for which a unified health service is to be tested.

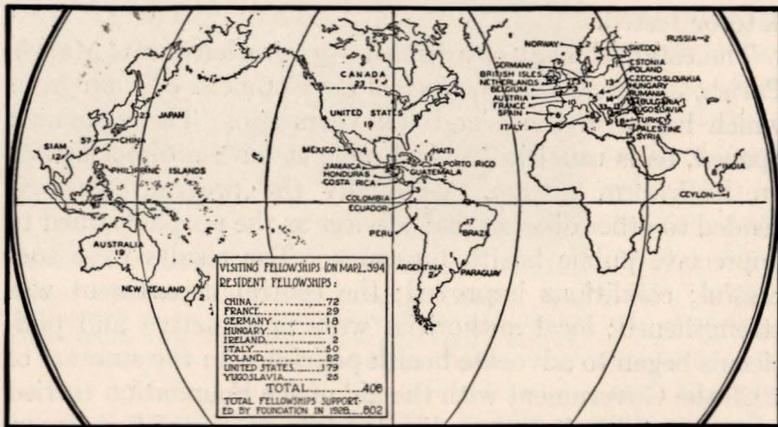
The establishment of a health organization in St. Mary's Parish, Jamaica, was the logical development of a program which began in the island ten years ago. The campaign opened, as is usual in tropical regions, with a direct attack on hookworm disease. Gradually the program was extended to other diseases and services as the people learned to appreciate public health measures. The results were successful; conditions improved; the central department was strengthened; local authorities were more active and politicians began to advocate health policies. In the summer of 1928 the Government with the aid of the Foundation carried out a tuberculosis survey directed by a distinguished American expert. This will serve as a basis for attempts at control of a disease which probably accounts for half the deaths of persons between the ages of 20 and 40. The rapid progress in Jamaica has been hastened by an ingenious and effective propaganda through lectures, press articles, posters, placards, and personal letters. The circulation of a popular monthly bulletin, *Jamaica Public Health*, has risen to 15,000 copies.

EIGHT HUNDRED FELLOWS FROM FORTY-SIX COUNTRIES

For several years the Rockefeller Foundation has supported fellowships in medical education and research, in public health, in nursing education, in the physical and biological sciences. Fellowships which aim at advanced training for the promotion of teaching and research have been largely turned over to other agencies to administer, while the Foundation has retained direct control of fellowships designed to prepare men and women for specified

positions in medical schools, schools of nursing, and government health departments and institutions with which co-operation is going on.

To the first group, for 1928, belong 218 fellowships which were administered as follows: National Research Council,



Countries in which fellowships were granted during 1928.

171; Australian National Research Council, 18; British Medical Research Council, 12; Notgemeinschaft der Deutschen Wissenschaft, 9; National Committee for Mental Hygiene, 8.

The second group of fellowships, for which the Foundation accepted immediate responsibility, comprised 584, distributed as follows: public health, 201; medical education, 331; nursing education, 43; human biology, 9.

Another classification may be made into resident fellowships, which are granted to persons for study in their native lands, and foreign fellowships, which enable holders to work in countries other than their own. Of the 355 traveling fellows appointed directly by the Foundation in 1928, a total of 332 crossed national borders; 70 per cent of the 355 traveling fellows pursued their studies in the United States.

On the whole, the results of the fellowship plan have been

highly satisfactory. The traveling fellowships which are under the immediate control of the Foundation are almost without exception used to prepare health officers, medical teachers and investigators, instructors in nursing, and public health nurses for specific positions guaranteed in advance in their own countries. Although the program has been in force only a few years the results, notably in certain countries, have been gratifying. Returned fellows occupy positions of influence; a few have already gained posts of recognized leadership.

While fellowships are never granted for the purpose of promoting better international relations but always in the interests of specific projects of public health or medical education, there are undoubtedly by-products of mutual insight, friendliness, and a sense of international comradeship in serving a common cause.

CONSULTATION AND FIELD SERVICE

The Foundation frequently uses its funds to give to some newly established or perhaps inadequately financed enterprise just that impetus requisite for successful operation or for necessary expansion of program. Sometimes this aid takes the form of lending the services of experts for a limited period, of advice from a qualified specialist, or of small temporary appropriations to help in reorganizing essential departments of health or in establishing new forms of service which, with this assistance, will be able to justify their claims for permanent support from local or governmental sources.

During 1928 seven American states and ten foreign countries received help of this type in developing their public health laboratory services; eight American states and the Kingdom of Denmark were assisted in expanding their epidemiological services; in four American states, five Central American republics, and Ceylon aid was given for the strengthening of departments of sanitary engineering; five American states and the countries of Denmark and Yugo-

slavia received assistance in improving their departments of vital statistics.

In France, Hungary, and Poland funds were provided toward the maintenance of bureaus for the study and reform of public health activities. In Brazil and France public health nursing services were aided. Assistance was given to bureaus of health education in Jamaica and the Netherlands East Indies; to the Institute of Social Hygiene, Budapest, to school hygiene work in Jamaica, to the division of communicable diseases and child hygiene of the Department of Health of Iowa, to the life extension unit of North Carolina, to the division of oral hygiene of the Department of Health of South Carolina, and to the division of public health education of the Department of Health of Illinois.

In several countries, contributions were made toward the salaries and travel expenses of personnel engaged in rural health work, funds were furnished for public health surveys, and the services of staff members were provided as consultants on public health problems.

AN INTERNATIONAL HEALTH SYSTEM EMERGES

The first international conference to consider health problems was held in 1851 when representatives of twelve European nations adopted concerted measures against cholera, plague, and yellow fever. Thereafter, at intervals of a few years, other congresses were called to insure better cooperation in conformity with rapidly advancing knowledge of preventive medicine. In 1907 a permanent International Health Office was set up in Paris. With the creation of the League of Nations, a Health Organization was established. This includes a Health Section, the work of which has been singularly successful under the leadership of an able Polish doctor, who was in 1928 reappointed for a second term of seven years. From the first, the Rockefeller Foundation has contributed a substantial part of the health budget of the League.

The chief activities of the League's Health Organization are: (1) the gathering and prompt distributing of information about communicable diseases through Geneva and a Far Eastern station at Singapore; (2) the collection of vital statistics and the publication of valuable statistical handbooks; (3) the maintenance of a bureau with reports, books, journals, pamphlets, etc., which bear upon public health problems; (4) the conducting of interchanges of health personnel by which groups of officials from many countries visit and

study conditions in one or more national and local health services; (5) the creating of commissions for the study of certain diseases or problems,



New Buildings of the Ministry of Hygiene, Angora, Turkey. The Foundation is cooperating with the Ministry in the development of a public health laboratory service.

e.g., malaria, smallpox, plague, cancer, opium addiction, infant mortality, health insurance, public health education, and vital statistics; (6) the international standardizing of vaccines and sera which have varied so widely in quality and value from country to country.

From time to time the League also undertakes special projects which fall outside its regularly organized services. Thus during 1928 Calmette's vaccination against tuberculosis was investigated; studies of alcoholism and of nutrition were undertaken, and an invitation from Greece was accepted to send a commission to survey its public health service and to recommend a plan of reorganization.

In the few years of its existence the League's Health Organization has come to be highly esteemed. It does enough to be influential; it does not attempt so much as to

be futile. It carefully avoids trying to be a central authority with quasi-legislative powers. Instead it gets the really important health leaders of all nations to work together, thus becoming the bearer of their proved experience and wisdom. The Rockefeller Foundation counts it a privilege to have a part in supporting this agency of world health.

WORKING WITH OTHER AGENCIES

In certain instances the Rockefeller Foundation cooperates with agencies not directly connected with governmental machinery. There are a number of well-established semi-governmental or voluntary organizations with definite fields of activity, committees appointed for specialized work, and certain private institutions working largely in the field of public health, which have been assisted during 1928. Among these are the following:

American Conference on Hospital Service. Payment towards maintenance of its hospital library and service bureau (Chicago).

American Medical Association. Contribution towards deficit on publication of the Spanish edition of its Journal.

Australian National Research Council. Fellowships in anthropology and allied subjects.

Canadian National Committee for Mental Hygiene. Studies in the application of mental hygiene to school children.

China Medical Association. Current expenses; maintenance of standards of medical education.

Commission on Medical Education. Contribution towards study of the medical curriculum in America.

Committee on Grading of Nursing Schools. General program.

Medical Research Council (Great Britain). Fellowships in medicine.

National Committee for Mental Hygiene. Survey of the care and treatment of mental deficiency and mental diseases; general expenses; fellowships.

National Medical Association of China. Current expenses.

National Research Council. Fellowships in mathematics, physics, chemistry, the biological sciences, and medicine.

New York Academy of Medicine. Endowment for educational opportunities and service for the medical profession.

Notgemeinschaft der Deutschen Wissenschaft (Germany). Fellowships in medicine.

Research and Teaching in Hospital and Clinic Service (New York City).

Union of American Biological Societies (through National Research Council). Editorial expenses in connection with publication of *Biological Abstracts*.

United Hospital Fund. Aid in its general program.

THE ADVANCEMENT OF KNOWLEDGE

Francis Bacon in the *New Atlantis* thus describes the purpose of the research institution which he made the center of his imagined paradise in a fabled island: "The end of our foundation is the knowledge of causes and secret motions of things; and the enlarging of the bounds of human empire, to the effecting of all things possible." Three hundred years have passed and this ideal increasingly inspires investigators in many lands who as never before are sharing one another's results and pressing forward in generous rivalry to advance "the knowledge of causes and secret motions of things."

The Rockefeller Foundation, even in the attempt to apply existing knowledge to the protection of the public health, is forced into seeking further facts about the nature of certain diseases. Thus opens a vista of research in preventive medicine and hygiene. So, too, in the whole field of fundamental human knowledge, in the natural, medical, and social sciences, and in those pursuits which have come to be known as the humanities, there are needs and opportunities for increasing search for new truths. In the discovery and development of investigators, in the releasing of them from

routine, in the improvement of their facilities, in the perfecting of their means of communication, the Foundation looks forward to cooperating with the institutions and special groups upon which modern society chiefly counts for the advancement of knowledge.

APPLICATIONS FOR AID

In 1928 the Foundation was obliged to decline 462 of the formal applications for aid which it received, inasmuch as the type of assistance requested therein did not fall within the scope of the activities of the organization as determined by its present policies. The Foundation does not make gifts or loans to individuals, or contribute to the building or maintenance of churches, hospitals (except as certain hospital features may be included in plans for medical education), or other local institutions, or support campaigns to influence public opinion on social or political questions.

The applications declined during 1928 may be classified under the following headings: hospitals and clinics 52, research 47, education 32, local institutions 25, public health 24, medical education 22, nursing education 13, endowment 7, publications 6, miscellaneous 234. This list does not include the many tentative requests for cooperation made to the central office or to staff officers in the field, or a large number of requests for personal aid and fellowships.

FINANCES FOR 1928

In the following financial statement is presented a summary of the receipts and expenditures of the Rockefeller Foundation in 1928. The income accruing from investments was \$9,175,550; the balance carried over from 1927 was \$7,260,242; a sum of \$12,000,000 was set aside from principal funds for the China Medical Board, Incorporated, in accordance with a resolution of the members as of November 9, 1928. Of these total funds \$21,690,738 was needed to meet the obligations which came due during the year and \$5,057,633 was subject to call in fulfilment of outstanding

appropriations. The remainder, available for transfer to the 1929 budget and subject to appropriations for that year, was \$1,687,421. A tabulation of expenditures for 1928 will be found below. A more complete financial statement will appear in the annual report of the Foundation for 1928, which will be published later in the year and which may be had by anyone upon application.

Statement of Receipts and Disbursements in 1928

<i>Receipts</i>		<i>Disbursements</i>	
Balance from 1927 (including refunds during 1928 on prior year appropriations)	\$7,260,242	Public Health	\$3,042,339
Income during 1928	9,175,550	Medical Education	17,266,153
Set aside from principal funds in accordance with resolution of the Members, as of November 9, 1928	12,000,000	Miscellaneous	781,888
		Administration	600,358
		Balance:	
		Payable on 1928 and prior appropriations	\$5,057,633
		Available for 1929 appropriations	1,687,421
			6,745,054
	<u>\$28,435,792</u>		<u>\$28,435,792</u>

SUMMARY OF EXPENDITURES IN 1928

I. Public Health

1. Regular program in control of hookworm infection, malaria, yellow fever, and in county health work; aid to state health services and bureaus for study and reform of health activities	\$1,925,805.64
2. Health Organization of the League of Nations	110,218.60
3. Public health education	
(a) Fellowships	226,133.33
(b) Study and training courses and travel of visiting officials	61,448.09
(c) Schools and institutes of hygiene and public health	
Maintenance	
(1) London School of Hygiene and Tropical Medicine	19,479.52
(2) Central Medical School for Native Medical Students, Fiji	17,291.22
(3) University of Zagreb, Yugoslavia	5,000.00
(4) State Hygienic Institute, Budapest, Hungary	3,680.00
(5) Institute of Hygiene, São Paulo, Brazil	14.00
(6) Harvard Medical School	8,500.00
Buildings, equipment, or endowment	
(1) State Institute of Public Health, Prague, Czechoslovakia	189,212.08
(2) State Hygienic Institute, Budapest, Hungary	48,648.49
(3) Institute of Hygiene, São Paulo, Brazil	117,459.85

THE ROCKEFELLER FOUNDATION

(4) School of Hygiene, University of Toronto . . .	\$250,000.00
(5) School of Public Health, Harvard University	49,500.00
(6) Imperial College of Tropical Agriculture, Trinidad, British West Indies	4,890.00
(7) Central Medical School for Native Medical Students, Fiji	4,860.00
(d) D. Anna Nery School of Nursing, Rio de Janeiro, Brazil	198.34
	<hr/>
	\$3,042,339.16

II. Medical Education

1. Medical institutions

Maintenance

(a) Peking Union Medical College	\$776,293.57
(b) Institutions in China other than Peking Union Medical College	33,582.02
(c) Central Europe: journals and apparatus	114,098.43
(d) American University of Beirut	40,000.00
(e) Chulalongkorn University, Siam	22,750.28
(f) University of Edinburgh	7,710.50
(g) Dalhousie University, Canada	2,000.00

Buildings, equipment, or endowment

(a) Free University of Brussels	1,539,236.94
(b) Peking Union Medical College	343,451.41
(c) Faculty of Medicine, São Paulo, Brazil	732,818.42
(d) University of Montreal	25,000.00
(e) University of Cambridge	22,368.94
(f) University of Lyon, France	269,581.73
(g) University of Strasbourg, France	3,936.88
(h) Institute for Psychiatric Research, Munich, Ger- many	75,000.00
(i) National School of Medicine and Pharmacy, Port au Prince, Haiti	15,000.00
(j) Keio University College of Medicine, Japan	100,000.00
(k) Chulalongkorn University	4,570.20
(l) New York Academy of Medicine	622,500.00
(m) China Medical Board, Inc.	12,000,000.00
2. Premedical schools	69,359.96
3. Hospitals	30,756.21
4. Fellowships and scholarships	289,321.30
5. Visiting commissions and professors, surveys, and pub- lications	31,403.30
6. American Medical Association: towards publishing a Spanish edition of its Journal	5,450.23
7. Commission on Medical Education: towards study of medical curriculum in America	10,000.00
8. Field service: salaries and expenses	79,962.89

 \$17,266,153.21

III. Miscellaneous

1. Biology

(a) Mental hygiene	\$43,173.07
(b) National Research Council Research fellowships in biological sciences	66,647.24
<i>Biological Abstracts</i>	57,078.74

EXPENDITURES

51

(c) The Johns Hopkins University Biological research	\$47,000.00
(d) Yale University Promotion of anthropoid research	10,000.00
(e) Fellowships	8,811.39
(f) Australian National Research Council Anthropological studies	26,029.05
Fellowships in anthropology	3,672.97
(g) University of Hawaii Study of race biology	20,000.00
(h) Bernice P. Bishop Museum, Honolulu Research in Polynesian anthropology	8,700.00
(i) Tohoku Imperial University, Japan Visiting professors	7,748.27
2. Nursing education	258,405.35
3. Fellowships in physics, chemistry, and mathematics	105,416.79
4. Hospital and dispensary service	62,966.61
5. Emergency Fund, China	36,042.00
6. Memorials for Dr. Adrian Stokes	20,197.07
	<hr/>
	\$781,888.55

IV. Administration

1. Maintenance of New York, European, and Peking offices...	\$600,357.60
	<hr/>
	\$21,690,738.52

FUNDS AND PROPERTY

As of December 31, 1928

Principal Fund

Book value as of December 31, 1927	\$162,291,624
<i>Deduct:</i>	
Amount withdrawn from principal in accordance with resolution of the Members, November 9, 1928	12,000,000
Principal Fund as of December 31, 1928	<hr/>
	\$150,291,624

*Lands, Buildings, Equipment*¹

<i>In China:</i>		
Shanghai Medical School: land	\$298,332	
Peking office: land and building	10,809	
<i>In New York:</i>		
Furniture and equipment of offices	45,832	
<i>In Paris:</i>		
Part interest in building occupied by Paris office	68,000	422,973
	<hr/>	<hr/>

Undisbursed Income

General income (For offsetting liabilities, see page 52)	\$6,745,054
	<hr/>

¹By action of the Members, November 9, 1928, the property of the Peking Union Medical College costing \$9,258,515, formerly carried in this account, was transferred to the China Medical Board, Inc.

Unpaid Appropriations, Pledges, and Authorizations

Unpaid appropriations for 1928 and prior years...		\$5,057,633
Appropriations, pledges, and authorizations which become effective in 1929 and subsequent years:		
1929	\$10,796,933	
1930	3,559,296	
1931	1,237,213	
1932	622,525	
1933	375,550	
1934	106,960	16,698,477
		<u>\$21,756,110</u>

NOTE. A complete statement from the Treasurer, with all details as to investments, other property, income, and expenditures, is contained in the regular annual report of the Rockefeller Foundation which will be issued later in the year.

ORGANIZATION

The following are the members and officers of the Rockefeller Foundation for the year 1929:

MEMBERS

James R. Angell	Ernest M. Hopkins	Augustus Trowbridge
Trevor Arnett	Charles P. Howland	George E. Vincent
John W. Davis	Vernon Kellogg	George H. Whipple
David L. Edsall	John D. Rockefeller, Jr.	William Allen White
Simon Flexner	Julius Rosenwald	Ray Lyman Wilbur
Raymond B. Fosdick	Anson Phelps Stokes	Arthur Woods
Jerome D. Greene	Frederick Strauss	Owen D. Young

OFFICERS

John D. Rockefeller, Jr., *Chairman of Board of Trustees*
George E. Vincent, *President*
Roger S. Greene, *Vice-President in the Far East*¹
Selskar M. Gunn, *Vice-President in Europe*
Edward Capps, *Director for the Humanities*
Edmund E. Day, *Director for the Social Sciences*
Max Mason, *Director for the Natural Sciences*
Richard M. Pearce, M.D., *Director for the Medical Sciences*
Frederick F. Russell, M.D., *Director, International Health Division*
Norma S. Thompson, *Secretary*
Louis G. Myers, *Treasurer*
George J. Beal, *Comptroller*

EXECUTIVE COMMITTEE

The President, *Chairman*

Trevor Arnett	Jerome D. Greene
David L. Edsall	Charles P. Howland
Simon Flexner	Vernon Kellogg
Raymond B. Fosdick	Arthur Woods
Norma S. Thompson, <i>Secretary</i>	

FINANCE COMMITTEE

John D. Rockefeller, Jr., *Chairman*

Raymond B. Fosdick	Frederick Strauss
--------------------	-------------------

SCIENTIFIC DIRECTORS

INTERNATIONAL HEALTH DIVISION

Rufus Cole, M.D. *Chairman*

Eugene L. Bishop, M.D.	Wade H. Frost, M.D.
Louis I. Dublin	Wilson G. Smillie, M.D.

C.-E. A. Winslow, D.P.H.

Frederick F. Russell, M.D. *Secretary*

¹Resigned May 1, 1929.

The Foundation holds regular meetings in May and November. The Executive Committee and the Scientific Directors of the International Health Division hold monthly meetings.



